ACQUIRE Evaluation and Research Studies

IUD Use and Discontinuation in Bangladesh

E & R Study #8 ◆ November 2007

USAID FROM THE AMERICAN PEOPLE

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Acknowledgments

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Acronyms and Abbreviations

ACQUIRE	Access, Quality, and Use in Reproductive Health
BDHS	Bangladesh Demographic and Health Survey
CAR	contraceptive acceptance rate
CPR	contraceptive prevalence rate
DGFP	Directorate General of Family Planning, Bangladesh
FP	family planning
FWA	family welfare assistant
FWV	family welfare visitor
Hb	hemoglobin
HFWC	Health and Family Welfare Center
IDI	in-depth interview
IUD	intrauterine device
LAPM	long-acting and permanent methods of family planning
MCWC	Maternal and Child Welfare Center
MIS	management information system
NGO	nongovernmental organization
SPSS	Statistical Package for the Social Sciences
STI	sexually transmitted infection
TFR	total fertility rate
USAID	U.S. Agency for International Development
WHO	World Health Organization

Executive Summary

Background

The ACQUIRE Project is a five-year cooperative agreement awarded by the U.S. Agency for International Development (USAID). Building on an earlier project focusing on long-term and permanent methods of family planning (LAPMs), ACQUIRE has undertaken a number of interventions in collaboration with the Directorate General of Family Planning (DGFP) since 2001 to support the Bangladesh Government's National Population Policy. One aspect of the ACQUIRE Project has been to rebuild capacity for LAPM service delivery within the public sector.

Awareness of the intrauterine device (IUD) as a long-term contraceptive method is fairly high among married women (89.6%) and married men (69.5%) in Bangladesh. The current *use* of IUDs, however, remains low (0.6%) compared with the use of other modern methods. According to the recent Bangladesh Demographic and Health Survey (BDHS), contraceptive discontinuation rates are very high for all methods in Bangladesh: About half of Bangladeshi couples discontinue their family planning method within one year, a rate much higher than in other countries in the Asian region. Worldwide, discontinuation rates for the IUD are generally lower than for other modern methods, yet the 12-month IUD discontinuation rate in Bangladesh was reported to be 35.4% in 2004, not much lower than that of oral contraceptives (46.5%) and injectables (48.7%).

The majority of Bangladeshi IUD users (63.7%) state that side effects and health concerns are the major reasons behind method-specific IUD discontinuation (NIPORT, Mitra and Associates, and ORC Macro, 2005). What do these reasons mean? Are there some side effects that are more important than others? Are there specific client characteristics that are predictive of IUD discontinuation? Does awareness of those side effects minimize their negative outcomes? Can anything be done within the facility to affect satisfactory contraceptive use? Although some research around discontinuation has already been done in Bangladesh and elsewhere, the studies have centered on identifying the sociodemographic characteristics of users most correlated with discontinuation. Little research exists on clients' perspectives on IUD discontinuation in Bangladesh, on the nature of the side effects, and, more specifically, on the tolerance of the side effects. In an attempt to answer some of these questions, this report details a study of IUD acceptors and discontinuers undertaken in 2007.

Study Objectives

The study's overall objectives were to quantify the outcomes of IUD use 12 months after insertion and to examine factors associated with IUD discontinuation in six districts of Bangladesh. Specific objectives were to examine:

- The sociodemographic characteristics of IUD acceptors and discontinuers
- The outcome of IUD use among IUD acceptors within the first 12 months and the reasons given for discontinuation
- Common side effects, how they were experienced by both continuers and discontinuers, and factors associated with experience with and tolerance of those side effects
- Key determinants of discontinuation
- Preinsertion and postinsertion health-sector support for IUD clients

Study Methodology

The study collected three types of data.

1. ***IUD acceptors.*** A retrospective cross-sectional design with a multistage cluster sampling approach was employed to identify a sample of 375 respondents who had accepted an IUD in March 2006. These women were then interviewed in March 2007, exactly one year after insertion, using a closed-ended, structured interview. Trained female enumerators conducted one-on-one interviews, which took place at the client's residence or at a suitable place in the community. The principal aim of this part of the study was to quantify the outcomes of IUD use and qualify the factors contributing to IUD discontinuation.

2. ***IUD discontinuers.*** The group of acceptors included 156 discontinuers. Of these discontinuers, a smaller sample of 30 women who had discontinued because of side effects was also interviewed using an in-depth interview (IDI) approach. A semi-structured questionnaire, consisting of both open-ended and closed-ended questions was used to conduct IDIs with the IUD discontinuers. Some of the more skilled interviewers and some ACQUIRE staff managed these 30 interviews; most were tape recorded. Questions revolved around the experience of having the side effect (e.g., how excessive bleeding manifested itself and what this meant), the steps taken to try to resolve the issue, and decision-making processes around removal.

3. ***Provider interviews.*** The study also included provider interviews to determine how providers perceived IUD-related problems and how they managed them. Both clinical service providers such as the family welfare visitor (FWV)/nongovernmental organization (NGO) paramedic and community-level fieldworkers such as the family welfare assistant (FWA) were interviewed. Researchers used a semi-structured questionnaire consisting of both open-ended and closed-ended questions to conduct interviews. A total of 60 service providers were interviewed in private settings at the facilities and in the communities.

All instruments were translated into Bangla, and interviews were conducted in Bangla after field testing. All data were entered into Statistical Package for the Social Sciences Version 12.1. Univariate and multiple regression analyses were conducted to assess the possible determinants of experience of side effects and discontinuation at 12 months.

Field work took place in March 2007. Six survey teams were formed, with each team made up of one supervisor and four enumerators. To ensure the consent and confidentiality of the selected acceptors, before an interviewer visited a household, an FWA approached the woman as if for a routine visit. The acceptor was asked if she would be willing to be interviewed—at another time or location, if necessary. In some cases, an FWA or interviewer had to visit a client's residence more than once to complete all sections of the questionnaire and had to meet the client away from the home (and family). IDIs were conducted after the acceptor survey was completed and were conducted by experienced enumerators, including some ACQUIRE staff. Enumerators were trained for four days, which included a day-long questionnaire pretest/field practice exercise.

Summary and Discussion of Key Findings

This study of 330 acceptors in six, mostly rural, study districts found a 12-month discontinuation rate of 47.3%, a rate higher than that reported in the last BDHS. The study's key findings are presented in the following paragraphs.

IUD acceptors were uneducated, poor, rural women with a history of frustrated and ineffective management of reproductive intentions.

Most IUD acceptors were found to be poor, uneducated, rural women, who were dependent on their husbands, and lacked exposure to print media, radio, or TV. Although very young, most women expressed a desire for no more children or spacing of more than three years. The majority appeared to be good candidates for the IUD. They were also largely experienced contraceptive users, having used other methods before the IUD; however, many were failed or short-term users, having used previous methods for less than one year. One-fifth of users had tried an IUD before, and more than half of these had discontinued within the first year. These data are consistent with other data from Bangladesh that show that early discontinuation of all methods and switching of methods are commonplace practices.

Most women thoroughly consider the decision to have an IUD, but many do not involve their husbands.

Most acceptors obtained their IUD in rural clinics after having had several discussions with friends, relatives, and health workers before making a decision. One-quarter of women who accepted an IUD either did not discuss the matter with their husband or had an IUD inserted without their husband's approval. The majority of women also made the final decision themselves to have an IUD inserted, although one-quarter made the decision with their husband and many more did so after being told to do so by their husband. Those women who did not seek their husband's approval were far more likely to discontinue use than were couples who shared the decision to use the IUD. This is consistent with other data emphasizing the need for men to be involved, especially in strongly patriarchal societies.

IUD acceptors believe the IUD has fewer side effects than other methods.

The acceptors appeared to largely know the benefits of the IUD as a long-acting method. Half of users, however, accepted an IUD because they thought the IUD had fewer side effects than other methods—an important fact to note, since many were previously users of the pill and the injectable who likely discontinued these methods because of side effects. Despite their assertion about the advantages of the IUD, the majority of women also reported that providers had warned them about possible side effects.

Side effects are endemic, but differentially experienced.

After insertion, more than two-thirds of acceptors reported that they had experienced menstrual changes and abdominal pain, and one-third mentioned vaginal discharge and general malaise. Most problems reportedly began soon after insertion, leading women to ascribe their symptoms to the IUD itself, despite the fact that some of them reported having these problems before the IUD was inserted. Half of those with menstrual changes found periods to be heavier, and one-quarter said their periods became irregular. These changes led to concern about their health and, in most cases, removal of the IUD.

Interesting differences were recorded between those who reported experiencing side effects and those who did not. Women in some districts were much more likely to report having side effects than were women in other areas, as were women who reported having a preexisting reproductive health problem. Importantly, women who did not have the approval of their husbands to use the IUD were more likely to report side effects than were women who had that approval, and women who made the final decision with their spouse to use the IUD reported fewer side effects than did women who did not decide with their spouse. Although the association was not statistically significant, poorer women, less-educated women, those with higher parity, and those with a history of short-duration family planning use were also more likely to report side effects. The fact that

women reported having obtained information from health workers did not appear to influence their experiencing side effects; in fact, if anything, women who reported getting information about the IUD from FWAs and FWVs and those who said the health worker advised them about side effects, when to return, and other related factors were slightly more likely to report having side effects. The observation of these differences suggests that although many side effects have a physiological basis (e.g., extra menstrual flow, which may be problematic for women who are already experiencing anemia), community, societal, religious, and spousal factors also are at play in causing women to see these physiological changes as "problems."

Side effects, especially bleeding, are the main reason for removal.

Of those who discontinued IUD use, few consulted an FWV before deciding to have the IUD removed; rather, most went to an FWV to demand removal, while one-quarter simply removed the IUD themselves. Although slightly more than half of the women reporting side effects had the IUD removed, side effects were the overwhelming reason for removal. More women reported excessive bleeding than any other side effect, and this was usually accompanied by abdominal pain and often other problems. Excessive bleeding was most likely to be named as the *number one* reason for discontinuation (pain was second). While many women noted abnormal discharge, weakness, and fever to be key side effects, these were not given as key reasons for IUD removal.

Women with bleeding problems quickly discontinue use.

Despite reporting having suffered side effects, many women continued to use the IUD; they reported being very satisfied and planned to continue using the IUD for several years. Women seemed to be in two groups: those who could tolerate side effects, and those who could not. Interviewers observed little difference in the length of time continuers and discontinuers experienced symptoms, which either then disappeared (continuers) or were no longer reported because the IUD was removed (discontinuers). What is clear is that painful sex, vaginal discharge, and general weakness were tolerated longer by the women in this study than were a bleeding problem and/or abdominal pain before removing the IUD. Moreover, it appears that the majority of discontinuers who had a bleeding problem did not tolerate it for more than one month before removing the IUD. This would seem to be a critical time for ensuring good follow-up and for providing reassurance to these women that bleeding problems will likely not continue, as almost half of the continuers had bleeding that ended after the first month. Also, if donors were to secure a reasonable price for the levonorgestrel IUD, which is associated with less bleeding, some of these problems could be mitigated in the future. Currently, this is not a viable option, however, due to the high costs associated with the product and the amount of staff retraining that would be required.

Prolonged and increased menstruation is a fundamental problem for IUD users and their spouses.

The descriptions of side effects obtained in the IDIs were important in trying to understand how problems manifested themselves and how they impacted the women's lives. The women's descriptions of "normal" menses and altered menses during IUD use show that considerable changes occurred in both the duration and intensity of their menses. Other side effects, such as pain and vaginal discharge, were also common. It is clear from the varying experiences of side effects reported (and the generally high incidence compared with any other country) that for many women, the side effects may be perceived rather than real, or, if real, are perceived as intolerable.

The side effects caused dramatic reactions, with women describing very intense emotions and fears. Menstruation and painful intercourse appeared to be particularly problematic issues. The IDIs showed that women felt a broad range of emotional responses (guilt, shame, fear, anxiety) that

focused on menstruation and its associated taboos. Women described being unable to pray, eat properly, work, or have sexual relations during menstruation.

Women reported that their menstrual duration doubled as a result of using the IUD, and they perceived that the quantity of bleeding doubled as well, in line with reported data. Studies in developed countries have suggested that women can maintain reasonable iron levels even with an increase in blood loss of up to 55%, though other studies have shown that while hemoglobin levels may not be affected by copper IUD use, ferritin levels among IUD users are lower than among nonusers. The general consensus is that women with iron-deficiency anemia can use IUDs. More research may be needed in Bangladesh, however, where it is estimated that 45% of nonpregnant women are anemic.

Earlier studies have suggested that women's *perceptions* of the menstrual cycle may be more associated with discontinuation than actual quantity or duration of blood loss. Studies from other countries have shown that increased duration of menses affects women more than increased blood flow and is a major predictor of IUD discontinuation, no matter what method is being used. In this study, the women's descriptions of what this additional menstruation meant to them and to their lives in the marital home and in the larger society suggest that this side effect was intolerable.

In many societies, menstruation is associated with being unclean or impure, and women are barred from many activities while menstruating. Many cultures describe menstrual blood as "polluting." Such a term reflects the common misconception that the purpose of menstruation is to rid the woman of "bad blood" that is building up inside her body. In more traditionally conservative areas of Bangladesh, excessive menstruation causes substantial societal and familial problems. There are many mistaken beliefs associated with menstruation and suspected severe consequences for breaking the rules surrounding menstruating women. For example, menstruating women cannot have sex, go certain places or touch certain things, participate in prayers or eat certain foods. Women's lives are often seriously curtailed, and in some societies menstruating women are unable to function in any normal capacity. Most rural women are unable to buy sanitary towels and have to rely on pieces of old cloth to stop the blood flow. Menstrual rags are considered harmful and shameful and thus must not be seen by men or boys. These rags must be washed in the latrine and then dried inside, hidden in a corner, under the bed, or in the rafters, where they may not dry properly and therefore can become moldy. Additional bleeding thus causes additional problems. The women in this study mentioned many of these issues as key obstacles to their IUD continuation. Furthermore, if they are unable to eat a full diet and if they are menstruating more than usual in their already anemic state, these women may become truly weakened. This study suggests that it is a combination of physical, social, and psychological factors that make contraceptive use difficult in this society when bleeding patterns are affected.

Many women also complained of painful coitus, but it is not clear what would be the anatomical reason for this. Again, it may be a psychosomatic manifestation of the spouse's unpleasantness due to the woman's reduced availability for sex due to menstruation and to men's complaints about making contact with the IUD's long string during intercourse, which is in fact more uncomfortable for the man than for the woman. As described by the discontinuers, the lack of understanding and fear about what these side effects meant, the inability to participate in normal life, and the ensuing arguments with spouses clearly played a role for most women in the decision to remove the IUD.

Husbands mitigate or exacerbate IUD side effects.

Although three-quarters of women reported experiencing side effects, not all removed the IUD as a result. Other factors were also important in discontinuation. Women with a history of contraceptive

discontinuation (especially poor previous IUD use) and a history of preexisting reproductive health problems were more likely to discontinue IUD use. Factors such as being older, of higher parity, poor, and uneducated also were associated with discontinuation. Other factors, such as spousal support (or lack thereof), were seen to play a role in either mitigating or exacerbating the role that these side effects play. Women who had discussed the IUD with their partner and had together decided on IUD use described having fewer side effects and were better able to tolerate such effects until they went away. Women who discontinued IUDs appeared to have unsupportive spouses before insertion and/or unsupportive husbands after insertion. Women reported that their spouse complained about the strings and about the menstrual changes as much as, if not more than, they did. Husbands were generally described as very unsupportive when problems related to IUDs persisted and caused family problems, especially if husbands did not know about or approve the use of the IUD. Some husbands were described as abusive and angry when their wife was unable to work, unable to pray, and unable to participate in normal community activities as a result of IUD use. It is not surprising that in this social milieu, women feel desperate and unmotivated to continue IUD use when confronted with twice as many menstrual days as usual and a threatening spouse. Women who experienced bleeding problems *particularly* and who had not obtained their husband's approval to use the IUD were highly likely to discontinue use. Friends and neighbors, when consulted about resulting problems, usually advised the client to remove the IUD. Service providers often overlook family and community relationships, and yet these relationships are important in influencing the support women receive to deal appropriately with side effects. In Bangladesh, women have generally been the focus of family planning campaigns, with few efforts to include men, despite the DGFP recommendation that men must consent to their wives' use of the IUD.

Health-sector factors not associated with continuation.

Health-sector and service delivery variables did not appear to strongly influence continuation or discontinuation, except that those having the IUD inserted at a rural facility and at a government facility were most likely to discontinue use. If anything, those reporting receiving more information (such as when to return for a checkup) were more likely to remove the IUD than were those who reported not getting this information. Having been counseled about possible bodily changes or side effects was *not* associated with a lower rate of discontinuation, nor was having been counseled about string checking or about when to return to the facility. This is also consistent with data from other studies. This study was not able to evaluate the *quality* of counseling, but earlier studies have suggested that it is less than optimal, with few providers providing enough basic information about side effects. The majority of women interviewed reported that they had been warned about side effects, but they described advice as vague; they had been told not to worry, just come back, or wait for the side effects to go away. The problem is that women *did* worry about these side effects and treated them as major, sometimes even life-threatening events. While one would not want to suggest that counseling is not important, it is the nature of the counseling (which may focus on routine biomedical and insignificant issues, or issues that appear unimportant in the abstract, rather than on suspected key contributors to discontinuation, such as spousal and socio-demographic and cultural issues) that makes it ineffective in reducing discontinuation. The Bangladesh family planning manual does not provide guidance to health workers in how they should discuss side effects or how they should approach the issue of excessive menstruation, only that it should be discussed. Several studies have suggested that women in many developing countries have a limited understanding of the nature of menstruation, the within-normal limits of duration and flow, and the fact that menstruation is generally neither harmful nor unclean. It is not surprising that unless girls and women are helped to better understand these issues, and are counseled accordingly, they will continue to harbor the myths that make menstruation so worrying and socially unacceptable and will continue to restrict their mobility and behavior during menstruation.

Although providers also mentioned that they knew men were key barriers to successful IUD use, dealing with this issue was not included in their list of activities that could help improve IUD use and continuation. It is likely that providers recognize the problem of men, religion, and menses as related to IUD use, but are not trained to handle such issues or do not see it is as part of their responsibility. Rather, they focus solely on providing information to the client about possible side effects, without acknowledging that women cannot manage the side effects because of socio-cultural conditioning and taboos around menstruation.

Help is not always timely or relevant.

Study respondents reported that once side effects manifested themselves, providers tried to encourage them to retain their IUD and to wait for the side effects to go away, but they reported that by the time they went to see a provider, they (or their spouses) had already made the decision to discontinue use.

The health workers seemed generally positive about IUDs and supportive of the women who used them. Most providers are older and experienced, having spent many years working in the same place; this is especially true of FWAs, who are well-rooted in their communities. Most FWVs seemed to know what is expected of them vis á vis IUD services, but did not express great confidence in providing IUD services, possibly because the majority actually inserted very few IUDs. Most providers acknowledged that there are problems with IUD use in the community, although only half said that side effects are a key problem, and many did not seem to be fully aware of the high discontinuation rates (not surprising, given that that one-quarter of discontinuers removed the IUD themselves). When asked about screening women, not all providers mentioned using key history questions or giving information that is listed in the Bangladesh national family planning guidelines. This would seem to be important, given the correlation observed between preexisting complaints and subsequent problems with the IUD. Few providers mentioned that they would check for anemia, yet this is a key DGFP recommendation. Rather than focus on management of side effects, health providers focused on issues such as checking strings—a standard protocol item in Bangladesh, though now not generally thought to be of much clinical importance. Many women appear to be regarded by providers as poor candidates for IUDs because they are too young or too old (over 35), and this is not a DGFP criterion. Although the providers are aware of common myths around the IUD, they do not take it upon themselves to address them.

Providers reported (and the clients confirmed) that they try to reassure women and suggest they try to manage side effects for a little longer. It seems that many women had to ask more than once for IUD removal (and many just removed the IUD themselves). We recognize that there is a fine line between encouraging a woman to continue using the IUD and refusing to remove it, and what providers describe as encouragement to continue might be construed by the client as a refusal to remove the IUD. Many women reported that they were unhappy that the provider simply provided encouragement to persevere rather than solve their problem with medications, a recurring theme in settings with cultural expectations about the power of medicine. Beyond this, some health workers were described as unhelpful or even angry, and this issue needs to be addressed as soon as possible.

Given the early discontinuation rates observed, support for clients during the first three months of IUD use would seem to be important, yet clients reported few visits by FWAs. This appears to be part of a general problem in the country: There has been a significant decline in fieldworker visits since 1996. In the 2004 BDHS, only 18% of married women of reproductive age reported having been visited for family planning services by a fieldworker in the six months preceding the survey. Of women using the IUD, 67.5% were not visited by a fieldworker in the previous six months.

Recommendations

Despite personal problems with the IUD, clients retained a positive respect for it, with most discontinuers reporting that they would still recommend it to others. Similarly, most providers had an affirmative attitude toward the IUD. It is a method worth pursuing, but interventions are required to help reduce the number of side effects perceived or experienced by women and to reduce the amount of discontinuation. The recommendations provided here may apply to other methods (such as oral contraceptives and injectables) that also cause bleeding irregularities.

Menstrual issues need to be more openly addressed with clients and partners.

Although the reported level of preinsertion counseling did not appear to influence IUD use outcome, the nature and quality of that counseling needs reassessment. The management of menstrual complaints needs to be an integral part of reproductive health services. Instead of merely telling women that they might experience uterine cramping and excessive bleeding, counseling needs to focus on explaining the nature of that unusual bleeding and its likely duration. Clients need help in understanding that if menstruation is heavier or lasts longer, it is not a cause for concern. Counseling also needs to focus much more on changing spousal and societal attitudes toward side effects (especially menstrual changes) and on equipping women to manage those side effects and to negotiate discussions with spouses around what is happening. Efforts are also needed to educate women about the range of normal vaginal secretions.

Women whose husband was not involved in discussions or decisions about the IUD are much more likely to report having side effects and are much more likely to discontinue use. It seems that everyone knows that male and community attitudes about menstruation and other side effects are key barriers to the success of IUDs (and other contraceptives) in Bangladesh, yet few providers are equipped or able to address the problem. Efforts need to be made to develop materials for men, or to encourage husbands to accompany their wives for counseling.

Programs that focus on enhancing communication between men and women will require time and effort. Some researchers have remarked that verbal communication between partners about reproductive health is low in many developing countries and that gender-based power inequities contribute to that lack of communication. Indeed, the idea of not communicating seems more normative. Moreover, one of the important mechanisms to maintain social control over women's sexuality is to deny them access to information on sexuality and other issues. This is done in various ways, including attaching negative values to any discussion of sexuality, controlling mobility, and discouraging access to relevant literature. Solutions need to be broad-based and less medically focused if contraceptive use and continuation in Bangladesh is to improve.

Community interventions are needed.

More general community-level initiatives that address societal and religious attitudes toward menstruation are needed, particularly in those districts with high discontinuation rates. In some developing countries, efforts are underway to educate young women about menstruation before menarche, so that they are better prepared and have fewer negative reactions to menstruation. Especially important is learning about hygiene (since in many places it is a common taboo to wash during menses), including the need to frequently change pads or cloths. Some projects include helping young women to make their own sanitary napkins to offset costs associated with frequent changes and to demystify menstruation as a taboo subject. A comic book for adolescents has already been developed in Bangladesh, and this could be used and adapted for older women.

Programs that involve the wider community, including men and religious leaders, are also important. Male-focused and religion-focused work needs to concentrate on education about the

physiology of menstruation that will help to dispel rumors and misconceptions. It should also focus on support for women who are using contraception, on helping them understand side effects and their self-limiting nature (i.e., the need to be patient), and, most importantly, on reducing taboos around menstruation. Programs need to stress that women need to be helped if they feel unwell, should be allowed to eat a healthy diet, and should be allowed to meet as much as possible with friends and family during menstruation. FWAs, other community and social workers, and behavioral change specialists need to be involved in these broad-based efforts.

Routine prophylaxis for bleeding should be considered.

Our data show that bleeding patterns did appear to change significantly during IUD use. In a known anemic population, it may be that analgesics should be routinely given at the time of IUD insertion to try to mitigate some of the effects of cramping and extra menstrual flow. If such analgesics are given beforehand, then women can use them as and when needed, rather than having to return to the clinic when problems arise or buy inappropriate medications from a pharmacy. The World Health Organization (WHO) recommends the administration of nonsteroidal antiinflammatories such as ibuprofen (but not aspirin) or tranexamic acid and iron supplements, and as well as provision of advice about eating iron-rich foods. Although iron supplementation is typically recommended, others have recently argued that supplementation will not improve iron status if significant blood loss is occurring through menstruation.

Preinsertion screening and counseling should be improved.

Those women who had problems before insertion, or who had problems with their methods, were much more likely to experience side effects after IUD insertion and were much more likely to discontinue use. Providers need to take a better history from clients to identify women who have existing or recent problems, so as to give them additional counseling about what to expect. In addition, women in some districts reported far more side effects and discontinued use more often than others. Providers in these districts need refresher training to help them concentrate their efforts on better counseling, especially among vulnerable populations. Providers need to be careful not to persuade women to accept this method when they are not sure about it, or before discussions with partners.

FWAs should play a key role in supporting clients in the first three months after insertion.

The first three months after IUD insertion are critical, as women will either manage their side effects or have the IUD removed. This is a crucial time to ensure good follow-up and reassure women that bleeding problems will likely not continue and are not to be feared. FWAs reported that they visited clients regularly, but this was not borne out by testimonies of the clients themselves. FWVs must inform FWAs of women in their communities who are new acceptors and ensure that FWAs know how to counsel women about these issues. Women appear to want a “magic bullet” to manage side effects such as bleeding and abdominal pain, but none exists apart from painkillers and iron supplements. It seems that postinsertion support needs to focus more on issues of normal vaginal flora, sexuality, menstruation (and notions of impurity), and management of a husband’s concerns. Training FWAs to be better supporters of contraceptive acceptors is urgently needed.

Introduction

Background

The ACQUIRE Project is a five-year cooperative agreement awarded by the U.S. Agency for International Development (USAID). Building on an earlier project focusing on long-term and permanent methods of family planning (LAPMs), ACQUIRE has undertaken a number of interventions in collaboration with the Directorate General of Family Planning (DGFP) since 2001 to support the Bangladesh Government's National Population Policy. One aspect of the ACQUIRE Project has been to rebuild capacity for LAPM service delivery within the public sector.

Over the past three decades, Bangladesh experienced a sharp decrease in its total fertility rate (TFR) from 6.3 lifetime births per woman to 3.0 births per woman, and an increase in the contraceptive prevalence rate (CPR) (modern methods) from 5% to 47% (NIPORT, Mitra and Associates, & ORC Macro, 2005). Since the 1990s, however, the TFR has plateaued. The government's goal now is to decrease the TFR from 3.0 to 2.2 and increase the CPR to 72% by 2010, by boosting contraceptive prevalence overall and by increasing LAPMs' share of the method mix. The impact of contraceptive use on fertility depends, however, not only on contraceptive acceptance, but also on effective use and long-term continuation, with minimal switching.

Awareness of the intrauterine device (IUD) as a long-term contraceptive method is fairly high among married women (89.6%) and married men (69.5%) in Bangladesh. The current use of IUDs, however, remains low (0.6%) compared with the use of other modern methods. Contraceptive discontinuation rates are very high for all methods in Bangladesh: About half of Bangladeshi couples discontinue their family planning method within one year (NIPORT, Mitra and Associates, & ORC Macro, 2005), a rate much higher than in other countries in the Asian region (ORC Macro, 2007). Worldwide, discontinuation rates for the IUD are generally lower than for other modern methods, yet the 12-month IUD discontinuation rate in Bangladesh was reported to be 35.4% in 2004 (NIPORT, Mitra and Associates, & ORC Macro, 2005), not much lower than that of oral contraceptives (46.5%) and injectables (48.7%). Furthermore, the IUD discontinuation rate in Bangladesh is considerably higher than the 13.3% discontinuation rates noted in a 14-country study of the TCu-380A IUD (Rivera et al., 1999) and the 6% 12-month discontinuation rate in a large multicountry trial (UNDP/UNFPA/WHO/World Bank Special Programme of Research, Development and Research Training in Human Reproduction, 1997). These Bangladesh rates are, however, consistent with or even lower than data from other studies in the region. For example, Saxena (1996) in India noted a 12-month discontinuation rate for the IUD of 70.7%, and in a study from Karnataka in India, one-third of IUD users discontinued within one year (Rajeshwari & Hasalkar, 1996).

The majority of Bangladeshi IUD users (63.7%) state that side effects and health concerns are the major reasons behind method-specific IUD discontinuation (NIPORT, Mitra and Associates, & ORC Macro, 2005). But what do these reasons mean? Are some side effects more important than others? Do specific client characteristics predict IUD discontinuation? Does awareness of those side effects minimize their negative outcomes? Can anything be done within the facility to affect satisfactory contraceptive use? Although some research around discontinuation has already been done in Bangladesh and elsewhere, the studies have centered on identifying the sociodemographic characteristics of users most correlated with discontinuation. Little research exists on clients' perspectives on IUD discontinuation in Bangladesh, on the nature of side effects, and, more

specifically, on the tolerance of side effects. In an attempt to answer some of these questions, this report details a study of IUD acceptors and discontinuers undertaken in 2007.

Existing Literature on IUD Discontinuation

Literature from around the world points to the complexity of decision making around IUD acceptance, continuation, and early (within the first year) discontinuation—complexity that reflects the multifaceted domain of reproductive health especially in traditional rural societies (Gittelson et al., 1994; Ross et al., 2002). In most studies, side effects are noted as the key reason for discontinuation of both hormonal and nonhormonal family planning methods (Das & Pradhan 1995; Sekadde-Kigondu et al., 1996; Wang, 1996). In the case of IUDs, irregular (especially excessive) bleeding, lower abdominal pain, and vaginal discharge (Cao et al., 2000; Rivera et al., 1999) appear to be key reasons for discontinuation. Bleeding problems are thought to be particularly problematic for users of the higher copper-bearing IUDs, and, clinically, menstrual blood loss has been found to be approximately 30% higher in copper IUD users than in nonusers (Newton, 1993). Women throughout the world are thought to view bleeding changes very seriously, noticing even minor changes in their monthly menses (Best, 1998). According to a World Health Organization (WHO) study in 10 countries, most women surveyed wanted their menstrual cycles to never change (Snowden et al., 1983), and particularly did not want any additional menstruation. Yet, what women consider "normal" menstruation varies greatly, as does what they will tolerate in terms of changes. The WHO study also showed that on average, duration of menstruation varied over a three month period from 12 days for women in Mexico to 18 days for women in the United Kingdom (Snowden et al., 1983).

Additional menstrual flow may be a problem in areas with high rates of anemia, but such effects are not well documented. It is known, however, that bleeding problems and other discharges are a major concern in many communities, and that this side effect is also often accompanied by pain, weakness, aches and pain, and headaches (Bhat & Halli 1998; Chaaturvedi et al., 1995). It is not clear whether these multiple complaints are physically associated with a biomedical pathology or are part of a culturally defined way of presenting more diffuse general feelings of psychosomatic problems (Trollope-Kumar, 1999). This suggestion is put forward as a result of many studies showing that while women often complain of reproductive problems, they are rarely found to have any (Hawkes et al., 1999; Koenig et al., 1998; Trollope-Kumar, 1999). Nichter (1981), studying women in India, labeled such complaints as "idioms of distress," noting that reporting reproductive health problems was an acceptable way for women to vent their frustrations with life in general. He also found that providers associated white discharge with psychosocial problems, especially among Muslim women and Hindu Brahmin women, suggesting that complaints provide a reason to leave the home for some who otherwise would have little opportunity to go out or to relate to others outside the community.

Other socioeconomic and personal variables appear to play a part in and affect the experience and toleration of side effects. Many studies note that women of lower parity and age are more likely to discontinue use of IUDs, as are women with low education and those who have tried other contraceptive methods (Petta et al., 1994; Rajeshwari & Haselkar, 1996; Rivera et al., 1999; Steele & Diamond, 1999), although education does not always emerge as a key determinant (Ali & Cleland, 1999). Reproductive intention is also noted to be an important factor in contraceptive continuation; women who want no more children, for example, may be more likely to tolerate side effects than are those for whom mistimed pregnancy is not such an issue (Salhan & Tripathi, 2004). In a study in India, women who wanted to space births were twice as likely to stop using the IUD at the end of the first year as were those who wanted to limit childbearing (Bhat & Halli,

1998). Women of Muslim faith appear also to be more likely to discontinue use than are women of other religions (Bhat & Halli, 1998; Rivera et al., 1999), although in some Muslim countries, such as Turkey and Iran, discontinuation rates are fairly low (Jenabi et al., 2006; Tugrul et al., 2005).

The role of men is also thought to be important in IUD discontinuation. Many studies show that husbands can be key opponents of contraception and that without their consent to the method, discontinuation can ensue. Certainly, discharge (blood or other) has serious social consequences in many conservative and traditional rural societies (Ross et al., 2002). Continuous discharge affects social interaction generally (affecting ability to pray, fast, participate in festivals, cook, bathe, or eat certain foods), but it also affects marital relations as women cannot have sexual intercourse or perform routine household tasks. Women in some traditional societies are regarded as unclean while menstruating, and while minimal bleeding might be seen as youthful, cleansing, and representative of fertility, perceived or real excessive bleeding is a cause for grave concern. So while religious prohibitions may have evolved to protect and ease the burden of menstruating women, they can have the effect of ostracizing women from their community (Best, 1998). In an anthropological study of reproductive health in Bangladesh, women describe such menstrual problems as leading them to becoming "useless objects," which is an extremely grave matter, since women fear desertion or divorce more than death (Ross et al., 2002).

Quality of care by health workers has also been shown to affect both IUD acceptance and discontinuation (Ali, 2001; Bhat & Halli 1998; Koenig et al., 1997), although not all studies have shown this association, and some have shown only a moderate association (Huezo & Malhotra, 1993; Mensch et al., 1996). In the case of a study in India (Bhat & Halli, 1998), however, service delivery effects were noted as "trivial" in comparison to the overriding influence of side effects and motivational variables. In that study, the authors described IUD users as "poorly motivated young women who discontinue the method at the slightest feeling of discomfort or abnormality." The measurement of quality of care varies between studies: In many, researchers were able only to examine the presence of certain quality variables, without understanding the dimensions of those variables. For example, some studies looked at whether counseling was done without knowing the quality of that counseling. Also, researchers have *a priori* ideas about what constitutes quality, ideas that may not reflect clients' perspectives. For example, researchers may believe that providing information on side effects at the time of IUD insertion is a good indicator of quality, while clients may feel that the provision of medications reflects a higher quality service. WHO (1993) emphasizes that programs that combine overzealous promotion of a method with poor follow-up care lead to high levels of dissatisfaction and of discontinuation. In a study in South India, women who reported receiving information on side effects were more likely to continue IUD use than women who did not report receiving such information (Prabhavathi & Sheshadri, 1988); in a study in Africa, women who thought they had not received such counseling were also more likely to discontinue use (Cotton et al., 1992).

A study from rural Bangladesh that assessed clients' perceptions of the care offered by family welfare assistants (FWAs) (such as time spent with clients, responsiveness, privacy, helpfulness, sympathy, and information sharing) demonstrated that perceived high quality of care was associated with a 72% greater likelihood of continued use of any method of contraception (Koenig et al., 1997). Bhat and Halli (1998) found that attention to clients' needs at the time of IUD insertion and in follow-up services had some influence on continuation, but other studies have found that clients often complain about how poorly providers deal with their side effects even when follow-up rates appear to be high (Schaap, 1993). In another Indian study, researchers found that it was possible to improve continuation rates for the IUD by three to four times, by improving the quality of care both at the time of insertion and during follow-up (ICMR, 1994).

Providers' attitudes toward bleeding problems (and thus willingness to remove IUDs) may also affect continuation rates (Sekadde-Kigondu et al., 1996; Zhang, 1993): Studies have shown that poor quality of care and in some cases reluctance by providers to remove IUDs upon request may ironically limit discontinuation rates (Schuler & Hossain, 1998). The quality of preinsertion screening may also play a part in discontinuation of the IUD, as studies have shown that dysmenorrhea before insertion is a risk factor for dysmenorrhea (and expulsion) after insertion (Zhang, 1993). The IUD provider's level of experience has also been found to be associated with continuation. In a study in India, the rate of removal for bleeding or pain was lower when the IUD was inserted by more experienced practitioners (Bhatnagar et al., 1988), echoing results of studies in developed countries (Theiry et al., 1985). Some studies have associated high discontinuation with IUD insertion in "camp" settings (Hieu et al., 1995), presumably associated with lack of time for thorough counseling and possibly related to an absence of routine follow-up care and side effects counseling.

The ACQUIRE Project in Bangladesh

In Bangladesh, ACQUIRE Project activities started in October 2003 and are directly implemented by EngenderHealth and its partners in collaboration with the DGFP, the Directorate General of Health Services, and three selected private hospitals. The overall focus of ACQUIRE activities in Bangladesh has been to work with the government program at the national, district, upazila, and union levels to strengthen LAPM services throughout the country. The approach has been to strengthen the existing government systems and capacity to improve program management and quality of services, ensure logistic supplies, increase demand for methods through behavior change communication activities, and improve interpersonal communication by the fieldworkers.

A baseline survey of LAPM services was conducted in 2004 in four districts, and the data indicated that facilities were poorly equipped to provide quality services (Alam et al., 2006). The majority of service providers had not received skills-based training on clinical family planning method provision, counseling, infection prevention, and complications management in many years. As a consequence, provider compliance on all clinical aspects was less than ideal. Providers often deviated from the recommended steps for clinical procedures. Additionally, providers failed to convey information on method use, including the warning signs that should trigger a return visit.

The findings of the baseline survey and two subsequent Performance Improvement Needs Assessment exercises were used for discussion with the DGFP to determine the direction of the program. The project's response to the need was an integrated approach aiming interventions at both the supply and demand sides. Key elements of the project's response were to:

- Strengthen the provision of services in "hard-to-reach" and low-performing areas
- Focus attention on IUD service delivery and on no-scalpel vasectomy
- Conduct refresher training on the management of complications, on IUD service delivery, on infection prevention, and on counseling, by setting up decentralized, skills-based training programs
- Strengthen facilitative supervision
- Revise the eligibility criteria for method use and national family planning service delivery guidelines
- Work extensively with the community and with religious leaders

According to the national management information system (MIS) of DGFP, acceptance of all clinical methods (sterilization, the IUD, and the implant) has continued to rise since

EngenderHealth started working with DGFP in 2003. By increasing the availability of LAPMs, the ACQUIRE Project contributed to expanding the range of family planning options, thereby increasing contraceptive prevalence; however, IUD use currently remains low (0.6%) compared with use of other modern contraceptive methods. The Bangladesh Demographic and Health Survey (NIPORT, Mitra and Associates, & ORC Macro, 2005) estimated IUD discontinuation to be 35.4% within the first 12 months of insertion. If ACQUIRE is to help work toward the DGFP goals, it is important to understand programmatic factors that may be contributing to IUD discontinuation.

Study Objectives

The overall objectives of the study were to quantify the outcomes of IUD use 12 months after insertion and to examine factors associated with IUD discontinuation in six districts of Bangladesh. Specific objectives were to examine:

- The sociodemographic characteristics of IUD acceptors and discontinuers
- The outcome of IUD use among IUD acceptors within the first 12 months and the reasons given for discontinuation
- Common side effects, how they were experienced by both continuers and discontinuers, and factors associated with experience with and tolerance of those side effects
- Key determinants of discontinuation
- Preinsertion and postinsertion health-sector support for IUD clients

Study Methodology

Study Area

The study was implemented in six of the 64 districts of Bangladesh. These six districts are located in different parts of the county: Dinajpur and Chapai Nawabgong are situated in the northern part of the country; Rajbari and Chandpur are situated in the middle part of the country; and Noakhali and Barguna are situated in the southern part of the country. The population of these six districts is about 10.5 million, and the average household size is about five persons. About 88% of the total population is Muslim, the rest being Hindu, Buddhist, and Christian. The sociocultural and topographical characteristics of these six districts, however, are quite diverse (see Appendix 1 for descriptions and map of study areas).

Study Design, Study Populations, and Data Collection Tools

The study collected three types of data. Sample sizes and sampling procedures for all three types of respondents and descriptions of the types of service providers can be found in Appendix 2.

1. ***IUD acceptors:*** A retrospective cross-sectional design with a multistage cluster sampling approach was employed to identify a sample of 375 respondents who had accepted an IUD in March 2006. These women were then interviewed in March 2007, exactly one year after insertion, using a closed-ended, structured interview. Successful interviews were conducted with 330 of the 375 selected acceptors. The remaining were nonreponses for various reasons. Trained female enumerators conducted one-on-one interviews, which took place at the client's residence or at a suitable place in the community. The principal aim of this part of the study was to quantify the outcomes of IUD use and qualify the factors contributing to IUD discontinuation.
2. ***IUD discontinuers.*** In the group of acceptors, 156 discontinued IUD use. Of these discontinuers, a smaller sample of 30 women who had discontinued because of side effects was interviewed, using an in-depth interview (IDI) approach. A semi-structured questionnaire consisting of both open-ended and closed-ended questions was used to conduct IDIs with the IUD discontinuers. Some of the more skilled interviewers and some ACQUIRE staff managed these 30 interviews; most were tape-recorded. Questions revolved around the experience of having the side effect (e.g., how excessive bleeding manifested itself and what this meant), the steps taken to try to resolve the issue, and decision-making processes around removal of the IUD.
3. ***Provider interviews.*** The study also included provider interviews to determine how providers perceived IUD-related problems and how they managed them. Both clinical service providers such as the family welfare visitors (FWVs)/nongovernmental organization (NGO) paramedics and community-level fieldworkers such as the FWA were interviewed. We used a semi-structured questionnaire consisting of both open-ended and closed-ended questions to conduct interviews. A total of 60 service providers were interviewed in private settings at the facilities and in the communities.

All instruments were translated into Bangla,[1] and interviews were conducted in Bangla after field testing. All data were entered into the Statistical Package for the Social Sciences (SPSS) Version 12.1. Univariate and multiple regression analyses were conducted to assess the possible determinants of experience of side effects and discontinuation at 12 months.

[1] English and Bangla versions of all interview tools are available from MEAlam@engenderhealth.org.

Survey Team Composition and Training

A team made up of government family planning workers (FWAs), ACQUIRE staff, and hired female enumerators (24) and male supervisors (six) was involved in data collection activities. The enumerators were recruited from a panel of qualified and experienced interviewers and were supervised by ACQUIRE staff. They accompanied the survey team members, checked the quality of gathered data, and liaised with government counterparts. The FWAs assisted in locating respondents and in helping with securing informed consent. Enumerators were trained for four days, which included a day-long questionnaire pretest/field practice exercise.

Field Work

Field work took place in March 2007. Six survey teams were formed, with each team consisting of one supervisor and four enumerators. To ensure the consent and confidentiality of the selected acceptors, before an interviewer visited a household, an FWA approached the selected acceptor as if for a routine visit. The FWA asked the acceptor if she was willing to be interviewed—at another time or location, if necessary. In some cases, an FWA or interviewer had to visit a client's resident more than once to complete all sections of the questionnaire and had to meet the client away from her home (and family).

After the completion of the acceptor survey, IDIs were conducted with a small sample of 30 women who had discontinued the IUD due to side effects or complications. The IDI was conducted by experienced enumerators, including some ACQUIRE staff. If permission was granted, the IDIs were also tape-recorded, and the interviews were later transcribed.

Survey Management

The exercise was managed and overseen directly in Bangladesh by Mr. Mahboob-E-Alam, Senior Program Officer (Monitoring & Evaluation); Dr. Mizanur Rahman, Program Specialist (Technical); and Dr. Fatema Shabnam, Program Officer (LAPM). Mr. Alam designed, implemented, and provided overall management and supervision for this study. Dr. Shabnam and Dr. Rahman looked after clinical and technical aspects. Ms. Janet Bradley, Senior Program Associate, ACQUIRE Project/New York, provided technical assistance in reviewing study methodology and data collection tools, and played a major role in data analysis and reporting.

A local advisory panel made up of the following well-known experts working in this field was formed to oversee the study:

- Dr. Abbas Bhuiya, Senior Scientist & Head, Social Behavior Science Unit, International Centre for Diarrhoeal Disease Research, Bangladesh
- Dr. Kanta Jamil, Program Coordinator for Research Population, Health and Nutrition USAID Mission to Bangladesh
- Dr. Ahmed Al-Sabbir, Director of Research, National Institute of Population Research and Training, Bangladesh
- Dr. M. Mazharul Islam, Chairmen, Department of Statistics, University of Dhaka

Study findings were shared with the panel members, and their advice and suggestions were incorporated into the final report.

Confidentiality and the Informed Consent Process

Informed consent procedures followed EngenderHealth's Standard Operating Procedures required for this type of exercise. These included reading an informed consent statement to potential participants prior to the start of an interview and recording oral consent by all participants at the start of the interview.

The study proposal was approved by Ethical Review Committee of the Bangladesh Medical Research Council.

Results

IUD Acceptors

Respondents' characteristics

Of the 375 sample acceptors, 45 were not interviewed: Four acceptors refused to be interviewed, nine were not at home during the interview period, 10 had moved to other districts or towns, two interviews were incomplete and rejected for analysis, and 20 acceptors could not be located by the enumerators due to an incomplete or wrong address. In total, 330 interviews were completed.

Acceptors came from six districts, with 30% coming from the largest district, Noakhali (Table 1). Most respondents (94%) lived in rural areas. Of the acceptors, 78% had received their IUDs at a rural facility (a Health and Family Welfare Center, or HFWC) and the rest at an NGO clinic or an urban facility (a Maternal and Child Welfare Center, or MCWC). Ninety-four percent of the women said that their IUD had been inserted by an FWV.

Table 1. Percentage distribution of respondents, by district of residence

District	(n=330)	
	N	%
Rajbari	35	10.6
Chandpur	57	17.3
Dinajpur	49	14.8
Chapai Nawabgonj	43	13.0
Noakhali	98	29.7
Barguna	48	14.5

The mean age of respondents was 29, with 60% under the age of 30, 20% between the ages of 31 and 35, and 20% older than 35. Almost all (98.5%) were married at the time of the survey. All were parous, with 21% having one child, 34% having two children, 24% having three children, and 21% having four or more children (mean 2.8).[2] Almost two-thirds of respondents (63.3%) reported that they did not want any more children. Of those 100 women who said they did want another child, 89% wanted one more and 11% wanted two more children, and most wanted to wait before their next pregnancy. In total, 83% of users wanted to either end childbearing or wait for more than three years (Table 2) and appeared to be good IUD candidates.

Table 2. Percentage distribution of IUD acceptors, by reproductive intentions

Reproductive intentions	(n=330)	
	N	%
Do not want more children	209	63.3
Do not know if want more children or husband/God decides	21	6.3
Want more children but do not want to wait (or don't know)	22	6.7
Want to space 2 years or less	13	3.9
Want to space 3–5 years	43	13.0
Want to space more than 5 years	22	6.7

[2] Note that in Bangladesh, women must have at least one child to qualify for an IUD.

The majority of respondents described themselves as homemakers (88.5%); their husbands were mostly farmers (24.2%), businessmen (26.1%), laborers (12.4%), salaried workers (14.5%), or rickshaw drivers/boatmen (9.7%). The majority (73.3%) reported monthly household expenditures of 5000 Taka (US $74) or less, and 29% reported having monthly expenditures of 3,000 Taka or less (US $44). A significant difference existed between the mean incomes of rural and urban respondents, at 4,583 Taka and 9,421 Taka, respectively ($p < 0.00$). Fifty-six percent of respondents reported that they lived in households of five or fewer people, while 38.5% lived in households of 6–10 people.

The majority of women interviewed had low educational levels: Twenty-four percent reported that they had no schooling, and 34.8% had only 1–5 years of school. As many as 40% described themselves as unable to read or write a simple letter and 75% said they never read a newspaper. Furthermore, 67.6% reported that they never listen to radio; 45.8% said they never watch TV.

Contraceptive practice

Almost all IUD acceptors (88.5%) had some previous experience using contraceptives before insertion of the index IUD, although rates of early discontinuation were quite high (Table 3). One in five acceptors had previously used an IUD: Fifty-five of these former IUD users had discontinued within one year, although 15% had used IUDs for more than five years. Almost 70% of previous users had tried more than one contraceptive method.

Table 3. Percentage of respondents who had previously used a selected family planning method, and percentage who had discontinued use within one year

Method	% who used	% who discontinued within 1 year
Pill	79	39
Injectable	40	58
Condom	15	63
IUD	20	55

Information about the IUD

Respondents had heard about IUDs from various sources, all by word of mouth, but by far the most important sources were FWVs (45.2%) and FWAs (55.2%). Friends and relatives were also an important source, with 52.1% of respondents saying they had heard about IUDs from this source. Only six women reported hearing about IUDs from the media. Almost half of the respondents said that they had heard about the IUD at a health facility, and about the same number had obtained information in the community or at their own homes. Before acceptors went for insertion, they reported having had several contacts and discussions with health care providers: 32.7% one discussion, 23.9% two contacts, and 35.2% three contacts.

Respondents were generally quite well-informed about the long-acting nature of the method, with 57.9% saying it was effective for 10 years, 28.2% saying it was effective for 5–9 years, and only 11% saying they did not know how long it was effective for. Just over half of the acceptors (57.0%) recalled being told by health providers that they should return to the clinic for a routine check-up, and slightly more than half of these women did go back (in total, one-third of acceptors reported that they returned to the clinic for a check-up). Most of those who did not return reported that they did not feel it was necessary (41.6%) or that they did not know they were supposed to return (37.3%).

As many as 70% of acceptors recalled being told to check the IUD strings. One-fifth of acceptors reported that they never checked the strings, one-third said they did so after every menses or once a month, and 13% said they did so more than once a month. Of those who said they did check strings, 61% said that they felt uncomfortable doing so. In total, 78% of women either did not check strings or did not like doing it.

Spousal knowledge, approval, and decision making

About three-quarters of clients reported discussing the IUD with their husbands before insertion; of these, most said their husband approved of their IUD use. In total, 237 women (71.8%) used the IUD with the knowledge and approval of their husband, and 93 (28.2%) had it inserted without their husband's knowledge or consent (Table 4). Most acceptors reported that the final decision to have an IUD was made by the client herself (58.5%) or by the client with her husband (24.2%); however, 10% reported that the service provider made the decision.

Table 4. Percentage distribution of IUD acceptors, by level of spousal knowledge and consent for an IUD insertion

Knowledge and consent	(n = 330)	
	N	%
Discussed and husband approved	237	71.8
Discussed and husband did not approve	15	4.5
Did not discuss with husband	78	23.6

When women were asked what made them choose the IUD, high on their list of reasons was the attractiveness of having a long-acting contraceptive, and around half of women also noted that the method involved no daily hassle or had fewer side effects than other methods (Table 5). Four of the women interviewed in the acceptor survey reported that the IUD was inserted without their knowledge.[3]

Table 5. Percentage of IUD acceptors reporting various reasons for choosing an IUD*

Reason	(n=330)	
	N	%
Long-acting method	255	77.3
Highly effective method	69	20.9
Fewer side effects	155	46.9
No need to remember daily	186	56.4
Like that it is not hormonal	32	9.7
Was inserted without knowledge	4	1.2
Was encouraged by others	8	2.4
Other	22	6.6

*Respondents were able to give multiple responses.

[3] Actually, three other women who participated in the IDIs mentioned that they were reluctant to accept the IUD. In two cases, the IUD was provided after menstrual regulation, and they reported being told later that they had been given an IUD to protect them from unwanted pregnancy. One woman was counseled about the use of an IUD, but she was not ready to accept it on the same day. She wanted to accept the IUD later, but the service provider inserted the IUD during a physical examination without her knowledge. These three cases are being investigated by ACQUIRE Project staff.

Experiencing bodily changes

Four of every five acceptors (79.1%) reported that they were aware before insertion that they might expect some bodily changes as a result of the IUD. Three-quarters of women reported that the service provider had warned them of possible changes or side effects (Table 6).

Table 6. Percentage of IUD acceptors who recalled a specific side effect being mentioned by providers*

Side effects	(n=330)	
	N	%
Heavy bleeding	162	65.9
Irregular or abnormal bleeding	38	15.4
Abdominal pain	142	57.7
Pain during intercourse	35	14.2
Vaginal discharge	39	15.9
Feeling bad/fever	24	9.8
Missing thread	51	20.7
Missing period	16	6.5
Other	17	6.9

*Respondents were able to give multiple responses.

Since previous studies had shown that menstrual changes were a key reason for IUD removal, more details about the nature of menstrual change and clients' reaction to it were explored. As many as 69% of acceptors remarked that their periods changed after the IUD was inserted—mostly that blood flow became heavier and less regular (Table 7).

Table 7. Among IUD acceptors who experienced menstrual changes after IUD insertion (n=228), percentage reporting various types of changes

Type of menstrual change	N	%
Heavier periods	174	52.7
Lighter periods	14	4.2
Less regular	80	24.2
More regular	19	5.8
More painful	44	13.3
Less painful	5	1.5

Women were also asked what they felt about these menstrual changes. Although some seemed unconcerned, almost one-third of respondents mentioned that the changes caused concern, were more than expected, and caused them either to seek treatment or to have the IUD removed (Table 8).

Preinsertion problems

Because providers are meant to screen out potential IUD clients with certain preexisting conditions, we examined how many women actually had any of these problems *before* having the IUD inserted. One-third of IUD acceptors reported having at least one of these health problems before insertion. One in five had a recent history of what they described as abnormal vaginal discharge, and many mentioned menstrual problems or abdominal pain (Table 9).

Table 8. Among IUD acceptors experiencing menstrual changes, percentage reporting various responses to these changes*

Changes and thoughts	(n=228)	
	N	%
Positive/neutral total respondents	***86***	***37.7***
Not a cause for concern	42	18.4
I had been warned I might see some changes	34	14.9
Changes were milder than expected	2	0.8
Mild annoyance/inconvenience	14	6.1
Changes were what I expected	15	6.6
Negative total respondents	***162***	***71.0***
Changes were greater than expected	62	27.2
Concern about impact on health	70	30.7
Changes caused me to seek treatment	72	31.6
Changes were why I stopped using the IUD	72	31.6
Other	2	0.9

*Respondents were able to give multiple responses.

Table 9. Percentage of IUD acceptors reporting experiencing selected problems within three months prior to insertion*

Problem	(n=330)	
	N	%
Menstrual problems	48	14.5
Abnormal vaginal discharge	61	18.5
Abdominal pain	42	12.7
Pain during sexual intercourse	12	3.6
Bleeding during sexual intercourse	3	0.9
Vulval itching	21	6.4
Other	12	3.6
Total problems mentioned	199	
None of the above	212	64.2

*Respondents were able to give multiple responses.

Most of those who experienced a problem *before* IUD insertion also noted experiencing a problem *after* the IUD was inserted. For example, 48 women reported that they had menstrual problems within the three months prior to the IUD insertion. Of these women, 42 (87.5%) said their periods changed after insertion, and 31 of these (64.6%) reported that they experienced much heavier bleeding after insertion. (Another way of looking at this is that 18% of all women experiencing heavy bleeding ascribed to the IUD actually reported having menstrual problems *before* insertion.) Similarly, almost half of the 61 acceptors who reported having abnormal vaginal discharge before insertion also reported abnormal vaginal discharge after insertion, and 69% of the 42 women reporting abdominal pain before insertion also reported it afterwards. Despite this, most women ascribed their postinsertion problem to the IUD itself.

Blaming the IUD

In total, 78% of the women (257) said that they experienced a problem that they thought was caused by the IUD. Almost half of all women (46.4%) described their menstrual changes and bleeding as excessive; 20.9% said they experienced abnormal vaginal discharge; 42.1% blamed the IUD for abdominal pain; 19.4% said they experienced painful intercourse; and 21.9% ascribed general

weakness to the IUD. Interviewers also asked all acceptors if their husband complained about the strings attached to the IUDs, and 27.3% of women reported that this was an issue.[4]

Figure 1. Percentage distribution of IUD acceptors reporting various symptoms, by timing of onset of symptoms after IUD insertion

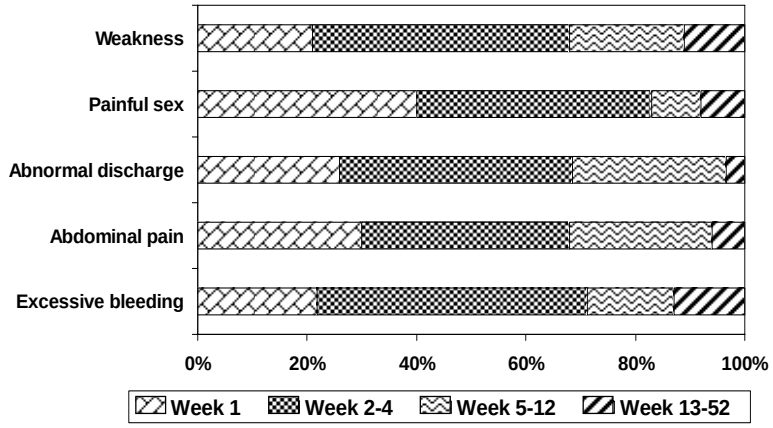


Figure 1 shows when the IUD acceptors noted that their main problems began (though other data indicate that many of these women also reported these problems prior to insertion of the IUD). Apart from abdominal pain, which in some cases appears to have started more than a month after insertion, most problems manifested themselves either in the first week or in the first month after insertion. Of those who complained about painful intercourse, for example, 83% reported this to be a problem during the very first month after insertion. It is clear that the short time span between insertion and the start of the problem caused women to assume some cause-and-effect relationship.

Duration of side effects

We looked at how long women experienced side effects and whether the clients were still using the IUD after 12 months (Table 10 and Figure 2). In cases where women continued to use the IUD at 12 months and beyond, we assumed that the side effects had run their natural course and ended after the duration stated. For those who discontinued use, we assumed that the side effects ended with the removal of the IUD.[5]

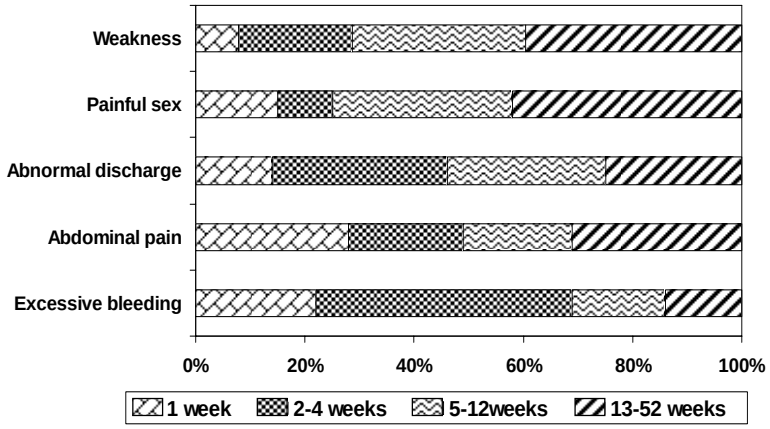
Table 10. Percentage of IUD acceptors reporting key side effects, by whether they continued or discontinued IUD use

Problem lasted	Excessive bleeding (n=153)				Abnormal vaginal discharge (n=69)				Abdominal pain (n=138)				Painful sex (n=65)				Weakness (n=70)			
	Cont.		Disc.		Cont.		Disc.		Cont.		Disc.		Cont.		Disc.		Cont.		Disc.	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
1 week	10	21.3	23	21.6	1	2.4	4	14.3	14	26.4	24	28.2	2	11.8	7	14.6	1	3.1	3	7.9
2–4 weeks	11	23.4	50	47.2	9	22.0	9	32.1	8	15.1	18	21.2	2	11.8	5	10.4	3	9.4	8	21.1
1–3 months	11	23.4	18	17.0	7	17.1	8	28.6	17	32.1	17	20.0	4	23.5	16	33.3	5	15.6	12	31.6
>3 months	15	31.9	15	14.2	24	58.5	7	25.0	14	26.4	26	30.6	9	52.9	20	41.7	23	71.9	15	39.5
Total	**47**		**106**		**41**		**28**		**53**		**85**		**17**		**48**		**32**		**38**	

[4] Note that the question here was: "What problems/side effects/complications did you experience that you think were caused by the IUD?"

[5] We think this is a fair assumption, given the high rate of removal due to side effects.

Figure 2. Percentage distribution of IUD acceptors reporting various symptoms, by duration of symptoms



Of the 153 women who reported excessive bleeding, 106 (69.3%) discontinued use of the IUD, while 47 (30.7%) continued use. Among the discontinuers who had this problem, 68.8% suffered for one month or less, while only 14.2% endured it for more than three months (after which they presumably had the IUD removed). Of those who had excessive bleeding yet were still using the IUD after 12 months, 44.7% had bleeding for a month or less, 23.4% had it for 1–3 months, and 31.9% endured it for more than three months.

Women experiencing abnormal discharge tolerated this problem for much longer. Of the 69 women who had this problem, 41 (58.5%) continued to use the IUD, while 28 (40.6%) discontinued use. Of those who continued, the majority (58.5%) endured it for more than three months. Of those who did not continue IUD use, 46.4% endured this problem for up to one month, 28.6% endured it for 1–3 months, and 25% for more than three months.

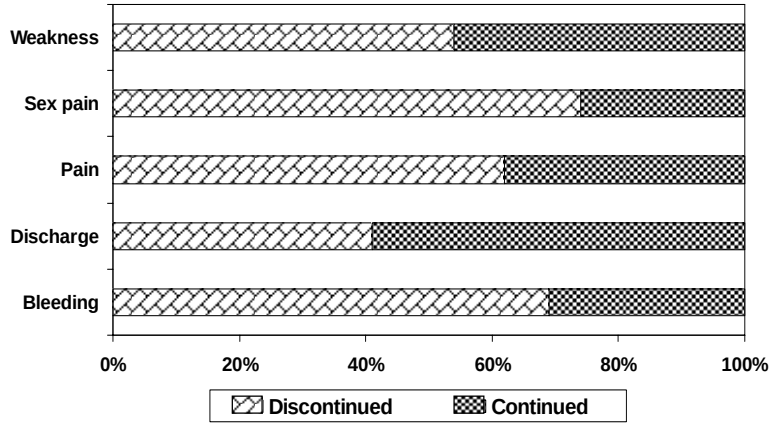
Some women who suffered from abdominal pain only experienced it for one month or less and then it went away (41.5% of 12-month continuers experiencing pain), or they tolerated it for longer periods (26.4% of 12-month continuers with the problem tolerated it for more than three months). Of those with pain who had their IUD removed, 49.4% had pain for less than one month, while 20% had it for 1–3 months, and 30.6% had it for more than three months. Although a strong correlation exists between excessive bleeding and pain, it seems likely that removal was more a result of the bleeding than the pain.

Pain during sex was tolerated for much longer than other key side effects. In this group of acceptors, 65 reported having pain during sex, and 48 of these women did finally have the IUD removed (73.8% of sufferers). Of those who discontinued the IUD, 41.7% endured the problem for more than three months, while 52.9% of continuers also tolerated it for this long. About half of the women who reported feeling generally weak and tired also endured symptoms for longer than three months, although the decision to remove the IUD was probably more likely associated with other symptoms. The majority of those who continued IUD use usually did not get relief within the first three months, as 71.9% said the problem lasted longer than this. Those who removed the IUD also experienced the problem longer than other side effects, with 31.6% saying they had the problem for 1–3 months and 39.5% saying it lasted for more than three months.

Overall, women seem to be in two groups: those who can tolerate side effects, and those who cannot. There seems to be little difference in the length of time they experience the symptoms, which then go away either on their own or because the IUD is removed (or, in fact, continue for more than three months but do not lead to IUD removal). The study clearly shows that women tolerate painful sex, vaginal discharge, and general weakness longer than bleeding and/or abdominal pain before removing the IUD. Moreover, it appears that the majority of discontinuers who have a

bleeding problem do not tolerate it for more than one month. This would seem to be a critical time for ensuring good follow-up and reassurance that bleeding problems will likely not continue, as almost half of the continuers had bleeding that ended after the first month. In general, women who suffered from bleeding problems and pain during sex were more likely to remove their IUDs than were women with other complaints (Figure 3).

Figure 3. Percentage distribution of IUD acceptors reporting various symptoms, by whether they discontinued IUD use



Respondents were asked what they did about the side effects they experienced. Most took action, either by seeing a provider (39%), by seeing a local healer or pharmacist (14%), or by taking some medicine (55%). One-quarter responded that they did nothing or waited for the problem to go away. Almost 30% of those experiencing side effects said that they had the IUD removed as a result.[6]

Factors associated with experience of side effects

As was shown above, 257 of the 330 acceptors (78%) reported experiencing side effects that they ascribed to the use of the IUD. We looked into what might be associated with their experience of (real or perceived) side effects that were ascribed to the use of the IUD. Variables included geography, demographic profile, family planning use and behaviors, decision making about the IUD, health-sector variables (reported provider counseling), and preinsertion problems.

Three factors appeared to be most closely linked with the experience of side effects (Tables 11a, 11b, and 11c).

- **Geography**: Women who lived in urban areas were slightly more likely to complain about side effects than were rural women; however, those women who had their IUD inserted in government facilities were more than 1.5 times as likely to suffer side effects as were those having the IUD inserted at an NGO facility (Table 11a). Women in some districts were much more likely to report side effects than others. For example, women in Barguna and Dinajapur were almost five times more likely to report side effects than were women in Rajbari or Chandapur.

[6] Note that the number of women who said that side effects caused them to remove the IUD (66) is smaller than the number who actually removed and cited side effects as the reason (137)—see Table 14, p. 25. It may be that women did not want to admit at this stage of the interview that they had the IUD removed, especially as so many removed it themselves. Or it may be that when asked to cite a reason for removal, side effects most easily came to mind.

Table 11a. Factors associated with side effects: geography

Variable	Definition	Total (n=330)	Percentage of acceptors with any side effect (n=257)	Odds ratio (95% confidence intervals)	*p* value
District	Barguna	48	42 (87.5%)	4.7 (3.5–5.7)	<.01
	Chandpur	57	38 (66.7%)	1.3 (0.5–1.2)	ns
	Dinajpur	49	43 (87.8%)	4.8 (3.7–5.9)	<.01
	Chapai Nawabgonj	43	34 (79.1%)	2.5 (1.5–3.5)	ns
	Noakhali	98	79 (81.4%)	2.9 (2.1–3.8)	.01
	Rajbari (ref)	35	21 (60.0%)	1.0	
Residence	Rural (ref)	311	242 (78.1%)	1.00	
	Urban	19	15 (78.9%)	1.05 (0.3–3.3)	<.01
Place of insertion	NGO clinic (ref)	28	18 (64.3%)	1.0	
	Government facility	302	239 (79.4%)	1.7 (1.0–2.9)	ns

- **Preinsertion problems**: Women who reported having reproductive health problems in the three months prior to insertion were 3.5 times more likely to report any postinsertion problems than those without preexisting conditions (Table 11b). Those women reporting preinsertion abdominal pains were 6.5 times more likely than those without this condition to report postinsertion side effects and those with preinsertion discharge problems were 3.7 times as likely to report side effects after insertion as those without this problem. All other preinsertion conditions were also good predictors of postinsertion problems.

Table 11b. Factors associated with side effects: preinsertion problems

Variable	Definition	Total (n=330)	Percentage of acceptors with any side effect (n=257)	Odds ratio (95% confidence intervals)	*p* value
Had preinsertion problems	Yes, at least one	119	108 (91.5%)	3.5 (1.8–6.9)	<.01
	No (ref)	211	149 (70.6%)	1.0	
Had preinsertion menstrual problems	Yes	48	41 (85.4%)	1.8 (0.7–4.1)	ns
	No (ref)	282	216 (76.9%)	1.0	
Had preinsertion abnormal discharge	Yes	61	56 (91.8%)	3.7 (1.4– 9.7)	<.01
	No (ref)	269	201 (75.0%)	1.0	
Had preinsertion abdominal pain	Yes	42	40 (95.2%)	6.5 (1.5–27.3)	<.01
	No (ref)	288	217 (75.6%)	1.0	
Had preinsertion painful intercourse	Yes	12	12 (100.0%)	1.3 (1.2–1.4)	ns
	No (ref)	318	245 (77.3%)	1.0	
Had preinsertion vulval itching	Yes	21	21 (100%)	1.3 (1.2–1.4)	.01
	No (ref)	309	236 (76.6%)	1.0	

- **Decision making and spousal involvement**: Those women who reported that they had not discussed using an IUD with their husbands (or they had discussed and he had not approved) were 2.6 times more likely to suffer side effects than those who had consulted their spouse and he had agreed to the IUD (Table 11c, page 20). Similarly, side effects were much lower among women for whom the final decision about the IUD was made jointly with their husbands. Those women who did not report a joint decision were 3.5 times more likely to report suffering side effects. Those women who reported that the service provider made the decision to insert an IUD were 5.3 times more likely to report side effects than those women involved in joint decision making.

Table 11c. Factors associated with side effects: spousal issues

Variable	Definition	Total (n = 330)	Percentage of acceptors with any side effect (n=257)	Odds ratio (95% confidence intervals)	*p* value
Discussed with husband	Yes and approved (ref)	237	175 (74.2%)	1.0	
	Yes and disapproved	15	14 (93.3%)	4.8 (2.8–6.9)	ns
	No	78	68 (87.2%)	2.4 (1.6–3.1)	.02
Who made the final decision to insert IUD?	Couple (ref)	80	48 (60.0%)	1.0	
	Other (any below)	250	209 (83.9%)	3.5 (2.0–6.1)	<.01
	Woman	193	161 (83.4%)	1.6 (0.5–3.7)	ns
	Husband	15	12 (80.0%)	2.0 (0.4–4.4)	ns
	Service provider	33	28 (87.5%)	5.3 (3.1–7.5)	<.01

Other factors were also associated with the reporting of side effects, and although trends were observed, these were not statistically significant (Table 11d).

- **Demographic factors:** Women in the 26-30 age bracket were more likely than women in other age-groups to report side effects, as were women with more than two children. Poorer women, women with low education/illiteracy, and women who had previously experienced an unwanted pregnancy were also more likely to report experiencing side effects from the IUD.
- **Family planning experiences:** Women who had previously switched family planning methods more than once were slightly more likely to report side effects, and those who had previously used and discontinued IUDs within 12 months of insertion were more than twice as likely to report side effects with this IUD, although the numbers are small and therefore results are not statistically significant.
- **Health sector variables:** Gaining information from health workers did not appear to influence experience of side effects; in fact, if anything, those women who reported getting information about the IUD from FWAs and FWVs and those who said the health worker advised them about side effects, about when to return, and about other factors were slightly more likely to report having side effects.

Table 11d. Other factors associated with experiencing side effects

Variable	Definition	Total (n=330)	Percentage of IUD acceptors with any side effect (n=257)	Odds ratio (95% confidence intervals)	*p* value
Demographic variables					
Age	<25 (ref)	91	71 (78.0%)	1.00	
	25–34	150	117 (78.0%)	1.02 (0.3–2.1)	ns
	>35	88	69 (78.4%)	1.02 (0.4–1.3)	ns
Parity	1–2 (ref)	181	138 (76.7%)	1.0	
	3–4	123	98 (79.7%)	1.2 (0.6–1.8)	ns
	>5	26	21 (80.8%)	1.3 (0.2–2.3)	ns
Want more children?	Yes (ref)	100	77 (77.8%)	1.0	
	No	209	164 (78.5%)	1.0 (0.5–1.6)	ns
	DK, not my decision	21	16 (76.2%)	0.9 (0.6–1.6)	ns
Schooling	Primary (0–4 yrs)	154	124 (80.5%)	1.8 (1.0–2.6)	ns
	Some secondary (5–9 yrs)	136	106 (77.9%)	1.6 (0.8–2.4)	ns
	Secondary+ (>10 yrs) (ref)	39	27 (69.2%)	1.0	
Literate (can read a simple letter)	Yes (ref)	200	151 (75.5%)	1.0	
	No	130	106 (82.2%)	1.5 (0.8–2.6)	ns

(cont.

Table 11d. Other factors associated with experiencing side effects *(cont.)*

Variable	Definition	Total (n=330)	Percentage of IUD acceptors with any side effect (n=257)	Odds ratio (95% confidence intervals)	*p* value
Household size	<5	186	148 (79.6%)	1.2 (0.7–2.0)	ns
	>6 (ref)	144	109 (75.7%)	1.0	
Ever experienced unintentional pregnancy	Yes	116	97 (83.6%)	1.7 (0.9–3.0)	ns
	No (ref)	214	160 (75.1%)	1.0	
Husband's occupation	White collar	134	105 (78.4%)	1.0 (0.9–1.1)	ns
	Other (ref)	195	152 (77.9%)	1.0	
Household expenditure	0–3,000 taka	96	77 (80.2%)	1.4 (0.7–2.1)	ns
	3,001–5,000 taka	146	115 (78.8%)	1.3 (0.6–1.9)	ns
	> 5,000 taka (ref)	88	65 (74.7%)	1.0	
Family planning (FP) use					
Previous FP user	Yes (ref)	292	227 (78.0%)	1.0	
	No	38	30 (78.9%)	1.1 (0.5–2.4)	ns
Switched methods	Once (ref)	106	79 (75.2%)	1.0	
	More than once	186	178 (79.5%)	1.3 (0.7–2.3)	ns
Early pill discontinuer	Yes (ref)	101	78 (78.0%)	1.0	
	No	158	125 (79.1%)	1.1 (0.6–1.9)	.04
Early condom discontinuer	Yes (ref)	32	23 (71.9%)	1.0	
	No	19	15 (78.9%)	1.5 (0.4–5.6)	ns
Early injectable and discontinuer	Yes (ref)	76	59 (77.6%)	1.0	
	No	56	47 (83.9%)	1.5 (0.6–3.7)	ns
Early IUD discontinuer	Yes	37	30 (81.1%)	2.2 (0.7–6.6)	ns
	No (ref)	30	20 (66.7%)	1.0	
FP health-seeking behavior					
Learned about IUD from FWA	Yes	182	144 (79.6%)	1.2 (0.7–2.0)	ns
	No (ref)	148	113 (76.4%)	1.0	
Learned about IUD from FWV	Yes	149	120 (81.1%)	1.4 (0.8–2.3)	ns
	No (ref)	181	137 (75.7%)	1.0	
Learned about IUD from friends	Yes	172	141 (82.0%)	1.6 (0.9–2.7)	ns
	No (ref)	157	116 (73.9%)	1.0	
Talked to a health provider before insertion	Yes (ref)	303	235 (77.8%)	1.0	
	No	27	21 (80.8%)	1.3 (0.5–3.4)	ns
Had contacts with health provider before insertion	No	27	22 (81.7%)	1.4 (0.3–1.6)	ns
	With 1	108	87 (80.6%)	1.3 (0.7–1.9)	ns
	With more than 1 (ref)	195	148 (76.3%)	1.0	
Counseling and knowledge					
Advised about changes	Yes	261	204 (78.5%)	1.1 (0.6–2.0)	ns
	No (ref)	69	53 (76.8%)	1.0	
Advised about side effects	Yes	246	192 (78.4%)	1.1 (0.6–1.9)	ns
	No or DK (ref)	84	65 (77.3%)	1.0	
Told when to return	Yes	188	151 (80.7%)	1.4 (0.8–2.4)	ns
	No or DK (ref)	142	106 (74.6%)	1.0	
Actually returned for a routine check	Yes	121	97 (80.8%)	1.3 (0.7–2.3)	ns
	No (ref)	209	160 (76.6%)	1.0	
Explained how to check strings	Yes (ref)	233	181 (77.7%)	1.0	
	No or DK	97	76 (79.1%)	1.1 (0.6–1.9)	ns
Know how long it is effective	Yes (ref)	191	146 (76.4%)	1.0	
	No	139	111 (80.4%)	1.3 (0.7–2.1)	ns

IUD discontinuation

Slightly more than half of the women (174, or 52.7%) were still using their IUD one year after insertion. Of these women, one-third planned to continue use between 1–5 years, 15% planned to continue use for 6–9 years, and 54% planned to continue use for 10 years or more. These were highly satisfied users, describing themselves as very satisfied (52.3%) or somewhat satisfied (39.7%). Fourteen women were not satisfied, due to continuing side effects or their husband's complaints.

One year after insertion, however, 47.3% of acceptors (156 women) had removed the IUD.[7] Eight percent of acceptors (17.3% of discontinuers) had the IUD removed within the first month of use, and 20.3% (or 42.9% of discontinuers) did so within the first three months. The mean length of use for year-one discontinuers was 2.7 months (Table 12).

Table 12. Percentage of all acceptors and of all discontinuers who used the IUD for specified lengths of time

Length of use	Number	Percentage of all acceptors (n=330)	Percentage of discontinuers (n=156)
Less than 1 month	27	8.2	17.3
1–3 months	40	12.1	25.6
4–6 months	31	9.4	19.9
6–12 months	58	17.6	37.2
Still using at 12 months	174	52.7	

Seeking advice about side effects

Table 13 shows information about whom the clients consulted before having the IUD removed. Although many women discussed IUD removal with their husband, the majority did not, and fewer than half reported that they had consulted with a health worker. One-quarter did not consult anyone, but merely made the decision to remove on their own or have the IUD removed. In fact, 42 women (26.9% of discontinuers) removed the IUD themselves; most others had the IUD removed by an FWV.

Table 13. Percentage of all IUD discontinuers, by person with whom they consulted before removal*

Person consulted	Percentage of all discontinuers (n=156)
Nobody	25.0
Husband	39.1
Mother-in-law	5.1
Friends/neighbors	12.1
Other IUD users	5.1
FWA	34.6
FWV	15.3
Other	5.1

* Respondents were able to give multiple responses.

Of the 30 discontinuers interviewed in more detail, 19 women (63.3%) reported that they discussed their problem with their husband, 16 (53.3%) discussed it with an FWV, 10 (33.3%) discussed it

[7] Of the 156 IUD early discontinuers, 116 (74.4%) had in fact switched to another method of family planning after discontinuing the IUD, and another 15 (9.6%) said they were about to start on a new method. Of the 116 switchers, 111 of them (88.3%) were still using the new method at the time of the interview and reported being happy with their choice. Almost three-quarters of switchers had started to use oral contraceptives, 12% had switched to injectables, and 11% had switched to condoms. Only one woman had opted for sterilization.

with an FWA, one discussed it with a private doctor, and six (20%) discussed it with other people, such as friends and relatives. Most consulted more than one person, and in general, this group of women reported making more effort to seek counsel than did the discontinuing women in the acceptor survey; however, 21 of the 30 women said they had made the decision to remove the IUD *before* seeing a health care provider.

Support from the husband varied. Of the 19 women who consulted their husband, few said that he had been understanding and had helped them visit health facilities or purchase medicines. The majority said their husband told them to get the IUD removed, as it was causing too many problems for them and for the family as a whole. In some cases, this was due to the husband's concern for his wife ("according to my husband, the Copper T is very dangerous"), or to the husband's anger that she had had an IUD inserted without his knowledge ("he was angry about this because I accepted without his consent"). Some men were also unhappy that IUD-related problems were costing money. One woman said: "He used bad language to me…he is a daily laborer and it is difficult for him to buy medicine for me." Another echoed this by saying, "[The] IUD caused much loss to me and my family…my husband was angry with me…he spent a lot of money for me…I will advise others not to take this method." But in general, men seemed to be concerned that their wife was weak and could not work. Several women said that their husband was angry and used bad language, so they felt they had little choice but to accede to his demands to have the IUD removed.

Those who consulted friends or relatives found little support for anything other than removal of the IUD. Some said that their relatives were afraid for them and that they should go to the clinic immediately. Those who consulted satisfied IUD user friends found that such friends could not offer advice and could not understand why the client was having problems. Some consulted relatives such as a mother-in-law, but this person's lack of knowledge only served to increase the client's fear: "During IUD insertion, the uterus is pulled and tied…this is the belief of my mother-in–law."

Support from the health sector

FWAs should visit all family planning clients in their home, and during the provider survey, most said they did this on a monthly basis. Only half of the women who were interviewed in depth, however, reported that they had been visited by an FWA during the time they had an IUD. Ten women had asked for advice from the local FWA. Most of this support received seemed to be in encouraging women to persevere a little longer, explaining that the problem might go away after some time. Several women mentioned that the FWAs were supportive in telling them not to worry, and that if the problem did not resolve, they could have the IUD removed. Three women reported that the FWA gave them either (ineffective) contraceptive pills to deal with bleeding or other (unspecified) medicine. Three FWAs suggested that the women talk to an FWV. None of the women mentioned that the FWA spent time discussing side effects and associated problems with their husband.

Sixteen of the 30 IDI clients went to see FWVs about their problem, although nine of these reported that they had already decided to remove the IUD before they went. Another seven did not want any kind of discussion and went to the clinic for removal only: A total of 75% went for removal, not advice. Nine women reported that the FWV administered medicines (unspecified) or advised taking medicines. Three said that the provider listened to their problems and then made the decision to remove the IUD. Most said that the FWV encouraged them to try a little longer, although one woman reported that she actually wanted to keep the IUD but did not get any useful help from the health providers. Some women felt they had to insist that the IUD be removed, and one said the FWV seemed angry at the decision, although she did comply with the client's request. Two women who said they had uterine prolapse were dissatisfied with the behavior of the service providers who did not want to remove the IUD, although it may be that the providers did not observe a prolapse

and therefore attempted to insist there was no problem. It is not clear overall how many clients wanted removal but felt they could not insist and as a result went home and removed the IUD themselves. One woman commented: "The behavior of the FWAs and the FWVs is good before IUD insertion, but it changes to the opposite after IUD insertion. When we go for advice, they tell us there is nothing they can do…" This might reflect poor counseling on the part of the provider, but it might also reflect unrealistic expectations on the part of the clients that medicine can solve their problems.

Seeking other solutions to side effects

Most of the women in the sample of 30 discontinuers looked for other solutions to their problems. Some visited local healers, and most took medicines that were given by the FWAs, the FWVs, or the local healer or that they had bought themselves. It is unclear what some of these medicines were, but 12 of the clients experiencing excessive bleeding took iron and vitamin tablets. Three women with this problem were (inappropriately) given oral contraceptives to try to manage the bleeding. One said that she spent 5,000 Taka (US$ 74) on medicines, to no avail.

For abdominal pain, 11 of the 20 sufferers took some kind of medicine: pills, capsules, syrups, or homeopathic remedies. It was not clear exactly what was taken, but the remedies seem to have been mostly pain killers, iron, vitamins, and antibiotics. Sometimes the women drank salt water, which is widely believed to have medicinal properties. For pain during sexual intercourse, six of the 13 sufferers also took these kinds of medicines. Seven of the 10 women who complained of vaginal discharge also took the same kinds of general health boosters or pain killers. Some mentioned that they had been given metronidazole (presumably for suspected trichomonas vaginalis or bacterial vaginosis). Many of those feeling general malaise took Paracetamol (a pain reliever), drank salt water or energy drinks, or ate eggs for strength. One client who said she had an abscess visited the clinic and reported being given a syrup medicine without even being examined. She said that the FWV assured her she would be cured; this patient reported that she had to ask the provider four times to remove the IUD.

Making the final decision to remove

A total of 23 of the 30 women interviewed in depth said that they asked to have the IUD removed, while six women said it was the FWV's suggestion to remove it. Eighteen of the 30 women said the health workers convinced them to try to tolerate the side effect longer. Of those who asked to have the IUD removed, most had to ask more than once: Thirteen asked once, 10 asked twice, six asked three times, and four had to ask more than three times. As a result, eight women actually removed the IUD themselves, confirming information gathered during the acceptor survey; two had the IUD removed by clinic ayas (support staff); and 18 had it removed by an FWV. All but three of the women were happy with their decision to remove the IUD. Overall, the same number reported that their problem had now been resolved.

Three-quarters of the women interviewed (22) said that they would never try an IUD again, but the remainder said they might try (four women) or would ask their husband (three women). Despite their bad personal experiences, however, the women still had a generally positive feeling about the IUD as a contraceptive method. Twenty-one of the 30 women said that, with some caveats, they would recommend the IUD to others.

Reasons for discontinuation

The reasons given for discontinuation are shown in Table 14. Almost 90% of discontinuers reported that they discontinued use of the IUD because of side effects, and many women reported more than one side effect; for example, pain often accompanied bleeding problems (mean complaints, 2.1 per discontinuer). They also noted other reasons in addition to side effects, such as their husband's

dislike of the method (not specified) or his discomfort during sex. By far the most commonly reported reason for removal was excessive bleeding: Sixty-six percent of discontinuers cited this as a reason, and the majority gave this as the number one side effect that made them stop using the IUD (Table 15, page 26). Abdominal pain, often accompanying the bleeding, was mentioned by more than half of the discontinuers, and was the number one side effect for about one-quarter of the discontinuers and more often the second most important reason for discontinuation.

One-quarter of the women also mentioned pain during intercourse as a reason for stopping use of the IUD. Pain during intercourse was the main reason for removal for 41 women, but was more likely to be ranked lower than bleeding as an adjunct reason for discontinuation (Table 15). Many women had previously mentioned that they had experienced abnormal discharge after IUD insertion, but this was not quoted as a key reason for removal. Similarly, many women had previously mentioned general weakness and fever, but this also was not named as a highly ranked reason for removal. Other reasons for discontinuation were that contraceptives were no longer needed (5.1%), that the woman had become pregnant (5.1%), or some other reason. Among these, husband's dislike was mentioned by 14.7% of discontinuers. Seven percent of discontinuers said also that their husband complained about the IUD causing him discomfort during sex.

Table 14. Percentage of IUD discontinuers reporting their main reasons for discontinuation*

Reason for discontinuation	(n=156)	
	N	%
No longer need contraception	***8***	***5.1***
Divorced	4	2.5
Husband away	4	2.5
Pregnancy	***8***	***5.1***
Wanted/planned	7	4.5
Method failure	1	0.6
Side effects	***137***	***87.8***
Excessive bleeding	103	66.0
Abdominal pain	80	51.2
Pain during sex	41	26.2
Abnormal discharge	25	16.0
Feeling bad/fever	17	10.8
Too long thread	8	5.1
Weakness	7	4.5
Other bleeding problems (spotting, irregular)	6	3.8
Vertigo	5	3.2
Back pain	4	2.5
Headache	4	2.5
Expulsion	3	1.9
Itching	2	1.2
Bleeding during sex	1	0.6
Missing thread	1	0.6
Missing period	1	0.6
Other side effect	22	14.6
Total side effects named	330 (mean 2.1 per discontinuer)	
Other reason	***39***	***25.0***
Husband does not like (not specified)	23	14.7
Husband feels discomfort during sex	11	7.0
Expulsion	2	1.2
Fear/superstition	3	1.9
Pressure from in-laws	1	0.6
Religious pressure	2	1.2
Other	2	1.2

* Respondents were able to give multiple responses.

Table 15. Number of IUD discontinuers giving reasons for discontinuation, by ranking

Reason	Total number	Ranked first	Ranked second	Ranked third	Ranked below third
Excessive bleeding	103	82	15	6	0
Abdominal pain	80	21	45	8	6
Pain during intercourse	41	9	12	18	2
Abnormal discharge	25	4	13	5	3
Feeling bad/fever	17	3	5	7	2
Too long thread	8	2	4	1	1

Physical description of side effects

This section provides more details about the four main side effects; this information was obtained from IDIs with women experiencing these side effects and subsequently removing the IUD.

Bleeding problems

Of the 30 clients interviewed, 20 mentioned bleeding problems as a cause of IUD removal, and 15 categorized this problem as a major cause of removal. Unlike women interviewed in the acceptor survey, clients denied that they had experienced this problem before insertion and therefore felt they could claim that it was related to the IUD. Furthermore, most excessive bleeding was accompanied by mild or moderate lower abdominal pain and cramping that the clients reported they had not previously experienced. Most of the women with this problem said they had been forewarned but also had been told not to worry about it, as it would go away or be cured. Some of the women experienced this problem from the beginning of IUD insertion, and some of them experienced it a few months after insertion. Women who had this problem endured it for varying lengths of time, although they describe lengthier endurance than the sample of acceptors, many of whom had the IUD removed within 1–2 months of insertion. The extent of endurance seemed to be associated with severity, provider availability (or ability to get to a health facility), husband's instructions, and real attempts to persevere and not remove. Ten of the 20 respondents interviewed finally made the decision to remove the IUD without consulting a health worker. In almost all cases, the "excessive" bleeding stopped after removal of the IUD, confirming for them the cause of the problem. Eleven of the 15 women who had described this side effect as a major cause for removal were happy after removal of the IUD, but most expressed regret and explained that they would have preferred to keep the IUD but could not manage the side effects of bleeding. Nine of the 15 women said that they would never try the IUD again, but three women said they would be prepared to try it again; two said they would discuss it with their husband.

The clients were asked to specify what they meant by "excessive," by describing the duration and intensity of blood flow compared with pre-IUD menses. For example, in response to the question "When the blood flow is *at its heaviest*, how many times a day would you have to change your pad or cloth?" most women reported that "normal heavy menses" meant changing their cloth or pad once or twice a day, but with the IUD, "excessiveness" meant changing a cloth or pad 4–5 times a day. Some women described not being able to control the bleeding with menstrual cloths and said that at times their undergarments would get stained. A few women described very heavy flow as "like the flow of water from a pitcher" or "like a wave."

In terms of duration, most women mentioned that "normal" menses meant bleeding for 1–3 days. They described "excessive" menstruation as lasting 4–5 days. For a few, however, menstruation was very prolonged, with only a few days of relief during the month.

During this period of "excessive" bleeding, the women described feeling physically unwell. Anemia is very common among Bangladeshi women, and it is likely that this, combined with certain food taboos during menses, caused women to feel rather weak. Every client with this problem described feeling weak or tired, experiencing vertigo, experiencing palpitations, feeling "uneasy," being unable to do household work, feeling feverish, and feeling like having a "bloodless body." Some also described the bleeding as causing them difficulty moving or standing for long periods, which seemed to make the bleeding worse and more likely to stain clothes.

Five clients mentioned irregular bleeding or spotting as a cause of removal, and two clients categorized this problem as a major cause for removal. All of these women said that they had regular menses before IUD insertion. After IUD insertion, their bleeding occurred several times in a month. Sometimes it was light, like spotting, and sometimes it was heavier, like menstrual bleeding. For all women, the problem went away after IUD removal.

One of the clients who mentioned irregular bleeding as a major cause of removal said she had been forewarned about the possibility by the FWV. She had suffered with the problem for eight months before deciding to discontinue. The second client developed spotting two months after insertion, and it happened every 10–12 days. After three months of this spotting, she decided to get the IUD removed. Both clients described feeling physically ill and emotionally wrought by the bleeding problem. The first client reported that she also had lower-abdominal pain, was unable to work, was unable to eat, and had no energy.

Lower-abdominal pain

Of the 30 IDI clients, 21 mentioned lower-abdominal pain as a cause of IUD removal, and 10 clients categorized this problem as a major cause of removal. Almost all of these clients described the pain as either severe or moderate. The pain began at different times for different respondents: during insertion, a few minutes after insertion, a few days after insertion, or sometimes a few months after insertion. Only three of the respondents with this problem recalled being warned of the possibility by service providers at the time of insertion. Women described how the providers delivered messages about side effects and complications in a vague language and merely advised them to come back to the facility whenever they faced any problems.

Clients experienced differences in the episodes of pain, with some women saying it was constant and some saying it happened only during menstruation. Some women mentioned that the pain intensified when walking or moving and during sexual intercourse. Sometimes pain was directly proportional to bleeding and discharge.

Usually, the women described the location of the pain as in the lower abdomen and of a cramping nature. Two clients revealed that they had been suffering from lower-abdominal pain for several years before IUD insertion and that since IUD insertion, the intensity had increased. The remainder of the women had never experienced such abdominal cramping before having the IUD inserted.

The pain was described as "…like something was pushing in the lower abdomen," "…everything was torn and came down from abdomen," "the pain was more than delivery pain," and "nothing compares with this pain." Overall, most women with this problem described not feeling well and becoming sick and weak due to continuous pain or pain experienced during menstruation. They felt uneasy that it hampered their normal activity. They described at times not being able to get up from bed or having to stay in a sitting position.

Eight of the 10 women suffering from lower-abdominal pain explained that the pain stopped after removal of the IUD, which led to relief and happiness. Three of these women said that they would be prepared to try to use an IUD again.

Pain during intercourse

Pain during intercourse was mentioned by 13 of the 30 IDI respondents, and eight of these described it as a major reason for removal. Only one woman mentioned that she had this problem before IUD insertion. All clients reported being relieved of the problem after IUD removal, which caused them to think this pain was abnormal and related to IUDs. Only one client recalled being told that she might have pain during sexual intercourse.

Most of the respondents said they felt pain during intercourse, although in a few cases, this pain continued after intercourse. The pain was so severe in many cases that the clients said they could not complete intercourse. Some described the pain as being in the uterus or said they felt as if the uterus was being pushed by something. One woman reported that she was "dying due to pain." Nine of the 13 women described the pain as severe, three said it was moderate, and one described it as mild. Irrespective of severity, however, all women described the pain as interfering with sexual intercourse. In addition to the specific vaginal or uterine pain they experienced, women described this problem as making them feel generally unwell and weak. Sometimes they became so tired that they could not get out of bed.

Abnormal vaginal discharge

Of the 30 clients, 10 mentioned abnormal vaginal discharge as a reason for IUD removal, and five clients categorized this problem as a major reason for removal. Seven of the 10 said that they did not have this problem before they had an IUD, and almost all were relieved of the problem once the device had been removed. Three women said that they did experience discharge before IUD insertion, but that it had been a different kind of discharge. The following client comments show how they thought the discharge was different and thus associated with the IUD:

- "The discharge continued as long as the IUD was in place."
- "The discharge was heavy like a period…cloths were soaked and had to be changed."
- "Before IUD, the discharge was thick, but after IUD insertion it was light, watery, and excessive."
- "The discharge was too much that it stained clothes and undergarments, and I had to use cloths (pads)."
- "The discharge was heavy and its smell was fishy. It stained cloths and I needed to change them before every prayer time."
- "The discharge was like cough, lime and watery."

Most of the women with this problem described the discharge as white in color, with a watery and sticky consistency, though in a few cases it was yellow. Women said that the discharge stained and hardened cloths/pads and that it was difficult to wash. Of the 10 women who experienced this problem, seven described associated itching, four described an associated bad smell, and five said pain accompanied the discharge. In six of the 10 women, the discharge did not interfere with sexual relations, but in others it did.

Overall, almost all of the clients with this problem described feeling generally unwell and generally weakened. They described "a burning sensation of feet," "feeling tired," and a feeling of "breaking feet and inability to walk." Some said they had palpitations and thus could not work; others said they were always thirsty and had a "tiredness on eyes and face." Some said they could not stand for long, move, or work and that they felt "dark over the eyes."

Emotional responses to side effects

Besides physical problems, the side effects caused the women emotional difficulties; all clients described feeling "upset" as a result. When asked to describe this, or what it really meant, the women's emotions fell into several categories—guilt, shame, fear, marital anxiety, and regret.

Guilt

Excessive menstruation or menstrual spotting caused serious problems for women. When menstruating, many women felt, for religious or health reasons, that they could not perform certain tasks. For example, in some families, women who are menstruating cannot tend cows or cook for the family. Women reported that they felt guilty not being able to contribute to the family/household tasks. One client with vaginal discharge was upset because her mother-in-law was angry with her for not being able to help around the house.

Women also reported experiencing guilt related to the taboo against praying during menstruation Muslims pray five times a day. Women in these communities usually pray at home with family members or neighbors, and by not doing so, they drew attention to themselves and had to give reasons why they could not participate.

Women also reported feeling guilty because they had in some cases insisted to their husband that they use this method—a method that had ultimately brought problems. This produced a certain amount of remorse that the woman had brought this problem upon herself. One woman said, "I thought I had accepted the IUD for betterment, but the opposite happened. You live with a husband, so you understand what happens when there is always bleeding. My husband was dissatisfied when I could not do household work." In many cases, the women had sought medical (formal or informal) help, which had cost money—another reason for feeling guilty. But inability to have intercourse with their husband during these extended menstrual periods was another important reason for feelings of guilt. Women described their and their husband's frustration with this. One woman's words were typical of others' reactions, as she was unhappy and blamed herself for accepting the IUD: "I thought to remove it. I myself tried to remove it. I blamed myself, why did I do this?" She was very worried and thought that she would never be cured.

Shame

Many of the women interviewed described staining clothes and undergarments associated with bleeding problems as very shameful. Many women felt they had to remain indoors during these times so as not to be seen staining their clothes. One woman said, "I was mentally upset; I could not go to any gathering because I always had to be conscious of my clothes, because they might be soaked with blood." Women use cloth pads or old saris to contain menstrual blood, and these have to be washed, dried, and reused. Many women described this being problematic for them, as others in the family would notice and ask what the problem was with their menses. One client described feeling bad because she had accepted the IUD for a better life, not a worse life. She reported that she felt shamed because she had accidentally bled at her prayer place. Another said "I was in shame in front of people; I could not perform my prayer." She also knew that people in her village thought IUDs were shameful, and that any woman who died with one in place would not be allowed *janaja* (prayers at a funeral). She felt that although she was suffering, her shame meant that she could not discuss it with others. In many cases, husband advised their wife to remove the IUD because she became so sick. Both husbands and wives were happy to be rid of the problem. Women described feeling ashamed that their problem was exposed to immediate family and even to neighbors. One woman said, "I was upset and felt I could not survive. I could not concentrate on my household work when my neighbors were talking about me."

Fear

Bleeding more than normal evidently caused many women to be fearful and evoked images of uterine perforation, continued health decline, and even death. This constant worry perpetuated itself in some cases and led to great mental anguish, not only for the women themselves, but also for the future of their children to have such an incapacitated mother. As one woman explained: "I thought, who would look after my children if…I would never be cured?" Vaginal discharges also caused women to be fearful. One client said, "Due to my suffering, I felt that some big disease would be happening in the abdomen. I was in fear." Women with other side effects, such as (suspected) uterine prolapse, fever, and general weakness, were frightened that they might never get well, and this caused considerable anxiety. One client said she feared her whole insides would come out; another said she could not eat for feeling so fearful that she had caused herself an irreversible health problem. One woman described becoming depressed and introverted.

Marital anxiety

Associated with feelings of guilt at not being able to perform wifely functions was spousal reaction to bleeding, pain, and discharge problems. Some husbands were described as sympathetic and helpful in trying to resolve his wife's problems, and some were very worried about the deterioration of his wife's health. But many were angry because his wife could not work and could not pray, and because medications were costing money. As with bleeding problems, every client with abdominal pain described being very upset and worried, becoming more and more anxious. This was especially true when husbands got angry and "used bad language" (reported by many clients), became physically abusive (reported by one woman), or ignored his wife because she was too weak to work, pray, or have sex. Husbands were described as playing an important role in the women's decision whether to continue or to remove the IUD, with most husbands opting for his wife to discontinue because of deteriorating physical and mental condition. In almost all cases of excessive bleeding, and in all cases of discharge, the women said their husband told them to remove the IUD, although in the end, the decision to do so was usually made by the women, who did not want to endure any further problems. In some cases, women had accepted the IUD without their husband's consent; often the husband only came to know of it once the pain problems began, and this made him angrier still. One client said that her husband told her that because she had caused the problem herself, she should solve the problem herself. In a few cases, the husband tried to help to solve the problem by buying medicine or consulting with a doctor on the woman's behalf. Most spouses were happy when the IUD was removed, though, mostly because they were poor, rural people with little money to pay for medicines, and because the husband resented this expenditure.

Pain experienced during intercourse caused considerable anxiety, and every client with this problem reported that it made her very upset, as it represented an issue for both her and her husband. The pain necessitated a reduction in sexual encounters, from "every two days to as little as only 15 days," according to one woman. Many women described feeling guilty about not being able to satisfy her husband. Many clients described verbal abuse from their husband, and in a few cases the husband simply avoided her. In one case, a client described being fearful that her husband was going to beat her because she was both complaining of pain and bleeding excessively, and she could not have intercourse with him. One woman said, "My husband used bad language…. I did not feel joy in anything…and [I thought] that I would not survive more days." The result for most women was constant worry, a loss of interest in everything, and an inability to concentrate on daily work or to enjoy life. As was the case with other side effects that affected the women's ability to have sex, men were described as very unhappy when their wife experienced pain during intercourse and were eager to have the IUD removed. In the case of some women experiencing painful sexual intercourse, the husband directly instructed them to remove the IUD, especially those who did not know it had been inserted in the first place. Money seemed to be an issue—men were resentful that they had wasted precious resources on something that had brought them problems. Some men

appeared to be more altruistic and merely wanted what was best for the wife's health. After removal for this reason, no client volunteered to ever try an IUD again.

Regret

Several clients expressed regret that the IUD had not worked out for them. For one woman this was a last effort to find a contraceptive that did not cause problems. For many, it seemed clear that IUD symptoms were too overwhelming, not only for them, but more importantly for their husband and their family. In the end, men often instructed their wife to remove the IUD so they could get back to a normal life.

Factors associated with IUD removal

Although side effects were clearly the major factor contributing to IUD removal, we undertook univariate and logistic regression analyses to examine other factors associated with discontinuation. The explanatory variables of interest in this analysis were those related to service quality context, such as the choice of the service site, whether the client was informed about the possible side effects of IUD, whether the client was told about the follow-up visit after insertion of the IUD, and whether providers told the client how to check the IUD strings.

To control for selective knowledge and use of contraceptive services, we included in the analyses several socioeconomic and demographic variables at the individual or household level. The women's age and educational attainment, monthly household expenditures, and husband's occupation were chosen to measure individual socioeconomic status. The number of living children was used to examine the effects of childbearing on contraceptive continuation. In the socio-cultural context of Bangladesh, husband-wife communication regarding contraceptive use is also important. Therefore, explanatory variables such as whether IUD use was discussed with and got approval from the husband, who made the final decision, and the husband's complaints about IUD strings during intercourse were also included. This analysis also includes side effects and preexisting conditions among clients. Univariate analysis results are shown in tables 16a through 16g (pages 32–36), and multiple regression results are shown in Table 17 (pages 37–39).

The most significant factors associated with removal are described in the following paragraphs.

- **Experience of side effects**: As expected, side effects were highly associated with discontinuation in the univariate analysis (Table 16a, page 32). All side effects reported, with the exception of vaginal discharge and weakness, were statistically significantly associated with removal. Those women reporting side effects were eight times more likely to discontinue use than those women with no problems. Excessive bleeding was by far the strongest determinant of discontinuation (odds ratio, 5.6), followed by painful intercourse (odds ratio, 4.0). Those who had an IUD with a long thread and whose husband complained about the thread were also highly likely to remove the IUD (Table 16a). In a multiple regression model (Table 17, page 39), bleeding and abdominal pain persisted as key variables associated with removal. Women reporting excessive bleeding were five times more likely to have their IUD removed than were those who did not have this problem ($p<.01$), and those experiencing abdominal pain were almost three times as likely to choose removal as were those without pain ($p<.01$).

Table 16a. Factors associated with IUD discontinuation: side effects

Variables	Definition	n = 330	Removed IUD (n=156)		Odds ratio (95% confidence intervals)	*p* value
			N	%		
Experienced any side effect	Yes No (ref)	257 73	145 (56.4) 10	56.4 13.9	8.0 (3.9–16.3) 1.0	<.01
Husband complained about strings	Yes No or DK (ref)	90 218	59 97	65.6 40.4	2.8 (1.7–4.6) 1.0	<.01
Experienced excessive bleeding	Yes No (ref)	150 180	104 52	69.3 28.9	5.6 (3.5–8.9) 1.0	<.01
Experienced abdominal pain	Yes No (ref)	139 181	86 70	61.6 36.6	2.7 (1.7–4.3) 1.0	<.01
Experienced abnormal discharge	Yes No (ref)	69 261	28 128	40.6 49.0	0.7 (0.4–1.2) 1.0	ns
Experienced pain during intercourse	Yes No (ref)	65 265	48 108	73.8 40.8	4.0 (2.2–7.4) 1.0	<.01
Experienced too long IUD thread	Yes No (ref)	10 320	8 148	80.0 46.3	4.6 (1.0–22.2) 1.0	.04
Experienced fever, feeling bad	Yes No (ref)	20 310	14 142	70.0 45.8	2.7 (1.0–7.4) 1.0	.04
Experienced weakness	Yes No (ref)	72 258	39 117	54.2 45.3	1.4 (0.8–2.4) 1.0	ns
Experienced spotting, irregular or abnormal bleeding	Yes No (ref)	58 272	38 118	65.5 43.4	2.5 (1.4–4.5) 1.0	<.01

- **Decision-making/spousal issues:** As with experience of side effects, spousal issues appeared to either mitigate or exacerbate these symptoms (Table 16b). (Note that only half of the women with side effects removed the IUD.) Women whose husband complained about the IUD strings were highly likely to discontinue; in fact, 65.6% of these women discontinued within one year (odds ratio, 2.8). Most critical, however, appears to be husband's knowledge and approval. Women who did not discuss the IUD with their spouse or who did not obtain their husband's approval were 3.7 times (and statistically significantly) more likely to have the IUD removed than were women who had their partner's approval (69.8% vs. 38.4%). Similarly, women who reported that they made the final decision as a couple (37.5%) were less likely to discontinue use than were those (50.4%) who did not decide together (odds ratio, 1.7). Among the few women said that the service provider decided to insert the IUD, 72.7% discontinued use, although the numbers are small and not statistically significant. When controlling for other variables (Table 17, pages 37–38), having not discussed IUD insertion with spouses was highly predictive of removal: Women who had not discussed IUD insertion with their spouse were almost four times as likely to have their IUD removed as were women who had discussed the IUD with their husband and had obtained his approval ($p<.01$). Also, women who felt that the provider had ultimately made the decision to insert the IUD were more than three times as likely to discontinue as were women who reported deciding themselves ($p=.02$).

Table 16b. Factors associated with IUD discontinuation: spousal issues

Variables	Definition	n = 330	Removed IUD (n=156)		Odds ratio (95% confidence intervals)	*p* value
			N	%		
Discussed with husband	Yes and approved	237	91	38.4	1.0	
	(ref)	15	9	60.0	2.4 (1.3–3.5)	ns
	Yes and disapproved	78	56	71.8	4.1 (3.5–4.6)	<.01)
	No					
Who made the final decision to insert IUD?	Couple (ref)	80	30	37.5	1.0	
	Other (any below)	250	126	50.4	1.7 (1.0–2.8)	.04
	Woman	193	89	46.1	1.4 (0.1–2.8)	ns
	Husband	15	8	53.3	1.1 (0.5–2.7)	ns
	Service provider	33	24	72.7	2.1 (0.7–3.5)	ns
Husband complains about strings	Yes	90	59	65.6	2.8 (1.7–4.6)	<.01
	No or DK (ref)	218	97	40.4	1.0	

- **Preinsertion problem**s: Removals were higher among women who had preexisting conditions (Table 16c); for example, 56.3% of women with preinsertion bleeding/menstrual problems removed their IUD within one year, as did 57.1% of those reporting preinsertion abdominal pain and 75.0% of those reporting preinsertion painful sex. Forty-seven percent of those with preinsertion abdominal discharge had their IUD removed, similar to the total percentage of acceptors who did so within one year. The only statistically significant issues were the preinsertion experiences of painful intercourse and vulval itching. In the multivariate analysis (Table 17, page 38), women who had preinsertion problems were almost twice as likely to discontinue as were those who did not have any problems, but this difference was not statistically significant.

Table 16c. Factors associated with IUD discontinuation: preinsertion problems

Variables	Definition	n = 330	Removed IUD (n=156)		Odds ratio (95% confidence intervals)	*p* value
			N	%		
Had preinsertion problems	Yes, at least one	119	61	51.3	1.3 (0.8–2.0)	ns
	No (ref)	211	95	45.0	1.0	
Had preinsertion menstrual problems	Yes	48	27	56.3	1.5 (0.8–2.8)	ns
	No (ref)	282	129	45.7	1.0	
Had preinsertion abnormal discharge	Yes	61	29	47.5	1.0 (0.6–1.8)	ns
	No (ref)	269	127	47.2	1.0	
Had preinsertion abdominal pain	Yes	42	24	57.1	1.6 (0.8–3.0)	ns
	No (ref)	288	132	45.8	1.0	
Had preinsertion painful intercourse	Yes	12	9	75.0	3.5 (0.9–13.1)	.05
	No (ref)	318	147	46.2	1.0	
Had preinsertion vulval itching	Yes	21	18	85.7	7.4 (2.1–25.8)	<.01
	No (ref)	309	138	44.7	1.0	

- **Geography**: Although great variation existed in reported side effects between the different districts, those differences were not so apparent in terms of removal (Table 16d). Some data were difficult to interpret: women in Barguna for example, reported the highest level of side effects and yet they had the lowest removal rates. Only Noakhali appeared to stand out as a district with much higher discontinuation rates than the others—67.3%, a rate double that of the lowest-discontinuation district of Barguna (33.3%). Place of insertion appears to be important also, with women living in a rural area and receiving the IUD from a rural clinic more likely to opt for removal (odds ratio, 1.7). Those who had an IUD inserted in a government facility were also statistically significantly more likely to have it removed than were those who received it at an NGO facility (odds ratio, 2.4). When other variables were controlled for (Table 17, page 37), geography remained important, with women in the districts of Dinajpur and Noakhali being more than five times as likely to discontinue IUD use as were women in Barguna district ($p<.01$). The location of the insertion facility (urban vs. rural or government vs. NGO), however, failed to significantly predict removal in the multivariate analysis (Table 17).

Table 16d. Factors associated with IUD discontinuation: geography

Variables	Definition	n = 330	Removed IUD (n=156)		Odds ratio (95% confidence intervals)	*p* value
			N	%		
District	Barguna	48	16	33.3	0.8 (0.3–1.5)	ns
	Chandpur	57	22	38.6	1.1 (0.2–1.9)	ns
	Dinajpur	49	20	40.8	1.2 (0.3–2.1)	ns
	Chapai Nawabgonj	43	19	44.2	1.3 (0.4–2.3)	ns
	Noakhali	98	66	67.3	3.5 (2.7–4.3)	<.01
	Rajbari (ref)	35	13	37.1	1.0	
Residence	Rural	311	149	47.9	1.6 (0.6–4.1)	ns
	Urban (ref)	19	7	36.8	1.0	
Place of insertion	NGO clinic (ref)	28	8	28.6	1.0	
	Government facility	302	148	49.0	2.4 (1.0–5.6)	.03
Place of insertion	Rural facility	257	129	50.2	1.7 (1.0–2.9)	.04
	Urban facility (ref)	73	27	37.0	1.0	

- **Demographic variables:** Discontinuation was highly associated with higher parity and with low education/illiteracy (Table 16e). Older women and those living in larger households were also more likely to discontinue use, but these associations were not statistically significant. The numbers were small, but women who described the decision about future pregnancies being in God's or their husband's hands were more likely to discontinue IUD use than were those who said they wanted or did not want more children. This variable is probably a good proxy for low education levels, religious conservatism, and fatalistic views. None of the socio-demographic variables remained significant when other variables were controlled for (Table 17, page 37).

Table 16e. Factors associated with IUD discontinuation: demographic variables

Variables	Definition	n = 330	Removed IUD (n=156)		Odds ratio (95% confidence intervals)	*p* value
			N	%		
Age	Under 25 (ref)	91	38	41.3	1.0	
	25–34	150	70	46.7	1.2 (0.7–1.8)	ns
	35 and over	88	48	54.5	1.7 (1.1–2.3)	ns
Parity	1–2 (ref)	181	73	40.3	1.0	
	3–4	123	67	55.4	1.8 (1.3–2.2)	.01
	5 or more	26	16	61.5	2.4(1.5-3.2)	.04
Want more children?	Yes (ref)	100	44	44.0	1.0	
	No	209	99	47.4	1.1 (0.6–1.6)	ns
	DK, not my decision	21	13	61.9	2.1 (1.1–3.0)	ns
Schooling	Primary (0–4 yrs)	154	86	55.5	1.8 (1.1–2.5)	ns
	Some secondary (5–9 yrs)	136	54	39.7	0.9 (0.2–1.6)	ns
	Secondary + (10+ yrs) ref	39	16	(41.0%)	1.0	
Literate, can read simple letter	Yes (ref)	200	83	41.5	1.8 (1.1–2.8)	<.01
	No	130	73	56.2	1.0	
Household size	5 or fewer (ref)	186	81	43.5	1.0	
	6 or more	144	75	52.0	1.4 (0.9–2.1)	ns
Ever experienced unintentional pregnancy	Yes	116	60	51.7	1.3 (0.8–2.0)	ns
	No (ref)	214	96	44.9	1.0	
Husband's occupation	White collar	134	65	48.5	1.0 (0.8–1.3)	ns
	Other (ref)	195	91	46.4	1.0	
Household expenditure	0–3000 taka (ref)	96	44	45.8	1.0	
	3001–5000 taka	146	71	48.6	1.1 (0.7–1.6)	ns
	More than 5000 taka	88	41	46.6	1.0 (0.4–1.6)	ns

- **Previous experience with family planning:** Previous family planning users (Table 16f) were slightly more likely to discontinue use of the IUD than those who had never used family planning (odds ratio, 1.3), but those with a history of switching contraceptives more than once were statistically significantly more likely to have the IUD removed (odds ratio, 1.6), especially those who had used and discontinued use of the pill within 12 months (odds ratio, 1.7) and those who had previously used and discontinued use of an IUD within 12 months (odds ratio, 4.8). In the multivariate analysis (Table 17, page 38), women who had tried an IUD before and had it removed within 12 months were six times more likely to opt for removal again than were those who had used and had continued for longer (p=.04).

Table 16f. Factors associated with IUD discontinuation: previous family planning experience

Variables	Definition	n = 330	Removed IUD (n=156)		Odds ratio (95% confidence intervals)	*p* value
			N	%		
Previous FP user	Yes	292	140	47.9	1.3 (0.6–2.5)	ns
	No (ref)	38	16	42.1	1.0	
Switched methods	Once (ref)	106	43	40.6		
	More than once	186	113	50.4	1.6 (1.0–2.6)	.05
Early pill user and discontinuer	Yes	101	57	56.4	1.7 (1.0–2.8)	.03
	No (ref)	158	68	43.0	1.0	
Early condom user and discontinuer	Yes	32	16	50.0	0.7 (0.2–2.3)	ns
	No (ref)	19	11	57.9	1.0	
Early injectable user and discontinuer	Yes	76	42	55.3	1.0 (0.5–1.9)	ns
	No (ref)	56	31	55.4	1.0	
Early IUD user and discontinuer	Yes	37	22	59.5	4.8 (1.6–14.0)	<.01
	No (ref)	30	7	23.2	1.0	

- **Health-sector variables**: Health-sector and service-delivery variables did not appear to strongly influence continuation or discontinuation (Table 16g); in fact, if anything, women reporting receiving more information (such as when to return for a checkup) were more likely to have the IUD removed than were those who reported not getting this information (odds ratio, 1.7). Having been counseled about possible bodily changes or side effects was *not* associated with any lower rate of discontinuation, nor was having been counseled about string checking or when to return. Women who did not know for how long the IUD would be effective were more than three times as likely to discontinue as were those who knew, but this variable may be a proxy for educational levels. When other variables were controlled for, none of the service-delivery variables appeared to be significantly associated with IUD removal (Table 17).

Table 16g. Factors associated with IUD discontinuation: health-sector variables

Variables	Definition	n = 330	Removed IUD (n=156)		Odds ratio (95% confidence intervals)	*p* value
			N	%		
FP health-seeking behavior						
Learned about IUD from FWA	Yes No (ref)	182 148	85 71	46.7 48.0	0.9 (0.6–1.5) 1.0	ns
Learned about IUD from FWV	Yes No (ref)	149 181	78 78	53.2 43.1	1.4 (0.9–2.2) 1.0	ns
Learned about IUD from friends	Yes No (ref)	172 157	82 74	47.7 46.8	1.0 (0.6–1.6) 1.0	ns
Talked to a health provider before insertion	Yes No (ref)	303 27	143 12	47.2 46.2	1.0 (0.4–2.3) 1.0	ns
Contacts with health provider before insertion	0 1 More than 1 (ref)	27 108 195	13 58 85	48.1 53.7 43.6	1.2 (0.4–8.1) 1.5 (1.0–2.0) 1.0	ns ns
Counseling and knowledge						
Advised about changes	Yes (ref) No	261 69	122 34	46.7 49.3	1.0 1.1 (0.7–1.9)	 ns
Advised about side effects	Yes (ref) No or DK	246 84	115 41	46.7 48.8	1.0 1.0 (0.7–1.7)	 ns
Told when to return	Yes No or DK (ref)	188 142	99 57	52.7 40.1	1.7 (1.1–2.6) 1.0	.02
Actually returned for a routine checkup	Yes (ref) No	121 209	55 101	45.5 48.3	1.0 1.1 (0.7–1.8)	 ns
Explained how to check strings	Yes (ref) No or DK	233 97	102 54	43.8 55.6	1.0 1.6 (1.0–2.6)	 .05
Know how long effective	Yes (ref) No	191 139	67 89	35.1 64.0	1.0 3.3 (2.1–5.2)	 <.01

Table 17. Factors associated with IUD discontinuation in a multivariate logistic regression model

Variables	Estimates			p value
	Odds ratio	95% conf. interval		
		Lower	Upper	
Geographic variables				
District				
Barguna (ref)	1.00	na	na	na
Chandpur	2.39	0.63	9.00	ns
Dinajpur	5.82	1.66	20.41	<.01
Chapai Nawabgonj	2.18	0.59	7.99	ns
Noakhali	5.20	1.66	16.29	<.01
Rajbari	3.49	0.83	14.72	. ns
Place of insertion				
Urban facility (ref)	1.00	na	na	na
Rural facility	1.75	0.39	7.79	ns
IUD insertion site				
Government sites	1.64	0.49	5.42	ns
NGO clinic (ref)	1.00	na	na	na
Socio-demographic variables				
Age				
<25 (ref)	1.00	na	na	na
25–34	1.36	0.58	3.18	ns
35+	1.81	0.61	5.34	ns
Education				
Primary or less (0–4)	1.89	0.56	6.34	ns
Some secondary (5–9)	0.95	0.32	2.79	ns
SSC or higher (10+) (ref)	1.00	na	na	na
Number of children				
1–2 (ref)	1.00	na	na	na
3–4	1.05	0.48	2.30	ns
5+	1.11	0.27	4.52	ns
Household expenditure				
<=3000	1.62	0.58	4.50	ns
3001–5000	1.24	0.53	2.87	ns
5001+ (ref)	1.00	na	na	na
Husband's occupation				
White color	1.71	0.83	3.50	ns
Other job (ref)	1.00	na	na	na

(cont..)

Table 17. Factors associated with IUD discontinuation in a multivariate logistic regression model *(cont.)*

Variables	Estimates			p value
	Odds ratio	95% conf. interval		
		Lower	Upper	
Decision making				
Husband's approval				
Discussed and approved (ref)	1.00	na	na	na
Discussed but not approved.	2.12	0.48	9.25	ns
Not discussed	3.82	1.55	9.37	<.01
Final decision on IUD insertion				
Women (ref)	1.00	na	na	na
Husband	1.40	0.31	6.33	ns
Couple	1.36	0.59	3.12	ns
Service providers	3.24	1.13	9.30	.02
Previous method use				
Early pill user and discontinuer				
No (ref)	1.00	na	na	na
Yes	1.16	.57	2.35	ns
Early injectable user and discontinuer				
No (ref)	1.00	na	na	na
Yes	1.67	0.66	4.19	ns
Early IUD user and discontinuer				
No (ref)	1.00	na	na	na
Yes	6.26	1.04	37.52	.04
Switched methods				
Once (ref)	1.00	na	na	na
More than once	0.82	0.40	1.70	ns
Preexisting conditions				
Preinsertion complains				
No complaints (ref)	1.00	na	na	na
One or more problems	1.90	0.52	6.97	ns
Had preinsertion menstrual problem				
No (ref)	1.00	na	na	na
Yes	1.13	0.47	2.70	ns
Had preinsertion abnormal discharge				
No (ref)	1.00	na	na	na
Yes	0.59	0.17	2.03	ns
Had preinsertion abdominal pain				
No (ref)	1.00	na	na	na
Yes	0.98	0.30	3.23	ns

(cont..)

Table 17. Factors associated with IUD discontinuation in a multivariate logistic regression model *(cont.)*

Variables	Estimates			p value
	Odds ratio	95% conf. interval		
		Lower	Upper	
Service-related variables				
Provider-client interaction				
No contacts	1.00	na	na	na
One contact	0.45	0.13	1.49	ns
More than one (ref)	1.33	0.66	2.68	ns
Return to follow-up				
No (ref)	1.00	na	na	na
Yes	0.59	0.30	1.17	ns
Explained how to check string				
No (ref)	1.00	na	na	na
Yes	0.65	0.32	1.31	ns
Advised about side effects				
Not informed (ref)	1.00	na	na	na
Informed	1.43	0.61	3.34	ns
Side effects variables				
Excessive bleeding				
No (ref)	1.00	na	na	na
Yes	5.09	2.06	12.59	<.01
Abnormal discharge				
No (ref)	1.00	na	na	na
Yes	0.61	0.28	1.30	ns
Spotting /irregular bleeding				
No (ref)	1.00	na	na	na
Yes	2.26	.93	5.49	ns
Lower abdominal pain				
No (ref)	1.00	na	na	na
Yes	2.78	1.43	5.42	<.01
Painful sex				
No (ref)	1.00	na	na	na
Yes	2.20	0.80	6.05	ns
Husband's complain				
No (ref)	1.00	na	na	na
Yes	1.50	0.62	3.64	ns
Change to menstruation				
No change (ref)	1.00	na	na	na
One or more changes	0.84	0.33	2.12	ns

Note: ref = reference group; na = not applicable; ns = not statistically significant

Provider Perspectives

Respondent characteristics

Sixty providers in the six study districts were interviewed about their knowledge, attitudes, and practices with respect to IUDs. Of these, 31 were FWVs or paramedics and 29 were FWAs.

Almost all of the interviewed FWAs (93%) were working in HFWCs, whereas the FWVs were working in HWFCs (61%), NGO clinics (29.0%), or MCWCs (9.7%). More than 90% of respondents had been working as health care providers for more than 10 years and had worked for many years in the same facility. The FWAs were more permanent fixtures than FWVs, with a mean length of work at the same place of 18.7 years, compared with 9.6 years for FWVs, paramedics, and other nurses ($p<.001$).[8]

In line with job descriptions (see Appendix 2), both groups described their roles appropriately. The FWAs described mostly doing counseling and home visits, accompanying clients to facilities, and doing some physical checkups.[9] On the other hand, FWVs were more likely to mention counseling, screening, IUD insertion and removal, and physical checkups as the mainstays of their IUD-related work. Interestingly, only one of the FWAs reported side effect counseling as part of her job (Table 18).

Table 18. Percentage of providers self-reporting various aspects of their job, by type of provider*

Aspect	FWV (n=31)		FWA (n=29)	
	N	%	N	%
Client screening	24	77.4	8	27.6
IUD insertion	29	93.5	0	0
IUD removal	27	87.1	1	3.4
Counseling (general)	31	100.0	29	100.0
Counseling (side effects)	22	71.0	1	3.4
Physical checkups	30	96.8	4	13.8
Assisting clients to get to facility	2	6.5	16	55.2
Referrals	4	12.9	1	3.4
Home visits	4	12.9	29	100.0
Administration	9	29.0	0	

* Respondents were able to give multiple responses.

FWAs and FWVs reported counseling different numbers of women over the previous six months ($p<.05$), with FWVs reporting higher numbers (mean, 106.9) (Table 19) than FWAs (mean, 79.8) and almost half of FWVs reporting that they had counseled more than 60 women in the previous six months. However, 61% of FWVs reported inserting fewer than 30 IUDs (mean, 36.8) in the same period.

[8] In this report, data on the seven paramedics are included with those of the FWVs.

[9] In Bangladesh, FWAs are not allowed to insert IUDs nor can they do physical checkups, but some FWAs reported doing this.

Table 19. Percentage of providers reporting having counseled clients for IUDs and inserted IUDs in previous six months, by number counseled or inserted

Number	Women counseled		IUDs inserted
	By FWAs (n=29)	By FWVs (n=31)	By FWVs (n=31)
Fewer than 30	51.7	16.1	61.3
31–60	17.2	35.5	25.8
61–100	10.3	22.6	3.2
More than 100	20.7	25.8	9.7

Views on IUD use in the community

The respondents thought that on average, most women in the community used the IUD for 3–5 (mean, 3.75 years) and were most likely to cite menstrual problems, abdominal pain, and vaginal discharge as key reasons for discontinuation (Table 20). Interestingly, almost half cited their husband's dislike of the method as a key reason for discontinuation, and many of the FWVs thought that fear and superstition played a key role in discontinuation. Clients wanting another child was cited by 19% of FWVs as a reason for discontinuation, although this was not a reason cited by women who discontinued in the first year (see acceptor survey).

Table 20. Percentage of providers reporting various likely reasons for women to discontinue IUD use*

Reason	FWV (n=31)	FWA (n=29)
Menstrual problem	93.5	100.0
Abnormal discharge	58.1	72.4
Lower abdominal pain	58.1	58.6
Husband's dislike	41.9	48.3
Fear/superstition	32.3	13.8
Want pregnancy	19.4	10.3
Thread problem	12.9	0.0
Other	22.6	10.3

* Respondents were able to give multiple responses.

When providers described the perceptions of the IUD in the community, many issues emerged. Most providers seemed to think that rumors were plentiful in the community; most frequently mentioned rumors were that the IUD somehow gets outside (or perforates) the uterus, causes infection (or cancer), and is uncomfortable during sexual intercourse (Table 21, page 42).

Table 21. Percentage of providers mentioning various community perceptions of the IUD*

Perception of IUD	Providers (n=60)
Causes cancer	43.3
Moves outside uterus	63.3
Ruptures the uterus	41.7
Causes pelvic inflammatory disease	53.3
Causes infertility	15.0
Is uncomfortable during intercourse	58.3
Is seen as a sin, so there will be no *janaja* after death	45.0
Causes excessive bleeding	10.0
Other	8.5

* Respondents were able to give multiple responses.

Provider confidence and knowledge

Providers were asked how confident they felt about the aspects of the IUD services that they provided. FWVs more often reported being "very confident" than did FWAs (51.6% vs. 31.0%). Almost all reported that they needed more training, in addition to more materials, specifically flipcharts, client leaflets, and posters, and almost half of all providers said they needed copies of national guidelines.

All were asked what kinds of questions or history they would take when considering whether a client might be suitable for an IUD. In general, the FWVs appeared to have a better grasp than FWAs of what issues might be important, although they focused more on medical issues than on reproductive intentions (Table 22). Only one-third of FWAs mentioned that they would ask clients about their husband's attitude.

Table 22. Percentage of providers reporting what kinds of questions they would ask or histories they would take from prospective IUD users*

Questions asked/history taken	FWVs (n=31)	FWAs (n=29)
Reproductive history		
Pregnancy history	71.0	62.1
Current pregnancy status	35.5	44.8
Desire for more children	58.1	44.8
Timing of next birth	41.9	24.1
Breastfeeding status	5.8	20.7
Method preference	12.9	10.3
Medical issues		
Menstrual history	71.0	89.7
Sexually transmitted infection (STI) symptoms	80.6	58.6
Chronic illnesses	61.3	55.2
Uterine problems	12.9	17.2
Lower abdominal pain	22.6	13.8
Societal issues		
Partner attitude	64.5	34.5
Other	16.1	10.3

* Respondents were able to give multiple responses.

What makes a client unsuitable to use the IUD was also discussed. Providers were most likely to mention that clients with a history of menstrual problems and other medical problems were not good candidates for IUDs, and FWVs noted this more often than did FWAs. In line with government policy, many providers mentioned a woman's being nulliparous as a contraindication to IUD use, although some staff erroneously thought that women who had many children would also be poor candidates for an IUD. Interestingly, although many providers had previously said that husbands could be one of the main reasons for discontinuation, nobody mentioned having a negative spouse as a reason for not being a suitable IUD client. Rather, they were more likely to mention the husband's absence as a reason to not consider a client suitable (Table 23).

The interview included questions about client age and parity when considering a client for an IUD. There are no guidelines in Bangladesh about minimum and maximum ages, yet 90% of respondents answered that there is a minimum age and 88.3% responded that there is a maximum age for obtaining an IUD. Of those stating a minimum age, 66.7% thought that women under the age of 21 were not eligible for an IUD and this was slightly more commonly stated among FWVs than among FWAs. Although IUDs are promoted as a perfect method for women in their later childbearing years, providers did not seem to agree. Of those stating a maximum age, 31.5% said that 35 was the maximum age; another 35.2% felt that 40 was the maximum age for inserting an IUD.

Table 23. Percentage of providers reporting client characteristics that made them unsuitable for IUD use*

Characteristic	FWVs (n=31)	FWAs (n=29)
Reproductive issues		
No children	77.4	75.9
Pregnant	51.6	51.7
Desire for pregnancy soon	32.3	20.7
Previous bad experience with IUD	9.7	10.3
Mother of many children	9.7	13.8
Over 45 years old	3.2	0.0
Within six weeks postpartum	6.5	0.0
Only one child, who is sickly	6.5	0.0
Medical history issues		
Menstrual problems	90.3	93.1
Painful intercourse	38.7	17.2
Lower abdominal pain	83.9	58.6
Cervical cancer	80.6	69.0
Excessive discharge	71.0	51.7
Previous caesarian-section	12.9	6.9
Anemia	6.5	0.0
Diabetes	3.2	3.4
Breast lump	0	6.9
Retroverted uterus	3.2	6.9
Other medical	6.5	3.4
Societal issues		
Husband away from home	22.6	20.7
Other	6.5	3.4

* Respondents were able to give multiple responses.

All respondents reported that multi-parity was important in deciding who could use an IUD, with 78.3% saying that a woman needed to have had at least one child and 21.7% saying she needed to have had two or more children. More FWAs than FWVs felt that two or more children were needed (31.0% vs. 12.9%, respectively).

Information given to IUD clients

In an open-ended question, providers disclosed what information they usually gave to prospective IUD users (Table 24). Almost all staff appeared to be IUD advocates, telling clients about the merits of the method and for how long it could be used; however, fewer than half mentioned that they would provide information on side effects, with little difference between cadres.

Table 24. Percentage of providers reporting information usually given to potential IUD users*

Information given	FWVs (n=31)	FWAs (n=29)
General counseling	12.9	20.7
Merits of IUDs	80.6	82.2
Duration of use	90.3	86.2
Side effects	41.9	41.4
Assurance about management of complications	12.9	17.2
Explanation of nonhormonal nature	29.0	17.2
Other	9.7	6.8

* Respondents were able to give multiple responses.

In a discussion about when providers would advise an IUD client to return to the clinic (Table 25), almost all recognized excessive bleeding as a reason to seek help, as well as problems of abdominal pain and missing thread. Painful intercourse, missing thread, and exposure to an STI were more likely to be mentioned as reasons by FWVs.

Table 25. Percentage of providers reporting problems requiring an IUD user to return to clinic*

Problem requiring return	FWVs (n=31)	FWAs (n=29)
Missing period	71.0	41.4
Side effects – general	25.7	37.9
Excessive bleeding	96.8	100.0
Abdominal pain/cramping	93.5	89.7
Pain with intercourse	38.7	27.6
Missing thread	93.5	72.4
Fever/chill with pain	38.7	34.5
If exposed to an STI	35.5	20.7
For removal	6.5	10.3

* Respondents were able to give multiple responses.

Despite knowledge of side effects, warnings to clients, and knowledge of screening and taking a woman's history to rule out those with a propensity for menstrual problems, only half of the providers agreed with the statement that the IUD has many side effects. When providers were asked to recount the main side effects reported by IUD users in their communities, more than 90%

mentioned excessive menstruation, abnormal vaginal discharge, and lower abdominal pain. Pain during intercourse was also mentioned by one-third of providers; this and other side effects were more likely to be mentioned by FWVs than FWAs (Table 26).

Table 26. Percentage of providers reporting various common side effects experienced in the community*

Side effect	FWVs (n=31)	FWAs (n=29)
Excessive bleeding	93.5	93.1
Abdominal pain/cramps	90.3	93.1
Abnormal vaginal discharge	80.6	89.7
Pain during intercourse	38.7	31.0
Bleeding during intercourse	16.1	10.3
Missing thread	74.2	44.8
Expulsion/longer thread	41.9	34.5
Feeling bad/fever	32.3	24.1
Period missing	19.4	13.8
Perforation	12.9	0.0
Other	3.2	20.7

* Respondents were able to give multiple responses.

Providers were also asked their personal opinion of IUDs. Comments were overwhelmingly positive (although some courtesy bias may exist). In general, however, FWVs offered more positive opinions than FWAs (Table 27). Almost half of the FWVs said that the IUD had few side effects.

Table 27. Percentage of providers reporting personal opinions about the IUD*

Personal opinion about IUD	FWVs (n=31)	FWAs (n=29)
Long-acting and easy to remove	87.1	75.9
No hormonal problems	45.2	41.4
Safe, comfortable, no daily worry	87.1	75.9
Few side effects	48.4	34.5
Own positive user experience	12.9	3.4
Other, positive	29.0	20.7
Other, negative	3.2	6.9

* Respondents were able to give multiple responses.

The role of the FWV in providing IUD services

FWVs work primarily in health facilities rather than in the community, and they are responsible for almost all IUD screening, insertions, and removals. Therefore, we asked FWVs more specific questions about what they actually do before and after insertion, how they manage side effects, what they look for when conducting a pelvic exam, and what else should be checked before insertion (Table 28, page 46). Providers appeared reasonably knowledgeable. Although not all of the examinations and tests that FWVs mentioned are technically necessary for an IUD to be inserted, they do represent good clinical practice and make use of the opportunity to provide women with a more general physical examination.

Table 28. Percentage of FWVs reporting that they conduct specified tests/checks before providing the IUD*

Tests/exams	(n=31)
Checked during pelvic exam	
Any type of ulcer	90.3
Pain when cervix is moved	67.7
Purulent discharge	80.6
Bleeding cervix	71.0
Anatomical abnormality	90.3
Other things checked	
Blood pressure	93.5
Look for anemia	61.3
Lab tests (Hb, sugar)	51.6
Weight	45.2
Pulse	38.7
Fever	41.9
Lump or pain in abdomen	12.9
Breast exam	6.5
Other	9.7

* Respondents were able to give multiple responses.

In terms of essential information to be given to women after inserting an IUD, almost all providers mentioned that they would tell the client when to come back and how to check the thread (not now regarded as essential by the WHO), but fewer mentioned providing information on how to deal with side effects (Table 29).

Table 29. Percentage of FWVs reporting that they give certain information to IUD clients after IUD insertion*

Information	(n=31)
When to return	93.5
How to check the thread	100.0
Not to have sex for seven days	64.5
What to do if period is missed	35.5
What to do if bleeding is a problem	51.6
What to do if infection is suspected	48.4
The need to maintain personal hygiene	16.1
Not to use another method	3.2
General information	19.4

* Respondents were able to give multiple responses.

Management of side effects

Suspecting that side effects might play a role in IUD discontinuation, we investigated what FWVs would do in the event that a client arrived at the facility with different types of problems. Unfortunately, the survey form omitted a question about management of excessive bleeding; however, we did ask questions about the other main side effects. For most side effects, the providers were likely to mention providing medication, and some mentioned providing counseling and reassurance (Table 30). For example, when asked about how they would manage a woman with an abnormal discharge, most responded that they would give iron supplements, vitamins, or painkillers. Only two FWVs said they would examine the client.

Table 30. Percentage of FWVs reporting how they would manage abnormal discharge in an IUD user*

Management	(n = 31)
Examine the client	6.5
Give medications	
Provide antibiotics	38.7
Provide iron supplements, vitamins, or painkillers	61.3
Provide high-dose oral contraceptives	12.9
Provide advice	
Counsel and give reassurance	45.2
Tell to wash in hot, salty water	6.5
Refer	25.8
Remove IUD if not resolved	54.8

* Respondents were able to give multiple responses.

The role of the FWA in providing IUD services

FWAs are meant to play a key role in providing information about family planning and in supporting women in the community who may be having contraceptive problems. The FWAs in this study reported that they visit households in their areas at least every two months, with slightly more than half saying they visited monthly. Most said that if a woman was interested in an IUD, they would provide her with information, and 82.1% respondents said they would accompany the client to a facility or provide someone else to accompany her (21.4%). Almost 60% of FWAs said that they faced some difficulties in counseling prospective clients about IUDs, and most of these were community issues that made it difficult to encourage women to try an IUD. More than 70% said that they faced family objections, especially those of mothers-in-law, and almost 60% said that religious and social stigma and superstition existed in the community concerning IUDs. In addition, almost one-third said that fear of side effects was a major problem for them in discussing IUDs in the community. When faced with clients who were having problems with the IUD, two-thirds said that they provided reassurance, 70% said they would assist a client in getting to a health facility, and almost as many said they would refer the client to a facility. Some respondents mentioned providing oral contraceptives, presumably for bleeding problems.[10]

[10] This is not helpful, and is confused with provision of estrogen for clients having menstrual problems associated with low-dose hormonal methods.

Programmatic issues

Providers were asked about their level of satisfaction with the ways in which IUD services are organized (Table 31). Almost half the FWVs were dissatisfied with the services, although the FWAs were more likely to express satisfaction. When asked what caused this discontent, most complaints about the services in the facilities (data not shown) revolved around the need to improve supplies of equipment and expendable supplies, and some mentioned the need to increase the number of trained staff and improve their supervision. Providers noted the considerable problems they faced with community superstition and religious or social objections to IUD use and continuation. Many providers mentioned the need for more efforts to motivate and educate the community about IUDs, using different stakeholders. They also said that satellite clinics needed to be better organized and that training for FWAs in counseling and management of side effects was necessary. All providers agreed that it would be good if IUD use increased in the community and reiterated that facility infrastructure needed to be improved to attract (and not have to turn away) clients. They acknowledged that more could be done in the community to provide information and support to users. Sixty percent of providers mentioned the need to educate men about the merits of IUDs, and 80% mentioned that informing men was a key way to reduce myths in the community.

Table 31. Percentage distribution of providers, by level of satisfaction with organization of services

Level of satisfaction	FWVs n=31	FWAs n=29
Very satisfied	8 (25.8%)	4 (13.8%)
Somewhat satisfied	15 (48.4%)	12 (41.4%)
Not very satisfied	8 (25.8%)	13 (44.8%)

Summary and Discussion of Key Findings

The last Bangladesh DHS (NIPORT, Mitra and Associates, & ORC Macro, 2005) reported a 12-month IUD discontinuation rate (35.4%) that was one of the highest in the world. This study was undertaken to make a more detailed assessment of 12-month IUD discontinuation rates, examine some of the factors associated with discontinuation, look in more detail at reported side effects, and make programmatic recommendations about how continuation rates could be improved. This study of 330 acceptors in six mostly rural study districts found a 12-month discontinuation rate of 47.3%, a rate even higher than that reported in the last BDHS.

The following are some of the general findings of our analysis:

IUD acceptors were uneducated, poor, rural women with a history of frustrated and ineffective management of reproductive intentions.

Most IUD acceptors were found to be poor, uneducated, rural women, who were dependent on their husbands, and lacked exposure to print media, radio, or TV. Although very young, most women expressed a desire for no more children or spacing of more than three years. The majority appeared to be good candidates for the IUD. They were also largely experienced contraceptive users, having used other methods before the IUD; however, many were failed or short-term users, having used previous methods for less than one year. One-fifth of users had tried an IUD before, and more than half of these had discontinued within the first year. These data are consistent with other data from Bangladesh that show that early discontinuation of all methods and switching of methods are commonplace (NIPORT, Mitra and Associates, & ORC Macro, 2005).

Most women thoroughly consider the decision to have an IUD, but many do not involve their husbands.

Most acceptors obtained their IUD in rural clinics after having had several discussions with friends, relatives, and health workers before making a decision. One-quarter of women who accepted an IUD either did not discuss this with their husband or had an IUD inserted without their husband's approval. The majority of women also made the final decision themselves to have an IUD inserted, although one-quarter made the decision with their husband and many more did so after being told to do so by their husband. Those women who did not seek their husband's approval were far more likely to discontinue use than were those who shared the decision to use the IUD. This is consistent with other data (Khan, 2001; Pariani et al., 1991; Tolley et al., 2005; Trottier et al., 1994) emphasizing the need for men to be involved, especially in strongly patriarchal societies.

IUD acceptors believe the IUD has fewer side effects than other methods.

The acceptors appeared to largely know the benefits of the IUD as a long-acting method. Half of users, however, accepted an IUD because they thought the IUD had fewer side effects than other methods—an important fact to note, since many were previously users of the pill and injectable who likely discontinued these methods because of side effects (NIPORT, Mitra and Associates, & ORC Macro, 2005). Despite their assertion about the advantages of the IUD, the majority of women also reported that providers had warned them about possible side effects.

Side effects are endemic, but differentially experienced.

After insertion, more than two-thirds of acceptors reported that they had experienced menstrual changes and abdominal pain, and one-third mentioned vaginal discharge and general malaise. Most problems reportedly began soon after insertion, leading women to ascribe their symptoms to the IUD itself, despite the fact that some of them reported having these problems before the IUD was inserted. Half of those with menstrual changes found periods to be heavier, and one-quarter said their periods became irregular. These changes led to concern about their health and in most cases, removal of the IUD.

Interesting differences were recorded between those who reported experiencing side effects and those who did not. Women in some districts were much more likely to report having side effects than were women in other areas, as were women who reported having a preexisting reproductive health problem. Importantly, women who did not have the approval of their husbands to use the IUD were more likely to report side effects than were women who had that approval, and women who made the final decision with their spouse to use the IUD reported fewer side effects than did women who did not decide with their spouse. Although the association was not statistically significant, poorer women, less-educated women, those with higher parity, and those with a history of short-duration family planning use were also more likely to report side effects. The fact that women reported having obtained information from health workers did not appear to influence their experiencing side effects; in fact, if anything, those women who reported getting information about the IUD from FWAs and FWVs and those who said the health worker advised them about side effects, when to return, and other related factors were slightly more likely to report having side effects. The observation of these differences suggests that although many side effects have a physiological basis (e.g., extra menstrual flow, which may be problematic for women who are already experiencing anemia), community, societal, religious, and spousal factors also are at play in causing women to see these physiological changes as "problems." In a study in Egypt, the authors concluded that women's age and husband's knowledge of the method contributed to women's experiences of menstrual side effects and to whether those experiences led to discontinuation or not (Tolley et al., 2005), which was a finding of other studies as well (Pariani et al., 1991).

Side effects, especially bleeding, are the main reason for removal.

Of those who discontinued IUD use, few consulted an FWV before deciding to have the IUD removed; rather most went to an FWV to demand removal, while one-quarter simply removed the IUD themselves. Although slightly more than half of the women reporting side effects had the IUD removed, side effects were the overwhelming reason for removal. More women reported excessive bleeding than any other side effect, and this was usually accompanied by abdominal pain and often other problems. Excessive bleeding was most likely to be named as the *number one* reason for discontinuation (pain was second). While many women noted abnormal discharge, weakness and fever to be key side effects, these were not given as key reasons for IUD removal.

Women with bleeding problems quickly discontinue use.

Despite reporting having suffered side effects, many women continued to use the IUD; they reported being very satisfied and planned to continue using the IUD for several years. Women seemed to be in two groups: those who could tolerate side effects and those who could not. Interviewers observed little difference in the length of time continuers and discontinuers experienced symptoms, which either then disappeared (continuers) or were no longer reported because the IUD was removed (discontinuers). What is clear is that women in this study tolerated painful sex, vaginal discharge, and general weakness longer than a bleeding problem and/or abdominal pain before removing the IUD. Moreover, it appears that the majority of discontinuers who had a bleeding problem did not tolerate it for more than one month before removing the IUD.

This would seem to be a critical time for ensuring good follow-up and for reassuring these women that bleeding problems will likely not continue, as almost half of the continuers had bleeding that ended after the first month. Also, if donors were to secure a reasonable price for the levonorgestrel IUD, which is associated with less bleeding, some of these problems could be mitigated (ACOG, 2005). Currently, this is not a viable option, however, due to the high costs associated with the product and the amount of staff retraining that would be required (Shelton, 2001).

Prolonged and increased menstruation is a fundamental problem for IUD users and their spouses.

The descriptions of side effects obtained in the IDIs were important in trying to understand how problems manifested themselves and how they impacted the women's lives. The women's descriptions of "normal" menses and altered menses during IUD use show that considerable changes occurred in both the duration and the intensity of their menses. Other side effects, such as pain and vaginal discharge, were also common. It is clear from the varying experiences of side effects reported (and the generally high incidence compared with any other country) that for many women, the side effects may be perceived rather than real, or, if real, are perceived as intolerable.

The side effects caused dramatic reactions, with women describing very intense emotions and fears. Menstruation and painful intercourse appeared to be particularly problematic issues. The IDIs showed that women felt a broad range of emotional responses (guilt, shame, fear, anxiety) that focused on menstruation and its associated taboos. Women described being unable to pray, eat properly, work, or have sexual relations during menstruation.

Women reported that their menstrual duration doubled as a result of using the IUD, and they perceived that the quantity of bleeding doubled as well, in line with reported data (Andrade & Pizarro Orchard, 1987; Milsom et al., 1995). Studies in developed countries have suggested that women can maintain reasonable iron levels even with an increase in blood loss of up to 55% (Milsom et al., 1995), though other studies have shown that while hemoglobin levels may not be affected by copper IUD use, ferritin levels among IUD users are lower than among nonusers (WHO, 1998). The general consensus is that women with iron-deficiency anemia can use the IUD (WHO, 2004). More research may be needed in Bangladesh, however, where it is estimated that 45% of nonpregnant women are anemic (Helen Keller International, 1999).

Earlier studies have suggested that women's perceptions of the menstrual cycle may be more associated with discontinuation than actual quantity or duration of blood loss (Rivera et al., 1999; Snowden et al., 1983; Tolley et al., 2005). Studies from other countries have shown that increased duration of menses affects women more than increased blood flow and is a major predictor of IUD discontinuation, no matter what method is being used (Tolley et al., 2005). In this study, the women's descriptions of what this additional menstruation meant to them and to their lives in the marital home and in the larger society suggest that this side effect was intolerable.

In many societies, menstruation is associated with being unclean or impure, and women are barred from many activities while menstruating (Al-Sabir et al., 1998; Salem & Setty, 2006; Mathews, undated; Severy et al., 1993). Many cultures describe menstrual blood as "polluting." Such a term reflects the common misconception that the purpose of menstruation is to rid the woman of "bad blood" that is building up inside her body (Salem & Setty, 2006). Despite this, one study in Bangladesh (Khan et al 2002), found that almost half the women interviewed reported having sexual intercourse during menstruation. They knew that it was socially unacceptable, and some even expressed fear that it might physically harm them, as they believe that during this time the vagina becomes very tender. Some also reported that they feared harming their husband, as the

blood might enter his body; however, most women reported not being able to stop their husband's desire and that to refuse sex would invite a scolding or beating, or cause him to seek other women (Khan et al., 2002).

In more traditionally conservative areas of Bangladesh, excessive menstruation causes substantial societal and familial problems. There are many mistaken beliefs associated with menstruation and suspected severe consequences for breaking the rules surrounding menstruating women (Garg et al., 2001).[11] Women's lives are often seriously curtailed, and in some societies menstruating women are unable to function in any usual capacity (Al-Sabir et al., 1998; Mathews, undated). Most rural women are unable to buy sanitary towels and have to rely on pieces of old cloth to stop the blood flow. Menstrual rags are considered harmful and shameful and thus must not be seen by men or boys. These rags must be washed in the latrine and then dried inside, hidden in a corner, under the bed, or in the rafters, where they may not dry properly and therefore can become moldy (Al-Sabir et al., 1998; Khanna et al., 2005; Mathews, undated). Additional bleeding thus causes additional problems. The women in this study mentioned many of these issues as key obstacles to their IUD continuation. Furthermore, if they are unable to eat a full diet, and if they are menstruating more than usual in their already anemic state, these women may become truly weakened. This study suggests that it is a combination of physical, social, and psychological factors that make contraceptive use difficult in this society when bleeding patterns are affected.

Many women also complained of painful coitus, but it is not clear what would be the anatomical reason for this. Again, it may be a psychosomatic manifestation of the spouse's unpleasantness due to the woman's reduced availability for sex due to menstruation, and to men's complaints about making contact with the IUD's long strings during intercourse, which is in fact more uncomfortable for the man than for the woman. As described by the discontinuers, the lack of understanding and fear about what these side effects meant, the inability to participate in normal life and the ensuing arguments with spouses clearly played a role for most women in the decision to remove the IUD.

Husbands mitigate or exacerbate IUD side effects.

Although three-quarters of women reported experiencing side effects, not all removed the IUD as a result. Other factors were also important in discontinuation. Women with a history of contraceptive discontinuation (especially poor previous IUD use) and a history of preexisting reproductive health problems were more likely to discontinue IUD use. Factors such as being older, of higher parity, poor, and uneducated also were associated with discontinuation. Other factors, such as spousal support (or lack thereof), were seen to play a role in either mitigating or exacerbating the role that these side effects play. Women who had discussed the IUD with their partner and had together decided on IUD use described having fewer side effects and were better able to tolerate such effects until they went away. Women who discontinued IUD use appeared to have an unsupportive spouse before insertion and/or an unsupportive husband after insertion. Women reported that their husband complained about the IUD strings and about the menstrual changes as much as, if not more than, they did. Husbands were generally described as very unsupportive when problems related to IUDs persisted and caused family problems, especially if the husband did not know about or approve the use of the IUD. Some husbands were described as abusive and angry when their wife was unable to work, unable to pray, and unable to participate in normal community activities as a result of IUD

[11] For example, menstruating women cannot do the following: have sex for extended periods; go into the kitchen; participate in prayers; eat certain foods (meat, eggs, fish, and leafy vegetables); carry certain things (rice containers) or touch clay pots; serve food to certain people; go near elderly males; go near cows; touch *tasbi* (counting beads), rice, other grains, turmeric, pepper, pickle, and tamarind; light the evening lamp; go near pregnant women or women with newborn babies; go to an open field, to a paddy field dike, or under bamboo, a banyan, or a tree full of fruits; go into a school; go to the latrine at certain times of the day; or even go alone far from home.

use—a phenomena also reported in a study by Khan, Townsend, and d'Costa (2002). In a survey of 54 women, only 10 reported that their husband was understanding when they refused sex because of IUD-related side effects. In the other cases, women said their husband's reaction would be to scold them, beat them, threaten to be unfaithful, or threaten to send them to their parent's home. Ultimately, refusals often led to forced sex (Khan, Townsend, & D'Costa, 2002).

It is not surprising that in this social milieu, women feel desperate and unmotivated to continue IUD use when confronted with twice as many menstrual days as usual and a threatening spouse. Women who experienced bleeding problems particularly and who had not obtained their husband's approval to use the IUD were highly likely to discontinue use. Friends and neighbors, when consulted about resulting problems, usually advised the client to remove the IUD. Service providers often overlook family and community relationships, and yet these relationships are important in influencing the support women receive to deal appropriately with side effects (Townsend & Jacobstein, 2007). In Bangladesh, women have generally been the focus of family planning campaigns, with few efforts to include men (Piet-Pelon et al., 1999), despite the DGFP recommendation that men must consent to their wives' use of the IUD (IUD informed consent form, DGFP, 2007).

Health-sector factors not associated with continuation.

Health-sector and service delivery variables did not appear to strongly influence continuation or discontinuation, except that those having the IUD inserted at a rural facility and at a government facility were most likely to discontinue use. If anything, those reporting receiving more information (such as when to return for a checkup) were more likely to remove the IUD than were those who reported not getting this information. Having been counseled about possible bodily changes or side effects was not associated with any lower rate of discontinuation, nor was having been counseled about string checking or about when to return to the facility. This is also consistent with data from other studies (Bhat & Halli, 1998; Tolley et al., 2005).

Clearly, "counseling" can take different forms. Tolley et al., (2005) reported in a study in Egypt that women who received counseling were provided with only partial information about their chosen method and that for some methods they were also more likely to be told about the method's advantages rather than its disadvantages. This study was not able to evaluate the *quality* of counseling, but earlier studies have suggested that it is less than optimal, with few providers providing enough basic information about side effects (Alam et al., 2006). The majority of women interviewed reported that they had been warned about side effects, but they described the advice as vague; they had been told not to worry, just come back, or wait for the side effects to go away. The problem is that women *did* worry about these side effects and treated them as major, sometimes even life-threatening events. While one would not want to suggest that counseling is not important, it is the nature of the counseling (which may focus on routine biomedical and insignificant issues, or issues that appear unimportant in the abstract, rather than on suspected key contributors to discontinuation such as spousal and socio-demographic and cultural issues) that makes it ineffective in reducing discontinuation. The Bangladesh family planning manual does not provide guidance to health workers in how they should discuss side effects or how they should approach the issue of excessive menstruation, only that it should be discussed (DGFP, 2007). Several studies have suggested that women in many developing countries have a limited understanding of the nature of menstruation, the within-normal limits of duration and flow, and the fact that menstruation is generally neither harmful nor unclean (Garg et al., 2001; McMaster et al., 1997; Salem & Setty, 2006). It is not surprising that unless girls and women are helped to better understand these issues, and are counseled accordingly, they will continue to harbor the myths that make menstruation so worrying and socially unacceptable and will continue to restrict their mobility and behavior during menstruation (Narayan et al., 2001).

Although providers also mentioned that they knew men were key barriers to successful IUD use, dealing with this issue was not included in their list of activities that could help improve IUD use and continuation. It is likely that providers recognize the problem of men, religion, and menses as related to IUD use, but are not trained to handle such issues or do not see it is as part of their responsibility. Rather, they focus solely on providing information to the client about possible side effects, without acknowledging that women cannot manage the side effects because of socio-cultural conditioning and taboos around menstruation.

Help is not always timely or relevant

Study respondents reported that once side effects manifested themselves, providers did try to encourage them to retain their IUDs and to wait for the side effects to go away, but they also told us that by the time they went to see a provider, they (or their spouses) had already made the decision to discontinue use.

The health workers seemed generally positive about IUDs and supportive of the women who used them. Most providers are older and experienced, having spent many years working in the same place; this is especially true of FWAs, who are well-rooted in their communities. Most FWVs seemed to know what is expected of them vis á vis IUD services, but did not express great confidence in providing IUD services, possibly because the majority actually inserted very few IUDs. Most providers acknowledged that there are problems with IUD use in the community, although only half said that side effects are a key problem, and many did not seem to be fully aware of the high discontinuation rates (not surprising, given that one-quarter of discontinuers removed the IUD themselves). When asked about screening women, not all providers mentioned using key history questions or giving information that is listed in the Bangladesh national family planning manual (DGFP, 2007). This would seem to be important, given the correlation observed between preexisting complaints and subsequent problems with the IUD. Few providers mentioned that they would check for anemia, yet this is a key DGFP recommendation. Rather than focus on management of side effects, health providers focused on issues such as checking strings—a standard protocol item in Bangladesh, though now not generally thought to be of much clinical importance (Jacobstein, personal communication). Many women appear to be regarded by providers as poor candidates for IUDs because they are too young or too old (over 35), and this is not a DGFP criterion. Although the providers were aware of common myths around the IUD, they did not take it upon themselves to address them.

Providers reported (and the clients confirmed) that they try to reassure women and suggest they try to manage side effects for a little longer. It seems that many women had to ask more than once for IUD removal (and many just removed the IUD themselves). We recognize that there is a fine line between encouraging a woman to continue using the IUD and refusing to remove it, and what providers describe as encouragement to continue might be construed by the client as a refusal to remove the IUD. Many women reported that they were unhappy that the provider simply provided encouragement to persevere rather than solve their problem with medications, a recurring theme in settings with cultural expectations about the power of medicine. Beyond this, some health workers were described as unhelpful or even angry, and this issue needs to be addressed as soon as possible.

Given the early discontinuation rates observed, support for clients during the first three months of IUD use would seem to be important, yet clients reported few visits by FWAs. This appears to be part of a general problem in the country: There has been a significant decline in fieldworker visits since 1996. In the 2004 BDHS, only 18% of married women of reproductive age reported having been visited for family planning services by a fieldworker in the six months preceding the survey. Of women using the IUD, 67.5% were not visited by a fieldworker in the previous six months (NIPORT, Mitra and Associates, & ORC Macro, 2005).

Recommendations

Despite personal problems with the IUD, clients retained a positive respect for it, with most discontinuers reporting that they would still recommend it to others. Similarly, most providers had an affirmative attitude toward the IUD. It is a method worth pursuing, but interventions are required to help reduce the number of side effects perceived or experienced by women and to reduce the amount of discontinuation. The recommendations provided here may also apply to other methods such as oral contraceptives and injectables that also cause bleeding irregularities.

Menstrual issues need to be more openly addressed with clients and partners.

Although the reported level of preinsertion counseling did not appear to influence IUD use outcome, the nature and quality of that counseling needs reassessment. The management of menstrual complaints needs to be an integral part of reproductive health services. Instead of merely telling women that they might experience uterine cramping and excessive bleeding, counseling needs to focus on explaining the nature of that unusual bleeding and its likely duration. Clients need help in understanding that if menstruation is heavier or lasts longer, it is not a cause for concern. Counseling also needs to focus much more on changing spousal and societal attitudes toward side effects (especially menstrual changes) and on equipping women to manage those side effects and to negotiate discussions with spouses around what is happening. Efforts are also needed to educate women about the range of normal vaginal secretions.

Women whose husband was not involved in discussions or decisions about the IUD are much more likely to report having side effects and are much more likely to discontinue use. It seems that everyone knows that male and community attitudes about menstruation and other side effects are key barriers to the success of IUDs (and other contraceptives) in Bangladesh, yet few providers are equipped or able to address the problem. Efforts need to be made to develop materials for men, or to encourage husbands to accompany their wives for counseling.

Programs that focus on enhancing communication between men and women will require time and effort. Blanc (2001) remarked that verbal communication between partners about reproductive health is low in many developing countries and that gender-based power inequities contribute to that lack of communication. Indeed, the idea of not communicating seems more normative (Gipson & Hindin, 2007). Moreover, one of the important mechanisms to maintain social control over women's sexuality is to deny them access to information on sexuality and other issues (Gupta, 2000). This is done in various ways, including attaching negative values to any discussion of sexuality, controlling mobility, and discouraging access to relevant literature (Blanchet, 1996; Khan et al., 2002). Solutions need to be broad-based and less medically focused if contraceptive use and continuation in Bangladesh is to improve.

Community interventions are needed

More general community-level initiatives that address societal and religious attitudes toward menstruation are needed, particularly in those districts with high discontinuation rates. In some developing countries, efforts are underway to educate young women about menstruation before menarche, so that they are better prepared and have fewer negative reactions to menstruation. Especially important is learning about hygiene (since in many places it is a common taboo to wash during menses), including the need to frequently change pads or cloths (Salem & Setty, 2006). Some projects include helping young women to make their own sanitary napkins to offset costs

associated with frequent changes and to demystify menstruation as a taboo subject (Finley & Murthy, 2006). A comic book for adolescents has already been developed in Bangladesh, and this could be used and adapted for older women (BCCP, 2004).

Programs that involve the wider community, including men and religious leaders, are also important. Male-focused and religion-focused work needs to concentrate on education about the physiology of menstruation that will help to dispel rumors and misconceptions (Salem & Setty, 2006). It should also focus on support for women who are using contraception, on helping them to understand side effects and their self-limiting nature (i.e., the need to be patient), and, most importantly, on reducing taboos around menstruation. Programs need to stress that women need to be helped if they feel unwell, should be allowed to eat a healthy diet, and should be allowed to meet as much as possible with friends and family during menstruation. FWAs, other community and social workers, and behavioral change specialists need to be involved in these broad-based efforts.

Routine prophylaxis for bleeding should be considered.

Our data show that bleeding patterns did appear to change significantly during IUD use. In a known anemic population, it may be that analgesics should be routinely given at the time of IUD insertion to try to mitigate some of the effects of cramping and extra menstrual flow. If such analgesics are given beforehand, then women can use them as and when needed, rather than having to return to the clinic or buy inappropriate medications from a pharmacy. WHO (2005) recommends the administration of nonsteroidal anti-inflammatories such as ibuprofen (but not aspirin) or tranexamic acid and iron supplements, and advises about the need to eat iron-rich foods. Although iron supplementation is typically recommended, however, Fazio-Tirrozzo et al., (1998) have recently argued that supplementation will not improve iron status if significant blood loss is occurring through menstruation.

Preinsertion screening and counseling should be improved.

Women who had problems before insertion, or who had problems with their methods, were much more likely to experience side effects after IUD insertion and were much more likely to discontinue use. Providers need to take a better history from clients to identify women who have existing or recent problems, so as to give them additional counseling about what to expect. In addition, women in some districts reported far more side effects and discontinued use more than others. Providers in these districts need refresher training to help them concentrate their efforts on better counseling, especially among vulnerable populations. Providers need to be careful not to persuade women to accept this method when they are not sure about it, or before discussions with partners.

FWAs should play a key role in providing better support in the first three months after insertion.

The first three months after IUD insertion are critical, as women will either manage their side effects or have the IUD removed. This is a crucial time to ensure good follow-up and reassure women that bleeding problems will likely not continue and are not to be feared. FWAs reported that they visited clients regularly, but this was not borne out by testimonies of the clients themselves. FWVs must inform FWAs of women in their communities who are new acceptors, and ensure that FWAs know how to counsel women about these issues. Women appear to want a “magic bullet” to manage side effects such as bleeding and abdominal pain, but none exists apart from pain-killers and iron supplements. It seems that postinsertion support needs to focus more on issues of normal vaginal flora, sexuality, menstruation (and notions of impurity), and management of a husband’s concerns. Training FWAs to be better supporters of contraceptive acceptors is urgently needed.

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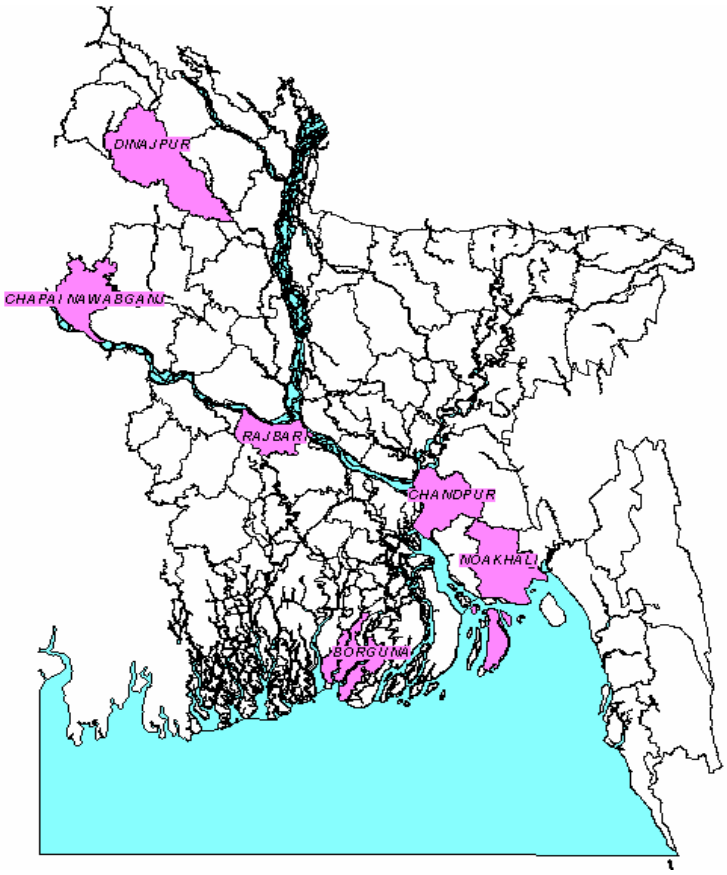
Appendix 1: Study Areas and Map of Bangladesh

Chapai Nawabganj, located in the northern part of Bangladesh, has an area of 1,744 sq km. The district consists of three municipalities, five subdistricts, and 1,136 villages. The total population is 1,419,534: 50.1% male and 49.9% female; it is 94.3% Muslim, 4.7% Hindu, and 0.23% Christian. The literacy rate is low, at 23.8%: 28.5% of males are literate and 19.1% of females. Most people are engaged in agriculture (34%). The contraceptive acceptance rate (CAR[12]) is 71.1%.

Dinajpur, also in northern Bangladesh, has an area of 3,438 sq km. It consists of six municipalities, 13 subdistricts, and 2,142 villages. The total population is 2,617,942: 51.1% male and 48.9% female; it is 76.6% Muslim and 20.6% Hindu. The literacy rate is 27.4%: 34.7% male, 19.5% female. Most people are engaged in agriculture (42.8%), and the CAR is 73.5%.



Rajbari is located in the central part of Bangladesh and has an area of 1,118 sq km. The district consists of three municipalities, four subdistricts, and 986 villages. The total population is 940,360—51.02% male and 49.0% female, and 86.7% Muslim and 13.1% Hindu. Literacy rates are 26.4%: 32.7% for males and 19.7% for females. Here also the main occupation is agriculture (42.8%). The CAR is 67.2%.

Chandpur, located in the east-central part of the country, has an area of 1,704 sq km. River erosion is a common feature in this district. The district consists of six municipalities, seven subdistricts, and 1,226 villages. The population of 2,210,162 is 48.7% male and 51.3% female, and is 92.5% Muslim and 7.2% Hindu. Literacy rates are higher than other areas, at 37.8%: 42.7% for males and 33% for females. The main occupation is agriculture (35.1%) and the CAR is 61.2%.

Noakhali, which is located in the southeastern part of the country, has an area of 3,601 sq km. It consists of five municipalities, six subdistricts, and 978 villages. The total population is 2,533,394:

[12] As measured by the Management Information System of DGFP.

It is 49.6% male and 50.4% female, and is 93.4% Muslim and 6.4% Hindu. The literacy rate is 37.1%: 42.9% for males and 31.5% for females. The main occupation is agriculture (30.3%), and the CAR is the lowest of the six study areas, at 56.5%.

Barguna is a coastal district with an area of 1,831 sq km. The district consists of four municipalities, five subdistricts, and 560 villages. The total population is 837,955: 49.9% male and 50.1% female, and 91.0% Muslim and 8.7% Hindu. Literacy rates are 40.1%: 45.1% for males and 35.1% for females. The main occupation is agriculture (50.5%), and the CAR is 62.9%.

Appendix 2: Sample Size Calculations and Sampling Procedure

Sample Size Calculations

The goal of determining sample size for the acceptor survey was to find a size that fit both within the desired range for precision and within the budget available. The sample size was determined to measure indicators at one point in time (point estimation) with a precision of 5% on either side. Sample size for the acceptor survey was determined through the formula:

$$n = \frac{Z^2 PQ/C^2}{1 + (Z^2 PQ/C^2 - 1)/N} \quad \text{..... (a)}$$

Where,
n = required sample size
P = a dichotomous probability
Q = (1 – P)
Z = standard normal variate associated with the confidence interval (Z = 1.645 if 90%)
C = precision level of the estimate
N = population size (total number IUD acceptors in March 2006)

To determine sample size, we used the most recent Bangladesh Demographic and Health Survey first-year IUD discontinuation rate as the key variable or variable of interest (35%); therefore, to be sure that the actual *p* is within the determined range, we chose *p* = 0.35. We also chose a confidence level of 90% and an error level of ± 5%. For a confidence level of 90%, the standard normal variate takes the value of 1.645. We also knew that in March 2006, a total of 1,803 IUDs were inserted in the selected six districts, thus, the population is n = 1,803.

Substituting these values in Equation (a) gave us a sample size of 217. As mentioned, the study employed a cluster sampling approach; therefore, design effects were considered, and the sample size was increased by 50%, implying that a total of 325 respondents were needed. It was also assumed that some of the respondents might not be available on the day of the survey or might not be interested in participating in the interview; therefore, some reserves were required, so adding 15% to the final sample size for the first round interview, we calculated 325 x 1.15 = 374 ≈ **375**.

Sampling procedure

1. ***Acceptors***
   The required number (375) of IUD acceptors was selected randomly from the IUD registers, using a systematic random sampling procedure from 117 facilities—six maternal and child welfare centers (MCWCs), eight *upazila* health complexes (UHCs), 12 nongovernmental organization (NGO) clinics, and 91 health and family welfare centers (HFWCs) in 14 *upazilas* (subdistricts). The sample selection process was implemented in three stages:
   a) At the first stage, of the 40 *upazilas* in six districts, 14 *upazilas* were selected, with a probability proportional to the number of IUD acceptors.

b) At the second stage, six MCWCs, 12 NGO clinics, and eight UHCs were selected purposively; 4-7FWCs from each of selected *upazila* were also chosen, based on the geographic spread and size of the *upazila.*

c) Finally, the required number of IUD acceptors per selected facility was selected randomly following a systematic sampling procedure. Because urban facilities (UHCs and MCWCs) were limited in number compared with rural facilities (FWCs), all acceptors from the 14 urban facilities (six MCWCs and eight UHCs) were selected. From each FWC, we selected acceptors proportional to the total number of acceptors in March 2006.

2. ***Discontinuers in-depth interview***
   In-depth interviews (IDIs) with discontinuers were conducted after completion of the acceptors survey. Of the total 156 discontinuers, 30 were selected purposively. While selecting discontinuers for IDIs, reasons for discontinuation were carefully analyzed. First, the number of IDIs was evenly distributed among six study districts—that is, from each district, five discontinuers were selected. One of the main objectives of the IDIs is to capture salient features of major problems; therefore, the data collection team attempted to capture frequently repeated problems such as bleeding, abdominal pain, and pain during sexual intercourse. On the other hand, the team also tried to capture all major types of problems. As a result, most of the discontinuers who had the most prevalent side effects were selected from each district.

3. ***Providers***
   Family planning service providers—family welfare visitors (FWVs)/paramedics and family welfare assistants (FWAs)—were selected using a simple random sampling technique to identify 60 respondents. A list of service providers who were employed under the Directorate General of Family Planning, Bangladesh, and by NGOs was gathered from 117 selected facilities where the acceptor survey took place. A total of 30 FWAs (community-based) and 30 FWV/paramedics (facility-based) posted at MCWCs, health and family welfare centers, and NGO clinics were selected. During the survey, one FWA was replaced by a FWV due to her nonavailability.

Bangladesh family planning workers

FWVs are facility-based staff who receive 18 months' basic training upon joining this government service. All FWVs are female, and their minimum qualification is at least 12 years of schooling from any recognized education institute in Bangladesh. They have experience in providing family planning, mother and under age 5 child health care, health and nutrition education, and satellite clinic services at outreach areas within their defined community. Their main functions are to provide counseling to the clients and to provide the pill, condoms, injectables, and IUDs from the facility.

FWAs are field-based family planning workers; all are female. Their minimum qualification is at least 10 years of schooling. They work under the supervision of a family planning inspector, who is male. They are union-based staff, are recruited from the same union where they are posted, and live in the same community. They visit clients' residence on a regular basis and provide information and distribute short-term family planning methods. They also do preliminary counseling at the household or community levels. They maintain a register for all eligible couples and maintain individual records with updated status of contraceptive use.