

# Contraceptive Method Attributes and Married Women's Intention to Use the Pill or the Injectable in Rural Bangladesh

**CONTEXT:** The factors underlying contraceptive method choice are poorly understood in many countries, including Bangladesh. It is important to understand how Bangladeshi women's perceptions of a method's attributes are associated with their intention to use that method.

**METHODS:** Data on 2,605 married women aged 15–39 living in rural Matlab were taken from a baseline survey conducted in 2016. Conditional logit analysis was used to examine associations between 12 method attributes and intention to use the pill or the injectable among the 583 fecund women not currently using a method. Method attributes included those relating to ease of obtainment and use, efficacy, health effects, husband's approval, the experiences of the respondent and the experiences of women in the respondent's social network.

**RESULTS:** Women tended to perceive the pill more positively than the injectable. For example, greater proportions of women reported believing that the pill is easy to use (90% vs. 72%) and does not cause serious health problems (75% vs. 38%). The likelihood that a woman intended to use a method was positively associated with her perception that it is easy to use (odds ratio, 2.9) and does not cause serious health problems (1.7) or affect long-term fertility (2.9). Satisfied past users of a method were more likely than never users to report intending to use the method (5.2). Intention to use the pill rather than the injectable was positively associated with education (2.0–3.6) and having a migrant husband (1.7).

**CONCLUSIONS:** Negative beliefs not supported by evidence, particularly about the injectable, are associated with women's intention to use a contraceptive method. The results may be useful in improving contraceptive care, counseling and training.

*International Perspectives on Sexual and Reproductive Health*, 2018, 44(4): 157–165, doi: <https://doi.org/10.1363/44e7118>

First published: July 30, 2019

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The freedom to choose a contraceptive method is a major element of women's reproductive rights and a key component of quality family planning services.<sup>1,2</sup> Method choice for couples and individuals may vary by their age, parity, family size preference and sociocultural setting, as well as by such other factors as advice from health providers.<sup>3,4</sup> Selection of a particular method is important, as contraceptive methods vary in efficacy, ease of use and convenience. Couples are not likely to use a method properly or consistently if, for instance, they perceive that it is unsafe or difficult to use, or that it causes unpleasant side effects.<sup>4</sup>

Couples should also take the role of the spouse into account when making a contraceptive choice.<sup>5</sup> Many women are separated from their husband for various lengths of time because of labor migration, which may affect their decision of which contraceptive is most appropriate for the couple.<sup>6</sup> Additionally, the attitudes of husbands about contraception generally and about individual methods specifically are important, because their attitudes have been shown to be associated with their spouse's decision-making process.<sup>7,8</sup> Both women and men may have false perceptions or unjustified fear that certain contraceptives

may damage their health.<sup>9,10</sup> Thus, to improve contraceptive counseling and information programs, it is essential to understand the considerations that factor into individuals' decisions or intentions to use a particular method.<sup>11</sup>

Despite decades of research on contraceptive method choice, no clear understanding has been reached on the reasons for widely varying method mixes in different populations or on the relative importance of the many factors that may underlie individuals' contraceptive choices. Most recent research has assessed the associations between method-specific use and the sociodemographic characteristics of women or couples, including fertility preferences,<sup>12–14</sup> whereas some has examined the influence of program-related factors, such as counseling,<sup>15–17</sup> or the role of social networks and partners.<sup>18,19</sup> However, with the exception of a few studies in the United States,<sup>20,21</sup> no research has sought to clarify how individuals' beliefs about and perceptions of specific methods are associated with method choice.

For this study, we drew on rarely available detailed data on women's views of each major contraceptive method, which were collected as part of the prospective study, Improving Measurement of Unintended Pregnancy and

Unmet Need for Family Planning, conducted in Bangladesh and Kenya.<sup>22</sup> Women's views regarding the positive and negative features of each available method may influence which method they choose, but demographic surveys—most notably those conducted by the Demographic and Health Survey (DHS) program—do not obtain this information. The data used in this study offer an exceptional opportunity to assess associations between a range of perceived contraceptive attributes and the intention of women currently not using a contraceptive to adopt either the pill or the injectable, which are the two methods that dominate both current use and intended use among women living in the Health and Demographic Surveillance System (HDSS) site in Matlab, Bangladesh—the setting for this study.<sup>23</sup>

## METHODS

### Study Setting

Matlab is a rural area located about 55 kilometers southeast of Dhaka, the capital of Bangladesh. The area is divided for health purposes into two parts—the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) service area and the government service area; in 2016, the total population of Matlab was more than 237,000, of which slightly more than half lived in the icddr,b service area.<sup>24</sup> Each service area is further divided into units: four in the icddr,b service area and three in the government service area.<sup>24,25</sup> The government service area has a total of 27 family welfare centers and community clinics that provide standard health and family planning services; in addition, one upazila health complex provides family planning services during regular office hours, as well as 24-hour emergency obstetric care. The icddr,b service area has four subcenter clinics, which are staffed by midwives and provide 24-hour obstetric services; each subcenter serves approximately 27,000 people.<sup>25</sup> In addition, the icddr,b service area has a hospital with a 30-bed maternity unit run by physicians and nurses, as well as family welfare centers and community clinics operated by the government.

Since 1966, icddr,b has been maintaining an HDSS site in Matlab. Community health research workers collect data on births, deaths, migration, marriages and divorces of household members in both service areas. Data are collected only from Matlab residents, defined as individuals living in the HDSS area permanently or continuously for at least six months. The monitoring system covers more than 237,000 residents in 142 villages.<sup>25</sup>

In the late 1970s, a maternal and child health and family planning program was launched in the icddr,b service area. This program distributes contraceptive methods to married women of reproductive age (15–49 years) through regular home visits. Female village health workers are trained to counsel clients about various contraceptive methods, provide the methods to the clients and refer them to nearby facilities, where clinical services were available.<sup>23</sup> While the range of available methods is the same in the icddr,b area as in the government area, contraceptive advice and services are provided more regularly in the icddr,b area; this may

be why contraceptive prevalence was higher in the icddr,b area than in the government service area in 2016 (49% vs. 39%).<sup>26</sup> As a result of employment migration, the prevalence is lower in both areas than the national prevalence (62%).<sup>24</sup> In the icddr,b service area in 2016, 38% of women who used contraceptives used the injectable and 29% used the pill;<sup>26</sup> in contrast, the pill was more commonly used than the injectable in the government service area (40% vs. 27%).

### Data

We used data from a baseline survey of a one-year prospective study among a cohort of randomly selected married women aged 15–39 living in the Matlab HDSS area; women older than 39 were not included because, according to the Bangladesh DHS, they have much lower fertility rates and engage in less sexual activity than younger women.<sup>24</sup> The desired sample size of 2,600 was based on the formula developed by Fleiss et al.<sup>27</sup> and was sufficient to detect a 30% difference in an outcome between two groups at a 95% confidence level and 80% power with an assumption of a 10% nonresponse rate. According to the Matlab HDSS database, as of December 2015, approximately 18,212 married women aged 15–39 lived in the icddr,b service area and 16,096 lived in the government service area. A random sample of 3,109 women was generated from the total list of 34,308 women; participants were replaced if age or marital status were inconsistent with the eligibility criteria.

Baseline data were collected from September to December 2016. Following a prescheduled visit plan, trained female field workers conducted face-to-face interviews in Bengali with eligible women, using structured paper-based questionnaires that took an average of 45 minutes to complete. Consistent efforts were made to find the selected women for interviews. A call-back schedule was implemented if a woman was not found in her home. If the woman was not located after three visits during the study period, she was considered not found and was not replaced. Women not interviewed from the random sample included 188 who had out-migrated; 181 who were not found after three visits; 121 who were ineligible; seven whose household could not be located, or who were temporarily away or had died; four who refused to participate in the study; and three who were incapacitated. In total, 2,605 women were successfully interviewed during the baseline data collection—1,433 from the icddr,b service area and 1,172 from the government service area.

All women provided written informed consent. The study was approved by the icddr,b Research Review Committee and Ethical Review Committee, and by the institutional review boards of the Population Council and the London School of Hygiene and Tropical Medicine.

### Measures

The questionnaire collected information on women's socio-demographic characteristics, reproduction, contraceptive use and fertility intentions; the full questionnaire is available online.<sup>28</sup> For this study, the outcome variable was whether

women intended to use a contraceptive method. Participants were asked whether they intended to do so in the next 12 months and whether they intended to do so at any time in the future. Response options were “Yes,” “No” and “Don’t know/unsure”; for analysis, the latter two responses were combined. Women responding positively were asked which method they intended to use. If more than one method was mentioned, women were probed to identify their preferred method. We categorized responses by “Pill,” “Injectable,” “Other modern method” and “Don’t know.”

The main independent variables were detailed measures of women’s perceptions of and attitudes about eight contraceptive methods (the pill, the injectable, the implant, the IUD, condoms, female sterilization, periodic abstinence and withdrawal). All women who had heard of the method—whether they were currently using the method, had used it in the past or had never used it—were asked about 12 method attributes, which were based, in part, on past research on determinants of contraceptive choice.<sup>29–31</sup> Obtaining the perceptions of all women, whatever their current and past contraceptive use, provides a basis for balanced assessment of the associations between the attributes and use status (use, nonuse, adoption and discontinuation).

Three of the attributes concerned method convenience and effectiveness. Ease of obtaining the method and ease of use were measured by asking women whether the method would be easy or hard to get and to use, respectively. In addition, efficacy was measured by a yes-or-no question of whether the method was “very effective at preventing pregnancy.”

Five attributes concerned method-related health effects. One item asked whether use of the method was likely to cause serious health problems; response options were “Yes, serious,” “Yes, not serious,” “No” and “Don’t know.” We categorized the responses as either “Yes, serious” or as any other response. Women were asked three yes-or-no questions about whether the method was likely to cause unpleasant side effects or interfere with regular menses, and if it could possibly impair fertility. Women were also asked whether it was safe to use the method for a long time or if one should take a break from time to time.

In addition, the questionnaire asked women about their husband’s or partner’s approval of the method; response options were “Approve,” “Disapprove,” “Disapprove of all the methods” and “Don’t know.” We categorized responses as either “Approve” or as any other response. Also, women were asked how many of their friends, relatives and neighbors had tried the method; response options were “Most,” “About half,” “Few,” “None” and “Don’t know.” We combined “Most,” “About half” and “Few” into one category, and “None” and “Don’t know” into another. Women who reported knowing someone who had used the method were asked that person’s level of satisfaction with the method; response options were “Satisfied,” “Dissatisfied,” “Mixed” and “Don’t know.” Responses were categorized for analysis as “Satisfied” or as “Dissatisfied/mixed/don’t know.” Finally, women were asked whether they had ever used the method in

the past. Those who reported past use were asked about their level of satisfaction; response options were “Used and satisfied,” “Used and dissatisfied,” “Mixed/neither” and “Never used.” Responses were categorized for analysis as “Used and satisfied,” “Used and dissatisfied/mixed/neither” or “Never used.” Other independent variables included study area (icddr, b or government), age-group (15–24 or 25–39), level of education (none/some primary, completed primary or completed secondary), current contraceptive use, childbearing preference, and whether the respondent’s husband was away from home. Answers for childbearing preference were categorized as “Wants soon/within two years/undecided,” “Wants to wait at least two years,” “Wants none/no more” or “Other.”

### Analysis

First, we used descriptive statistics to examine the characteristics of all women who were interviewed. Then, to assess the associations between the various method attributes and women’s contraceptive choice, we conducted regression analyses among the 583 women not currently using any method who reported being aware of both the pill and the injectable, and who reported intending to use either method; we confined the analyses to the pill and the injectable because they were the two most commonly used methods in the study population.

The regression analyses included women’s sociodemographic characteristics (residence, age, education, husband’s absence from home) and fertility preferences, in addition to the method-specific attributes. From a conceptual standpoint, the effects of respondent characteristics can be specified as effects on method versus method contrasts: for example, the association between a woman’s educational attainment and her choice of the pill rather than the injectable. In contrast, the effects of method attributes can be specified as a generic outcome on method choice: for example, whether the perceived risk of health problems (for the pill versus the injectable) is associated with the method a woman intends to adopt. Two method attributes were excluded from some analyses: Perceived method effectiveness was omitted from the regression analysis because nearly all women considered the injectable and the pill to be effective, and absence of unpleasant side effects was omitted from the adjusted model because of its high correlation with absence of serious health problems.

This mix of explanatory variables—respondent characteristics and method attributes—is difficult to incorporate in conventional logit modeling; thus, we used the conditional logit model developed by McFadden,<sup>32,33</sup> which has been employed previously in research on contraceptive choice.<sup>34,35</sup> Under this approach, the regression equation contains just one coefficient for the results of each contraceptive attribute and a set of coefficients for the results of each respondent characteristic. The latter are coefficients for each method difference, with one method selected as the reference category. The injectable serves as the reference category, so there is a set of coefficients for the effects of respondents’ characteristics

on the probability of intending to use the pill rather than the injectable; these coefficients are as determined in usual logit modeling. The coefficients for method-specific attributes are the special contribution of the McFadden conditional logit model. Estimation is via maximum likelihood as implemented in the Stata *clogit* procedure.

We used  $p < .05$  to indicate the statistical significance with 95% confidence intervals; all analyses were performed using Stata 13.0.

## RESULTS

### Descriptive Statistics

Of the women interviewed, 55% were from the icddr,b service area and 45% were from the government service area (Table 1). Three-fourths were aged 25–39 and one-fourth were 15–24. Thirty percent had less than a primary education, 58% had completed primary education and 12% had completed secondary education.

Fifty-six percent of women reported currently using a modern contraceptive method at baseline. The pill was the most commonly used method (25%), followed by the

injectable (18%), condoms (6%) and the implant (2%); some 5% were using other modern methods (i.e., the IUD or sterilization). Only 3% of women were using a traditional method, and 41% were not currently using any method. Nearly half of women (48%) reported wanting no more children. Among contraceptive nonusers, 37% wanted no more children; 18% wanted to delay childbearing for at least two years; and 40% wanted a child soon or within two years, or were unsure about their preferred timing. Overall, 37% of women reported that their husband was currently away from home. Among contraceptive nonusers, two-thirds indicated that their husband was currently away; of those, 82% reported that their husband had been absent for at least 12 months, which reflects the high rate of labor migration of men in this population. Among nonusers whose husband had been away for at least 12 months, 60% reported that he had come home at least once during the past 12 months, and 30% said that he had come home at least four times (not shown). Only 17% of current contraceptive users reported that their husband was currently away.

Ninety-five percent of contraceptive nonusers reported not being infertile or postmenopausal (Table 2). Of those, most (82%) indicated that they intended to use a contraceptive method. Half of those who reported contraceptive intentions preferred the pill, 21% preferred the injectable and 8% preferred another modern method; the remaining 20% were unsure about which method they preferred.

### Perceived Contraceptive Attributes

Among the contraceptive nonusers who reported being fecund, having heard of both the pill and the injectable, and intending to use one of those methods, the proportion who believed that the pill is easy to obtain was greater than the proportion who believed that the injectable is easy to obtain (97% vs. 89%; Table 3); similarly, the proportion who believed that the pill is easy to use was greater than the proportion who believed that

**TABLE 1. Percentage distribution of married women aged 15–39, Matlab, Bangladesh, 2016**

Characteristic	All (N=2,605)	Current contraceptive use	
		Yes (N=1,544)	No (N=1,061)
<b>Study area</b>			
Government	45.0	44.1	46.3
icddr,b	55.0	55.9	53.7
<b>Age</b>			
15–24	24.2	20.5	29.7
25–39	75.8	79.5	70.3
<b>Education</b>			
None/some primary	30.4	35.6	22.8
Completed primary	57.9	54.6	62.8
Completed secondary	11.7	9.8	14.4
<b>Current contraceptive method</b>			
Pill	25.4	42.8	na
Injectable	17.7	29.9	na
Implant	2.2	3.7	na
Condom	5.5	9.2	na
Other modern	5.4	9.1	na
Traditional	3.2	5.3	na
None	40.7	na	100.0
<b>Childbearing preference</b>			
Wants soon/wants within two years/undecided	25.0	14.7	40.0
Wants to wait $\geq 2$ years	19.5	20.9	17.5
Wants none/no more	48.1	55.8	37.0
Other†	7.4	8.7	5.5
<b>Husband currently away from home</b>			
Yes	37.0	17.0	66.3
No	63.0	83.0	33.7
<b>Husband away <math>\geq 12</math> months‡</b>			
Yes	82.1	81.7	82.2
No	17.9	18.3	17.8
Total	100.0	100.0	100.0

†Other responses include “sterilized,” “cannot get pregnant,” “other preference” and “not asked.”  
‡Among women who reported their husband was currently away. Notes: Percentages may not total 100.0 because of rounding. na=not applicable.

**TABLE 2. Percentage distribution of contraceptive nonusers, by selected characteristics**

Characteristic	% (N=1,061)
<b>Unable to become pregnant/postmenopausal</b>	
Yes	5.5
No	94.5
<b>Intends to use a method of contraception†</b>	
Yes	82.1
No/don't know	17.9
<b>Preferred method of contraception‡</b>	
Pill	51.2
Injectable	20.7
Other modern method	8.0
Don't know	20.1
Total	100.0

†Among 1,003 nonusers who did not report being either unable to become pregnant or postmenopausal. ‡Among 823 fecund nonusers who reported intending to use a method of contraception.

the injectable is easy to use (90% vs. 72%). Nearly all women (99–100%) believed that each method is effective at preventing pregnancy. In regard to health effects, greater proportions of women perceived that the pill, rather than the injectable, does not cause serious health problems (75% vs. 38%), does not interfere with menstruation (86% vs. 23%), does not cause unpleasant side effects (72% vs. 40%) and is safe to use for a long time without a break (73% vs. 65%); similar proportions believed that the pill and the injectable would not impair fertility (85–86%). The proportion of women who reported that their husband would approve of the method was 91% for the pill and only 70% for the injectable. Large proportions of women reported knowing someone in their social network who had used the pill and the injectable (93% and 86%, respectively); this difference was significant, as was the difference in the perceived level of satisfaction among pill and injectable users in their social network (97% vs. 90%). Finally, 65% of women had used the pill and were satisfied with the method, 14% had used it and were not satisfied and 21% had never used it; the proportions for the injectable were 25%, 15% and 60%, respectively—a significant difference.

#### Intention to Use the Pill or Injectable

In the unadjusted model of our conditional logit analyses assessing the associations between method attributes and women's intention to use either the pill or injectable (Table 4), all attributes were associated with method choice, with the exception of safety of prolonged use. Ease of use, husband's approval and respondent's satisfaction with past use of the method were the attributes most strongly associated with intention to use either the pill or injectable (odds ratios, 8.0–11.4). It is also worth noting that former pill and injectable users were more likely than women who had never used the method to indicate an intention to use the method, even if they expressed dissatisfaction with their past use (2.1).

In the adjusted model, however, only four method attributes remained associated with intention to use the pill or injectable. Women had elevated odds of intending to use a method if they perceived it to be easy to use (odds ratio, 2.9), not cause any serious health problems (1.7) and not affect long-term fertility (2.9). In addition, satisfied past users were more likely than never users to report intending to use the pill or injectable (5.2).

As for women's characteristics, the estimates show that women in the government service area were more likely than those in the icddr;b service area to intend to use the pill rather than the injectable (odds ratio, 1.8). Compared with women who had less than a primary education, women who had completed at least a primary education had higher odds of intending to use the pill rather than the injectable (2.0–3.6). In addition, women whose husband was currently away from home were more likely than others to prefer the pill (1.7).

**TABLE 3. Percentage of fecund contraceptive nonusers who reported knowing about both the injectable and the pill and intending to use one of those methods, by their perception that the methods have specific attributes**

Method attribute	Injectable (N=583)	Pill (N=583)	p
<b>Convenience/effectiveness</b>			
Easy to obtain	88.7	97.4	***
Effective at preventing pregnancy	98.5	99.5	
Easy to use	72.0	90.4	***
<b>Health effects</b>			
Absence of serious health problems	37.7	74.6	***
No interference with menstruation	23.3	85.9	***
Absence of unpleasant side effects	39.5	71.7	***
No long-term fertility impairment	84.7	85.6	
Safe for long-term use (without a break)	65.2	72.6	**
<b>Social</b>			
Husband approves of method	70.0	91.3	***
Knows friend/relative/neighbor who used method			***
Yes	85.6	92.8	
No	5.7	3.3	
Don't know	8.6	4.0	
Friend/relative/neighbor satisfied with method†	89.6	96.5	***
<b>Respondent</b>			
Past use and level of method satisfaction			***
Used and satisfied	25.4	65.0	
Used and dissatisfied/mixed/neither	14.7	13.7	
Never used	59.9	21.3	

\*\*p<.01. \*\*\*p<.001. †Among those who reported knowing someone who had used the method. Note: p-values were generated using the Pearson chi-square test.

#### DISCUSSION

The availability of a variety of safe, effective and affordable contraceptive methods is important for women and couples to make informed decisions on preventing unintended pregnancy and reducing unmet need for family planning;<sup>27</sup> however, the considerations that influence method choice are poorly understood in Bangladesh, as elsewhere, because detailed survey data on beliefs about specific methods were not available until recently.<sup>16</sup>

Two-fifths of the women in this study reported not currently using a contraceptive method. Given that two-thirds of these nonusers reported that their husbands were away and two-fifths reported that they wanted a child soon or were unsure of their preferred timing, women's main reasons for nonuse may have been temporary or long-term physical absence of their husband and the desire for a child; the finding that 82% of fecund nonusers reported intending to use a contraceptive corroborates this point. Moreover, among current nonusers who reported intending to use a method, half preferred the pill and one-fifth preferred the injectable. As current contraceptive usage among our overall sample was dominated by the pill and injectable (43% and 30%, respectively), intended use mirrored current use. As it is in many other populations, method mix is highly skewed among Bangladeshis and seems likely to remain so.

Nonusers had considerable past experience with contraceptives: More than three-quarters had used the pill, and 40% had used the injectable. Women's beliefs about the two methods were informed by personal experience.

**TABLE 4. Odds ratios (and 95% confidence intervals) from conditional logit regression analyses assessing women's likelihood of intending to use the pill or the injectable, by perceived method attributes, and women's likelihood of intending to use the pill rather than the injectable, by selected characteristics**

Method attribute/woman's characteristic	Unadjusted model	Adjusted model
<b>PILL OR INJECTABLE USE</b>		
Easy to obtain	3.9 (1.9–8.0)***	1.0 (0.4–2.6)
Easy to use	10.2 (5.9–17.8)***	2.9 (1.5–5.8)**
Absence of serious health problems	4.5 (3.1–6.5)***	1.7 (1.0–3.0)*
No interference with menstruation	1.4 (1.0–2.0)*	0.6 (0.4–1.0)
Absence of unpleasant side effects	3.5 (2.4–5.0)***	na
No long-term fertility impairment	2.2 (1.2–4.0)*	2.9 (1.1–7.3)*
Safe for long-time use without a break	1.4 (0.8–2.6)	0.6 (0.3–1.3)
Husband approves of method	8.0 (4.6–13.9)***	1.9 (0.9–3.8)
Knows friend/relative/neighbor who used method and was satisfied	3.0 (1.8–4.9)***	1.6 (0.8–3.2)
<b>Respondent past use/satisfaction</b>		
Never used (ref)	1.0	1.0
Used and satisfied	11.4 (7.2–18.0)***	5.2 (3.0–9.5)***
Used and dissatisfied/mixed/neither	2.1 (1.3–3.6)**	1.2 (0.6–2.1)
<b>PILL RATHER THAN INJECTABLE USE</b>		
<b>Study area</b>		
icddr,b (ref)	1.0	1.0
Government	1.6 (1.1–2.4)**	1.8 (1.1–2.9)*
<b>Age</b>		
15–24 (ref)	1.0	1.0
25–39	0.9 (0.6–1.3)	1.4 (0.8–2.5)
<b>Education</b>		
None/some primary (ref)	1.0	1.0
Completed primary	2.6 (1.7–3.9)***	2.0 (1.2–3.5)*
Completed secondary	6.1 (3.0–12.6)***	3.6 (1.4–8.8)**
<b>Childbearing preference</b>		
Wants none/no more (ref)	1.0	1.0
Wants soon/wants within two years/undecided	1.5 (0.9–2.4)	1.7 (0.9–3.0)
Wants to wait for $\geq 2$ years	1.5 (0.9–2.3)	1.4 (0.7–2.6)
<b>Husband currently away from home</b>		
No (ref)	1.0	1.0
Yes	1.9 (1.3–2.7)**	1.7 (1.0–2.8)*

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ . Notes: ref=reference group. na=not applicable. Adjusted model includes all measures except for "Absence of unpleasant side effects."

Satisfaction among past users was higher for the pill than for the injectable, and past users of a method—regardless of their satisfaction—were as likely or more likely than never users to prefer the same method in the future. Thus, women tended to prefer the familiar to the unknown when deciding what type of contraceptive they intended to use. This commitment to the familiar may act as a barrier to the government's aim of broadening women's use of different forms of contraception, such as long-acting reversible contraceptives, to encourage women to utilize the method that best suits their needs.<sup>36</sup>

In regard to other method attributes, three specific characteristics were associated with method choice: perceived ease of use and the beliefs that the method does not cause long-term fertility impairment or serious health problems. The proportion of women who believed the pill was easy to use was greater than that of women who believed the injectable was easy to use. This finding may seem counterintuitive, given that women must take the pill daily, whereas a single injection lasts for three months; however,

it may be explained by the effort required to visit a health facility for additional injections. By contrast, community health workers distribute pill packs during routine household visits. The results of this study confirm those of a previous study on the determinants of contraceptive method choice in Bangladesh, which found that women were most likely to take oral contraceptives because of their ease of use relative to other methods.<sup>29</sup>

The fear that contraceptives cause permanent infertility may be common in Sub-Saharan Africa,<sup>37–39</sup> but is perhaps less so in Asia. In this study, approximately 85% of women were not concerned that either the pill or the injectable might cause long-term fertility impairment; yet, long-term fertility impairment was found to be associated with method preference. A probable explanation for this finding is that even though the proportion of women who had such concerns about a particular method is small, those women did not want to use that method.

One of the largest differences in beliefs regarding the pill and the injectable concerned serious health problems: While three-quarters of women did not link the pill to serious health effects, only 38% did not do so for the injectable. This is concerning, as there is no scientific evidence to support the belief that either method causes serious issues. The explanation that irregularities in menses—which have been cited as a complaint of injectable users in other studies<sup>10</sup>—may deter women from selecting this method for use was not supported by this study; however, side effects were much more likely to be associated with the injectable than with the pill, and it is possible that this may lead to the misconceptions about long-term health effects of injectable use. Qualitative studies would be helpful to examine why Bangladeshi women are uncomfortable with the injectable.

Most women reported their husbands' approval of both methods, though a larger proportion reported their husbands' approval for the pill than for the injectable (91% vs 70%). The association between husband's approval and method choice was extremely large in the unadjusted model, but was not statistically significant in the multivariate model. In a previous study, the approval of both partners was important for the adoption of any contraceptive method.<sup>9</sup> We found modest differences in perceptions regarding ease of access, in favor of the pill.

A woman's family and friends have been associated with her decision to choose and adopt a particular method.<sup>18,40</sup> In this study, the majority of women—regardless of the method they intended to use—were aware of their friends' or relatives' satisfactory experiences with the pill and injectable. These favorable opinions regarding the methods may explain the surprising finding in the multivariate model that a woman's preference between the pill and the injectable was not always associated with their network's experiences with a method. This result is consistent with that from a similar study conducted in urban slums in Kenya, which found that perceptions about methods were derived in part from personal experience and in part from social networks.<sup>31</sup>

Approximately two-thirds of the women thought that both the pill and the injectable were safe for long-term use. This finding is particularly salient to Bangladesh, a country where early marriage is common, most couples want only two children and most childbearing is complete by age 25—leaving approximately two decades during which women and couples must prevent further pregnancies.<sup>24</sup> The belief that both methods are safe for long-term use is important to ensure that Bangladeshi women feel safe using contraceptives for extended periods of time.

In regard to women's characteristics, educated women were more likely than uneducated women to choose the pill rather than the injectable, a result also found in previous research in Bangladesh.<sup>9</sup> One possible explanation for this finding may be that providers are less inclined to recommend the pill to uneducated women. Previous research in Bangladesh has shown that providers believe that uneducated patients are more likely to fail to adhere to the daily medication regimen and, therefore, that the injectable would be more effective for them.<sup>9</sup>

In addition, the absence of their husband from the home was positively associated with women's choosing the pill rather than the injectable. It is worth noting that these women may not have been entirely free from pregnancy risk, as many who reported that their husband had been away for at least 12 months also reported that he had come home at least once during the past year. Because women perceive the pill to be easier to use than the injectable, they may choose the pill to accommodate return visits from their husband; in other words, they can start taking the pill when they know their husband is coming home. Furthermore, the duration of the effects of an injectable may be longer than the duration of a husband's visit. Also, qualitative research among Bangladeshi women has shown that a husband's migration patterns is associated with the couple's fertility intentions and contraceptive decision-making behavior.<sup>41</sup> Specifically, almost all wives of migrant workers reported contraceptive use, mostly such short-term methods as the pill and condoms. Counseling regarding the type of contraceptive and timing of short-term method use may be necessary in this population to account for women's menstrual cycle and short visits by husbands who are working elsewhere.

### Limitations

This study has several limitations. Because it is cross-sectional, we cannot prove causality. Also, we explored a limited number of contraceptive methods, and it is unknown if the findings are generalizable to other populations of women. In addition, we analyzed women's stated intentions about contraceptive choice rather than actual method use; to address this issue, in further analyses, we will investigate method use using a contraceptive calendar from a future follow-up interview.

Another limitation is the focus on short-acting contraceptives. Studying the full spectrum of contraceptive methods—including long-acting reversible and permanent

contraceptive methods—would likely provide additional insight. Long-acting methods are not popular among Bangladeshi women,<sup>42,43</sup> although they are among the most effective forms of family planning. Exploring the full range of options for women would help in understanding how to encourage them to adopt a method most appropriate for their fertility preferences and in addressing growing unmet need.<sup>3,22</sup>

### Conclusions

Women's perceptions of specific contraceptive methods is a neglected topic that has implications both for future method adoption and for the quality of women's lives, including improved spousal relationships.<sup>44</sup> This study utilized data on women's perceptions of specific attributes of contraceptive methods that are not collected as part of conventional fertility and family planning surveys (e.g., Demographic and Health Surveys) and has generated insights about method choice while also raising a number of questions that merit future research. Why, for instance, do so many women in Bangladesh hold negative views about the safety of the injectable, even though this method is commonly used? And what are the exact negative health outcomes they fear in using a particular form of contraception? Understanding these questions may help explain trends in the utilization of contraceptives beyond these two methods.

Information on the relationships between method attributes and women's method preference could be important for enhancements in quality of care and program planning and management, such as training.<sup>45</sup> Family planning staff and others responsible for contraceptive counseling and communication should be aware of erroneous beliefs about methods, particularly with regard to injectables, and explicitly address them.

Further assessment of the association between method-specific perceptions of contraceptives in Bangladesh—including method-specific uptake and method-specific discontinuation—will be conducted once follow-up survey data become available. Further research on contraceptive method preference and contraceptive use in Bangladesh may inform the development of effective services that enable individuals and couples to make reproductive choices that best suit their needs.

### REFERENCES

1. Bruce J, Fundamental elements of the quality of care: a simple framework, *Studies in Family Planning*, 1990, 21(2):61–91, doi:10.2307/1966669.
2. Díaz M et al., Expanding contraceptive choice: findings from Brazil, *Studies in Family Planning*, 1999, 30(1):1–16, doi:10.1111/j.1728-4465.1999.00001.x.
3. United Nations Population Fund, Programme of Action Adopted at the International Conference on Population and Development, 2004, [https://www.unfpa.org/sites/default/files/event-pdf/PoA\\_en.pdf](https://www.unfpa.org/sites/default/files/event-pdf/PoA_en.pdf).
4. Trussell J and Guthrie K, Choosing a contraceptive: efficacy, safety, and personal considerations, in: Hatcher RA et al.,

- Contraceptive Technology, 19th revised ed., New York: Ardent Media, 2007, pp. 19–47.
5. Islam MS, Determinants of contraceptive method choice in Bangladesh: male perspectives, *South East Asia Journal of Public Health*, 2013, 3(1):50–56, doi:10.3329/seajph.v3i1.17711.
  6. Ban B et al., Spousal separation and interpretation of contraceptive use and unmet need in rural Nepal, *International Perspectives on Sexual and Reproductive Health*, 2012, 38(1):43–47, doi:10.1363/3804312.
  7. Ross J et al., Contraceptive method choice in developing countries, *International Family Planning Perspectives*, 2002, 28(1):32–40, doi:10.2307/3088273.
  8. Biddlecom AE, Casterline JB and Perez AE, Spouses' views of contraception in the Philippines, *International Family Planning Perspectives*, 1997, 23(3):108–115, doi:10.2307/2950766.
  9. Khan M and Rahman M, *Determinants of Contraceptive Method-Choice in Rural Bangladesh*, Dhaka, Bangladesh: International Centre for Diarrhoeal Disease Research, Bangladesh (icddr), 1996.
  10. Kamal SM, Contraceptive use and method choice in urban slum of Bangladesh, paper presented at the International Conference on Family Planning: Research and Best Practices, Kampala, Uganda, Nov. 15–18, 2009.
  11. Huda FA et al., Contraceptive practices among married women of reproductive age in Bangladesh: a review of the evidence, *Reproductive Health*, 2017, 14(1):69, doi:10.1186/s12978-017-0333-2.
  12. Gubhaju B, The influence of wives' and husbands' education levels on contraceptive method choice in Nepal, 1996–2006, *International Perspectives on Sexual and Reproductive Health*, 2009, 35(4):176–185, doi:10.1363/3517609.
  13. Kamal SM, Socioeconomic factors associated with contraceptive use and method choice in urban slums of Bangladesh, *Asia-Pacific Journal of Public Health*, 2015, 27(2):NP2661–NP2676, doi:10.1177/1010539511421194.
  14. Gereltuya A, Falkingham J and Brown J, Determinants of current contraceptive use and method choice in Mongolia, *Journal of Biosocial Science*, 2007, 39(6):801–817, doi:10.1017/S0021932007002003.
  15. Baveja R et al., Evaluating contraceptive choice through the method-mix approach: An Indian Council of Medical Research (ICMR) task force study, *Contraception*, 2000, 61(2):113–119, doi:10.1016/S0010-7824(00)00089-5.
  16. Alden DL, Merz MY and Thi M, Patient decision-making preference and physician decision-making style for contraceptive method choice in an Asian culture: Does concordance matter? *Health Communication*, 2010, 25(8):718–725, doi:10.1080/10410236.2010.521915.
  17. Sapkota S, Rajbhandary R and Lohani S, The impact of balanced counseling on contraceptive method choice and determinants of long acting and reversible contraceptive continuation in Nepal, *Maternal and Child Health Journal*, 2017, 21(9):1713–1723, doi:10.1007/s10995-016-1920-5.
  18. Godley J, Kinship networks and contraceptive choice in Nang Rong, Thailand, *International Family Planning Perspectives*, 2001, 27(1):4–10 & 41, doi:10.2307/2673799.
  19. Kimuna SR and Adamchak DJ, Gender relations: husband-wife fertility and family planning decisions in Kenya, *Journal of Biosocial Science*, 2001, 33(1):13–23, doi:10.1017/S002193200100013X.
  20. Thorburn S, Attitudes toward contraceptive methods among African-American men and women: similarities and differences, *Women's Health Issues*, 2007, 17(1):29–36.
  21. Grady WR, Klepinger DH and Nelson-Wally A, Contraceptive characteristics: the perceptions and priorities of men and women, *Family Planning Perspectives*, 1999, 31(4):168–175.
  22. Machiyama K et al., Reasons for unmet need for family planning, with attention to the measurement of fertility preferences: protocol for a multi-site cohort study, *Reproductive Health*, 2017, 14(1):23, doi:10.1186/s12978-016-0268-z.
  23. Uganda Ministry of Health, Family Health International and U.S. Agency for International Development, *Community-Based Distribution of DMPA: The Matlab Project, Bangladesh*, 2007, No. 7, [https://www.k4health.org/sites/default/files/CBD%20of%20DMPA\\_Bangladesh\\_0.pdf](https://www.k4health.org/sites/default/files/CBD%20of%20DMPA_Bangladesh_0.pdf).
  24. National Institute of Population Research and Training (NIPORT), Mitra and Associates and ICF International, *Bangladesh Demographic and Health Survey 2014*, Dhaka, Bangladesh and Rockville, MD, USA: NIPORT, Mitra and Associates, and ICF International, 2016, <https://dhsprogram.com/pubs/pdf/FR311/FR311.pdf>.
  25. Rahman A et al., Effectiveness of an integrated approach to reduce perinatal mortality: recent experiences from Matlab, Bangladesh, *BMC Public Health*, 2011, 11(1):914, doi:10.1186/1471-2458-11-914.
  26. icddr, Health and Demographic Surveillance System–Matlab, volume fifty one, registration of health and demographic events 2016, *Scientific Report*, Dhaka, Bangladesh: icddr, 2018, No. 138, [http://dspace.icddr.org/jspui/bitstream/123456789/9061/2/SR%20138\\_HDSS%20AR2016%20Final\\_April23\\_2018.pdf](http://dspace.icddr.org/jspui/bitstream/123456789/9061/2/SR%20138_HDSS%20AR2016%20Final_April23_2018.pdf).
  27. Shah I, Comparative analysis of contraceptive method choice, paper presented at the Demographic and Health Surveys World Conference, Washington, DC, Aug. 5–7, 1991.
  28. Population Council, Strengthening Evidence for Programming on Unintended Pregnancy (STEP UP), 2006, [http://stepup.popcouncil.org/library/STEPUP\\_questionnaire\\_31072016.pdf](http://stepup.popcouncil.org/library/STEPUP_questionnaire_31072016.pdf).
  29. Mannan HR, Factors in contraceptive method choice in Bangladesh: goals, competence, evaluation and access, *Contraception*, 2002, 65(5):357–364, doi:10.1016/S0010-7824(01)00303-1.
  30. Mumah JN et al., Method-specific attributes that influence choice of future contraception among married women in Nairobi's informal settlements, *Studies in Family Planning*, 2018, 49(3):279–292, doi:10.1111/sifp.12070.
  31. Mumah JN et al., Contraceptive adoption, discontinuation, and switching among postpartum women in Nairobi's urban slums, *Studies in Family Planning*, 2015, 46(4):369–386, doi:10.1111/j.1728-4465.2015.00038.x.
  32. Greene WH, *Econometric Analysis*, eighth ed., New York: Pearson, 2017.
  33. McFadden D, Conditional logit analysis of qualitative choice behavior, in: Zarembka P, ed., *Frontiers in Econometrics*, New York: Academic Press, 1974.
  34. Agyei-Baffour P, Boahemaa MY and Addy EA, Contraceptive preferences and use among auto artisanal workers in the informal sector of Kumasi, Ghana: a discrete choice experiment, *Reproductive Health*, 2015, 12(1):32, doi:10.1186/s12978-015-0022-y.
  35. Delavande A, Pill, patch, or shot? Subjective expectations and birth control choice, *International Economic Review*, 2008, 49(3):999–1042, doi:10.1111/j.1468-2354.2008.00504.x.
  36. Directorate General of Family Planning, Bangladesh, *Bangladesh National Strategy 2011–2016: Improving the Uptake of Long-Acting and Permanent Methods in the Family Planning Program*, Dhaka, Bangladesh: EngenderHealth, 2011.
  37. Sedlander E et al., “They destroy the reproductive system”: exploring the belief that modern contraceptive use causes infertility, *Studies in Family Planning*, 2018, 49(4):345–365, doi:10.1111/sifp.12076.
  38. Blackstone SR, Nwaozuru U and Iwelunmor J, Factors influencing contraceptive use in Sub-Saharan Africa: a systematic review, *International Quarterly of Community Health Education*, 2017, 37(2):79–91, <https://doi.org/10.1177/0272684X16685254>.
  39. Bongaarts J, The effect of contraception on fertility: Is Sub-Saharan Africa different? *Demographic Research*, 2017, 37(6):129–146, <https://www.demographic-research.org/volumes/vol37/6/37-6.pdf>.



40. Kohler H-P, Learning in social networks and contraceptive choice, *Demography*, 1997, 34(3):369–383, doi:10.2307/3038290.

41. Khan R et al., The men are away: pregnancy risk and family planning needs among women with a migrant husband in Barisal, Bangladesh, *DHS Further Analysis Reports*, Dhaka, Bangladesh: icddr,b; and Rockville, MD, USA: ICF International, 2016, No. 98, <https://dhsprogram.com/pubs/pdf/FA98/FA98.pdf>.

42. Machiyama K et al., Women's attitudes and beliefs towards specific contraceptive methods in Bangladesh and Kenya, *Reproductive Health*, 2018, 15(1):75, doi:10.1186/s12978-018-0514-7.

43. Wickstrom J and Jacobstein R, Contraceptive security: incomplete without long-acting and permanent methods of family planning, *Studies in Family Planning*, 2011, 42(4):291–298, doi:10.1111/j.1728-4465.2011.00292.x.

44. Henry RR, *Contraceptive Practice in Quirino Province, Philippines: Experiences of Side Effects*, Calverton, MD, USA, and Manila, Philippines: Macro International and University of the Philippines, Population Institute, 2001, [https://pdf.usaid.gov/pdf\\_docs/PNACM416.pdf](https://pdf.usaid.gov/pdf_docs/PNACM416.pdf).

45. Magadi MA and Curtis SL, Trends and determinants of contraceptive method choice in Kenya, *Studies in Family Planning*, 2003, 34(3):149–159, doi:10.1111/j.1728-4465.2003.00149.x.

## RESUMEN

**Contexto:** En muchos países, incluido Bangladesh, los factores en los que se basa la selección del método anticonceptivo son poco comprendidos. Es importante entender la forma en que las percepciones de las mujeres bangladesíes con respecto a los atributos de un método determinado se asocian con su intención de usar ese método.

**Métodos:** A partir de una encuesta de línea de base llevada a cabo en 2016, se tomaron datos de 2,605 mujeres casadas, de 15 a 39 años, que vivían en Matlab rural. Se utilizó análisis Logit condicional para examinar las asociaciones entre 12 atributos del método y la intención de 583 mujeres fecundas, que no estaban usando un método, de usar la píldora o el inyectable. Los atributos del método incluían los relacionados con la facilidad de obtención y uso, la eficacia, los efectos sobre la salud, la aprobación del esposo, las experiencias de las encuestadas y las experiencias de las mujeres expresadas en las redes sociales de las encuestadas.

**Resultados:** Las mujeres mostraron una tendencia a percibir la píldora de manera más positiva que el inyectable. Por ejemplo, una mayor proporción de mujeres reportó que consideraba la píldora como un método fácil de usar (90% vs. 72%) y que no causa problemas de salud graves (75% vs. 38%). La probabilidad de que una mujer intentara usar un método se asoció positivamente con su percepción de que es fácil de usar (razón de probabilidades, 2,9), que no causa problemas de salud graves (1,7) o que no afecta la fecundidad a largo plazo (2,9). Las usuarias satisfechas que ya habían usado un método fueron más propensas que las que nunca habían sido usuarias a informar que intentaban usar el método (5,2). La intención de usar la píldora en lugar del inyectable se asoció positivamente con el grado de escolaridad (2,0–3,6) y con el hecho de tener un esposo migrante (1,7).

**Conclusiones:** Las creencias negativas no respaldadas por evidencia, particularmente sobre el inyectable, están asociadas con la intención de las mujeres de usar un método anticonceptivo. Los resultados pueden ser útiles para mejorar

la calidad de la atención anticonceptiva, la consejería y la capacitación.

## RÉSUMÉ

**Contexte:** Les facteurs à la base du choix de méthode contraceptive sont mal compris dans de nombreux pays, notamment au Bangladesh. Il importe de cerner en quoi l'idée que se font les Bangladaises des propriétés d'une méthode sont associées à leur intention de pratiquer cette méthode.

**Méthodes:** Les données relatives à 2 605 femmes mariées âgées de 15 à 39 ans et vivant dans les milieux ruraux de Matlab ont été obtenues d'une enquête de référence menée en 2016. Les associations entre 12 propriétés de méthode et l'intention d'utiliser la pilule ou le contraceptif injectable parmi les 583 femmes fécondes qui ne pratiquaient alors aucune méthode ont été examinées par analyse logit conditionnelle. Les propriétés des méthodes considérées étaient la facilité d'obtention et d'emploi, l'efficacité, les effets sur la santé, l'approbation du mari, l'expérience de la répondante et celle des femmes membres du réseau social de la répondante.

**Résultats:** Les femmes tendaient à percevoir la pilule de manière plus positive que l'injectable. Par exemple, de plus grandes proportions de femmes ont déclaré croire que la pilule est facile à utiliser (90% par rapport à 72%) et qu'elle ne cause pas de problèmes de santé graves (75% par rapport à 38%). La probabilité qu'une femme ait l'intention d'utiliser une méthode s'est avérée associée positivement à sa perception de la facilité de son emploi (RC, 2,9) et d'absence d'effets secondaires graves pour la santé (1,7) ou d'effet sur sa fécondité à long terme (2,9). Les anciennes utilisatrices satisfaites d'une méthode se sont révélées plus susceptibles que les femmes qui ne l'avaient jamais pratiquée de déclarer avoir l'intention de l'utiliser (5,2). L'intention d'utiliser la pilule plutôt que l'injectable présente une association positive avec le niveau d'éducation (2,0–3,6) et avec le fait d'avoir un mari migrant (1,7).

**Conclusions:** Des croyances négatives non avérées, concernant en particulier le contraceptif injectable, sont associées à l'intention des femmes de pratiquer une méthode contraceptive. Les résultats peuvent être utiles à l'amélioration de la qualité des soins, du conseil et de la formation en matière de contraception.

## Acknowledgments

The study is part of the STEP UP (Strengthening Evidence for Programming on Unintended Pregnancy) project (grant SR1111D-6), which was funded by the United Kingdom's Department for International Development and carried out by the International Centre for Diarrhoeal Disease Research in collaboration with the London School of Hygiene and Tropical Medicine, the African Population and Health Research Center, the Population Council and Ohio State University (NIH award P2C-HD058484). The authors acknowledge the contributions of the Matlab Health and Demographic Surveillance System team.

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