

Gender Differences in Perceived Benefits of and Barriers to Use of Modern Contraceptive Methods in Rural Malawi

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CONTEXT: *Despite the extensive literature on women's perceptions about contraceptive methods, distinctions between specific methods have rarely been investigated, men have often been excluded and comparable data for contraceptive users and nonusers have typically not been collected. The lack of such information may limit family planning programs' effectiveness.*

METHODS: *Cross-sectional survey data from 1,162 women and 621 men were used to examine perceived barriers to and facilitators of use of contraceptive methods (the pill, injectable, subdermal implant, IUD and male condoms). Conditional logit regression analysis was used to examine associations between 13 method-specific perceptions and respondents' preference to use the male condom, injectable or implant among a subsample of 603 women and 295 men.*

RESULTS: *Men's and women's perceptions differed the most with regard to side effects, sexual pleasure and partner support. The likelihood that a woman preferred to use a method was positively associated with her perception that it does not have side effects, has a desired influence on menstruation, has no impact on conceiving a future pregnancy, is easy to use covertly and was recommended by a friend (odds ratios, 1.3–1.7). The likelihood that a man preferred a method was positively associated with his perception that it has a desired influence on his partner's menstruation (1.7) and that his partner is very supportive of its use (2.1).*

CONCLUSIONS: *Family planning programs and health care providers should engage with both women and men to counteract misperceptions or negative beliefs about contraceptive methods, and should work to provide accurate information to couples.*

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Approximately 214 million women in low-income countries have an unmet need for modern contraception,¹ a situation that contributes to millions of unintended pregnancies, and thousands of maternal and neonatal deaths per year.^{2,3} When their contraceptive needs are met, women are at reduced risk for the negative health, social and economic consequences associated with unintended pregnancy, most notably maternal and infant death.^{2,4,5} Family planning policies and programs can help women be able to meet their contraceptive needs by promoting the benefits of modern contraceptives and removing barriers to their use.^{6,7}

Individuals' perceptions about contraception may act as barriers to contraceptive uptake or may lead to discontinuation; however, they can also motivate women to seek out contraceptive services, continue to practice contraception or switch methods.^{8–11} For example, a woman may fear the perceived side effects of a particular method and may instead choose a method that she believes to be less harmful. The already extensive literature on perceived barriers to and benefits of contraceptive use continues to expand as practitioners and researchers seek to understand why couples do not practice contraception, even when they do not want a pregnancy. Commonly reported themes around barriers include a lack of knowledge;^{8,11,12}

poor service quality;^{8,11,13} negative social, cultural and moral norms;^{12–15} fear of side effects and health concerns, including infertility;^{8,10,13–21} social stigma;^{11,20} and partner's disapproval.^{8–10,12,13,17,22,23} Facilitators of contraceptive use often include social approval and support,^{24–26} the ability to practice contraception covertly^{13,14,20,27} and perceptions of improved maternal health.^{22,23}

Despite this extensive literature, several prominent methodological gaps have limited research on how programs can reduce barriers to and promote the benefits of contraception. First, most of the studies mentioned above examined perceived barriers to and facilitators of contraceptive use broadly, without distinguishing between specific methods. Some considered method-specific barriers related to side effects and health concerns,^{15,17,19,21} but only a few explored differences in perceptions on a range of factors by method.^{28,29} After examining several dimensions of method-specific beliefs in Bangladesh and Kenya, including access, effectiveness, side effects, safety and social approval, Machiyama and coauthors concluded that concerns about side effects and infertility are similar across methods.²⁸ Likewise, Huda and colleagues considered a number of method-specific perceptions among married women in Bangladesh and found that ease of use, a lack

of health problems and the influence on long-term fertility were significant factors in whether women intended to use a method.²⁹

The inability of most previous research to distinguish between methods is a limitation that may have resulted in overgeneralization concerning barriers. For example, the concept of “male disapproval” may be overbroad, if a woman’s male partner disapproves of condoms but not of the IUD or implant. In addition, studies often rely on self-reported reasons for contraceptive nonuse. As a result, such studies lack comparable data for contraceptive users who may have faced barriers similar to those reported by the nonusers,³⁰ but who persevered and used a method despite these barriers.

Even though everyone understands the value and influence of men’s desires on women’s contraceptive use, men are rarely included in quantitative studies. Qualitative studies have found that men hold a range of misconceptions about specific methods, such as that male sterilization causes decreased sexual libido and oral contraceptives cause infertility.^{13,19} But such studies, while helpful in understanding context, fail to systematically document men’s beliefs and assess whether their perceptions influence contraceptive behaviors. As a result, we know very little at the population level about men’s perceptions and misperceptions of contraception, men’s reasons for use or nonuse, men’s concerns about specific methods or the characteristics of contraception that men value. In addition, because existing knowledge of method-specific barriers and facilitators disproportionately relies on qualitative studies,^{13,15,16,18,22} it is difficult to assess the extent and influence of these factors at the population level.

Finally, an understanding of the relative importance of the myriad perceived barriers and benefits to practicing contraception on contraceptive preferences is limited. Two similar studies conducted in Bangladesh and Kenya assessed how method-specific perceptions predict intention to use a method. One found that among Bangladeshi women, the intention to use a method was positively associated with perceptions that the method was easy to use and did not cause serious health problems or affect long-term fertility;²⁹ the other showed that among Kenyan women, the intention to use a method was positively associated with whether members of a woman’s social network had tried the method and with perceptions that it did not interfere with menses and that her partner approves of the method.³¹ These studies highlight how the relative importance of perceptions of method choice varies by context. Yet current research tends to focus on the associations between women’s sociodemographic characteristics and method-specific use.³²

Although contraceptive use is steadily increasing across Malawi, where this study is set, levels of unmet need for contraception remain high. Modern contraceptive prevalence among all women rose from 33% in 2010 to 45% in 2015–2016;³³ still, 19% of married women and 40% of unmarried women had an unmet need for any method of

contraception in 2015–2016. Unintended childbearing has remained fairly stable and even increased slightly over the last 25 years. A range of modern contraceptives—barrier, hormonal and nonhormonal methods—are available and are used by women and couples. Approximately 95% of public-sector facilities provide at least two modern methods of contraception,³⁴ and 79% of all modern contraceptive users obtain their methods from the public sector.³³ Further, all available contraceptive methods are free at public facilities. According to data from the 2015–2016 Malawi Demographic and Health Survey, the most common method among users of modern contraceptives was the injectable (50%), followed by the implant (20%), female sterilization (18%), the male condom (6%), the pill (4%) and the IUD (2%).³³

In this study, we address gaps in the literature by presenting survey data on perceived method-specific barriers to and facilitators of modern contraceptive method use among women and men living in rural Malawi. This research aims to document and describe the perceived barriers to and facilitators of five contraceptive methods (male condoms, the pill, the injectable, the subdermal implant and the IUD);* examine differences in perceptions between women and men; and assess the relationship between method-specific perceptions and preference for a method.

METHODS

Study Setting

Umoyo Wa Thanzi (UTHA), which stands for “Health for Life,” is a collaborative multidisciplinary project designed to facilitate research activities and the development of community-based interventions to improve the health of rural Malawians living in Lilongwe District. The UTHA Cohort Study was developed to test clinical and community-based interventions to respond to the health needs of the men and women living in rural Malawi. Five waves of the cohort study have been conducted, and the study described in this article uses data from the fourth.

Similar to other districts across Malawi, most residents in rural Lilongwe District are subsistence farmers,³⁵ and many have low levels of educational attainment and wealth.³⁶ Most residents identify as Christians and as Chewa (the largest ethnic group in Malawi), and speak Chichewa.³⁵ Population growth in rural Lilongwe District is similar to that in Malawi’s Central Region as a whole, but the district has a greater population density than other districts in the Central Region.

UTHA Cohort Study

Wave 1 of the survey was conducted during summer 2013. Hospital staff completed a census of the hospital’s catchment area by enumerating all households. The sampling frame of the Wave 1 survey consisted of clusters of

*We focused on these because they are the five most commonly used nonpermanent methods in Malawi; sterilization was excluded because many questions about perceptions were not applicable to that method.

50–250 households created from the information gleaned in this census. The research team stratified clusters by rural locations, plantations and trading centers; small villages were combined into a single cluster, and larger trading centers were split into multiple clusters. The research team used stratified cluster sampling to draw a sample of village clusters from the sampling frame. Clusters were randomly sampled from within each stratum until approximately 1,000 households were included.

All women of reproductive age (15–39) living in the randomly sampled clusters and able to provide informed consent were eligible for participation in Wave 1. Women aged 40 and older were excluded so that study participants would still be within the traditional definition of reproductive age (i.e., 15–49) at subsequent waves of data collection. Men were eligible for participation if they were currently partnered (i.e., married, cohabiting or in a sexual relationship) with a female participant. In total, 1,034 women and 441 of their male partners participated in Wave 1. Male participants were only tracked over time if they participated in Wave 1.

Wave 4 of the survey was carried out between October 2017 and April 2018. All women who participated in the Wave 1 survey were invited to participate. They were eligible if they lived within the study catchment area and were able to provide informed consent. In total, 785 women who were members of the original cohort participated in Wave 4. To supplement this group,† we invited women who had been not enrolled in the cohort to participate if they were aged 15–39, lived within an originally sampled cluster and were able to provide informed consent. A total of 377 new female participants were recruited.

All men who had participated in a previous wave were invited to participate in the Wave 4 survey. They were eligible for participation if they lived within a sampled cluster in the study catchment area and were able to provide informed consent. In total, 378 previous participants were part of Wave 4. In addition, 243 new male participants were recruited for Wave 4, if they were partnered with a female participant and were able to provide informed consent (these men could be of any age) or if they were aged 18–60, lived within an originally sampled cluster and were able to provide informed consent. (Thus, a man in our sample could have been currently partnered, previously partnered or not partnered with a woman in our sample.)

In total, 1,783 people (1,162 women and 621 men) took part in the Wave 4 survey, including 461 couple dyads. Our clustered randomized sample is representative of the catchment area from which it was drawn.

Data Collection

The questionnaire was developed through literature review and consultation with experts in the field of family planning; it was also informed by formative

†Enrollment into the cohort was opened to accommodate an influx of women and men moving into the area, and with input from local village chiefs, who desired participation to be open to new residents.

‡At the midpoint of the survey period, US\$1=719 MWK.

qualitative interviews conducted as a part of the UTHA Wave 1 survey development. We pretested the questionnaire in two phases. In 2016, it was piloted with the Malawian research team and with members of villages outside the study catchment area, and questions were refined as a result. These questions were then included as a part of the UTHA Wave 3 survey, which was conducted between October 2016 and April 2017. The resulting data were analyzed, and questions were further revised, in consultation with Malawian colleagues. The final questions were translated using a modified version of Brislin's translation method,³⁷ to ensure measurement and content equivalence, as well as semantic and cultural appropriateness.

Trained Malawian research assistants approached all previously enrolled participants at their homes and in the villages listed on their original UTHA Wave 1 locator forms. If participants had moved to a new village within the study catchment area, research assistants located them in their new village. For new participants, the research assistants approached all households located within study villages and screened household members for eligibility. The research assistants informed eligible men and women about the details of the study using an information sheet and an informed consent form. Parental permission was required for unmarried adolescents aged 15–17; married adolescents were considered emancipated minors and did not need parental permission.

Once a participant was determined to be eligible and had consented to participate, the research assistant conducted the interview in private in or near the respondent's home. Interviews were conducted in Chichewa and lasted approximately one hour. Participants received 1,000 Malawian Kwacha (MWK)—equivalent to approximately US \$1.50—for completing the questionnaire.‡ The institutional review boards at The Ohio State University and the University of Malawi College of Medicine approved the study.

Measures

• *Outcome.* The primary outcome was the preference for a contraceptive method. Respondents were asked, "If you could choose any family planning method you wanted, which method would you choose, now or in the future, if any?" Response options were injectable, implant, pill, IUD, female sterilization, male condom, female condom, lactational amenorrhea, other modern method, traditional method or none. In the regression analysis, we focused on preference for the male condom (coded 0), injectable (coded 1) and implant (coded 2).

• *Barriers and facilitators.* The primary independent variables were measures of respondents' perceptions of barriers and facilitators to five types of contraceptive—the male condom, pill, injectable, implant and IUD—through a standardized set of 14 questions about each method. To ensure that participants were asked only about methods that they were aware of prior to being interviewed, enumerators described each method and then asked,

“Have you heard of [the method] before this conversation?” In the pilot testing, we found that since methods are often called by different names (e.g., IUD, IUCD, loop, coil), the description helped orient participants to the correct method of interest.

If the respondent said “yes,” then enumerators asked the following set of 13 method-specific items: Would the participant be very, somewhat or not comfortable telling a friend about the method; is the method very easy, somewhat easy, somewhat hard or very hard to obtain; is the method very easy, somewhat easy, somewhat hard or very hard to use; would the method be very easy, somewhat easy, somewhat hard or very hard to use without anyone finding out; is the method considered very effective, somewhat effective, somewhat ineffective or very ineffective at preventing pregnancy; if they or their partner used the method, did they think they would experience no side effects, minor side effects or serious side effects; did they think that the method would have a desired effect, an undesired effect or no effect on a woman’s menstruation; would the method interfere with a woman’s conceiving a pregnancy in the future or have no impact on this; would the method enhance or interfere with the woman’s sexual satisfaction; would the method enhance or interfere with the man’s sexual satisfaction; would they be very comfortable, somewhat comfortable, somewhat uncomfortable or very uncomfortable telling a good friend that they used the method; if they decided to use this method, would their partner/spouse likely be very supportive, somewhat supportive, somewhat unsupportive or very unsupportive;§ and had a friend ever recommended the use of this method to them?

We also measured perceptions about contraception generally to understand people’s preferences for attributes of contraception. These attributes are similar to the items that we asked about in the method-specific question sets and were developed and pretested in a similar fashion. We asked participants, “Imagine that you are making a decision about what type of contraceptive method to use. I am going to read a list of features that may be important to you in making your decision. Please let me know which feature is important.” Research assistants read response options aloud, and respondents could choose all that applied. Response options were highly effective at preventing pregnancy, very low risk of harming health, very little effect on monthly menstruation, easy to use, easy to obtain, can be used without anyone knowing or finding out, can be used for a long period of time without

§The phrasing for this question was adjusted for the participant’s perspective regarding contraceptive use. For example, for the IUD, if the participant was female, the question was phrased “If you decided you wanted to use the IUD, would your partner be supportive of this decision?”; if the participant was male, the question was phrased “If you decided you wanted your partner to use the IUD, would your partner be supportive of this decision?” Similarly, with condoms, the question for women was phrased as: “If you decided you wanted your husband to use male condoms, would your husband be supportive of this decision?”

resupply or a visit to the health clinic, partner approves of the method, a friend or family member has used the method and very low impact on sexual satisfaction. Respondents could also respond “none.”

•*Demographic and control variables.* Age, marital status, pregnancy desire, number of living children and ever-use of modern contraception were included as covariates in the multivariate regression models. Age was measured as a continuous variable in years. Marital status was a binary variable indicating whether the participant was currently married or not. Pregnancy desire was a four-level categorical variable indicating the preferred timing of a pregnancy (desires pregnancy within two years, desires pregnancy after two years, desires no more pregnancies and undecided). Number of living children was a continuous variable. Ever-use of a modern contraceptive was a binary variable indicating whether the participant had ever used a modern method of contraception (i.e., injectable, implant, pill, IUD, sterilization, condom or another modern method).

Data Analysis

We used descriptive statistics to understand the characteristics of the women and men in the study sample. Chi-square tests were used to assess statistical differences in perceptions among women and men. To test the equality of the proportion of selected characteristics of women versus men, we used a two-sample test of proportions. Standard errors were clustered at the village level to account for possible correlated unobservable factors. We assumed a common known intraclass correlation of 0.02.

Next, we conducted a multivariate regression analysis to assess the relationship between method-specific perceptions and a preference for one of the three methods that were commonly used in this context (the male condom, injectable or implant), with separate models for women and men. The IUD and the pill were excluded from the analysis because fewer than 50 respondents said they preferred to use these methods. We limited the multivariate analysis to participants with full information who had heard about all three methods (603 women and 295 men).

We used the conditional logit model, a method for analyzing discrete choice, to assess the relationship between a perception and the probability of respondents’ preferring a particular contraceptive method.³⁸ We also estimated the relationship between selected demographic characteristics—age, marital status, pregnancy desire, ever-use of modern contraception and number of living children—and preference for the injectable, implant or condom. Standard errors were clustered at the village level to account for possible correlated unobservable factors, and statistical significance was set at $p < .05$, with 95% confidence intervals. Finally, we conducted separate models for men and women, with the intention of understanding the magnitude of the influence

of perceptions on method preference by gender. We wanted to draw comparisons between men and women, rather than understand the overall relationship, taking into account the fact that gender may be related to the outcome. Data analysis was conducted using Stata SE version 15.

RESULTS

Background Characteristics

On average, women were 27.7 years of age and men were 31.9 (Table 1). Most participants were of low socioeconomic status, with 67% of men and 69% of women reporting a monthly income of less than 20,000 MWK; few (18% of men and 13% of women) had more than a primary education. The majority of women and men were currently married (78% and 83%, respectively). Thirty-one percent of women and 33% of men reported having four or more children. More than one-third of women and men currently wanted to delay pregnancy, and about 30% currently desired to limit pregnancy (not shown).

Current modern contraceptive use was high: Sixty-eight percent of women and 74% of men reported currently using a modern method (Table 1). The most commonly used method in both groups was the injectable (33% of women and 30% of men), followed by the implant (19–20%) and female sterilization (11–12%). The vast majority of women and men said they had ever used a modern contraceptive method (92% and 97%, respectively).

In general, the majority of women and men in our sample had heard about the male condom (87% and 94%), injectable (94% and 91%), implant (84% and 78%), pill (75% and 66%) and IUD (59% and 42%). However, on average, a greater proportion of women had heard about female-controlled methods (78% vs. 70%), while a greater proportion of men had heard about male condoms (94% vs. 87%).

Most women and men in our sample preferred to use a modern contraceptive method (93–94%), as compared with a traditional method (<1% for both) or no method (3–4%). The most preferred method among both women and men was the implant (40% and 33%, respectively), followed by the injectable (32% and 26%).

General Perceptions About Contraceptives

The vast majority of women and men considered effectiveness in preventing pregnancy, ease of using the method, ease of obtaining the method and low risk to health to be important attributes to consider when choosing a contraceptive method (89–95%; Table 2). Although the basic pattern applied among both women and men, there were several important gender differences in the endorsement of method attributes as “important.” A greater proportion of women than men considered a method’s influence on monthly menstruation as important (87% vs. 58%). On the other hand, a greater proportion of men considered having few side effects to be important (86% vs. 71%).

TABLE 1. Selected characteristics of Malawian women and men, Umoyo wa Thanzi Wave 4 survey, 2017–2018

Characteristics	Men (N=621)	Women (N=1,162)
DEMOGRAPHIC		
Mean age	31.9	27.7
Education		
No school	6.4	11.2
Some primary	64.1	65.1
Primary completed	11.3	10.6
Some secondary	11.1	9.5
Secondary completed	6.0	3.4
More than secondary	0.8	0.0
Don't know/no answer	0.3	0.3
Monthly household income (in MWK)		
≤4,999	19.5	35.0
5,000–19,999	46.8	34.0
20,000–39,999	18.7	10.6
40,000–99,999	7.3	4.2
≥100,000	2.3	2.5
Don't know/no answer	5.5	13.6
Marital status		
Married	82.9	77.8
Single	16.9	21.9
Information missing	0.2	0.3
No. of living children		
0	16.9	13.4
1	12.5	19.3
2	19.0	19.1
3	17.3	16.7
≥4	32.8	30.7
Don't know/no answer	1.6	0.8
CONTRACEPTIVE		
Current modern method use		
None	19.0	23.9
Injectable	29.8	32.7
Implant	20.3	18.8
Pill	1.3	1.5
IUD	0.5	0.2
Male condom	9.8	3.5
Female sterilization	12.2	11.0
Don't know/no answer	7.1	8.4
Ever used a modern method		
Never used	3.4	8.3
Injectable	59.8	62.6
Implant	30.2	27.2
Pill	20.3	15.8
IUD	1.8	0.4
Male condom	62.9	42.6
Female sterilization	4.2	2.1
Ever heard of a modern method		
Male condom	94.4	86.8
Injectable	90.8	93.5
Implant	78.4	83.8
Pill	65.9	75.0
IUD	42.3	58.7
Preferred contraceptive method		
No method	3.2	4.2
Injectable	26.3	31.7
Implant	32.5	40.1
Pill	1.3	2.8
IUD	1.1	1.0
Female sterilization	21.1	16.2
Male condom	11.0	2.3
Traditional method	0.2	0.5
Don't know/no answer	3.4	1.2

Notes: All figures are percentages unless otherwise stated. MWK=Malawian kwacha. At the midpoint of the study period, US\$1=719 MWK.

TABLE 2. Percentage of participants who considered contraceptive attributes to be important when choosing a method, by gender; and difference between genders

Attribute	All (N=1,782†)	Men (N=620†)	Women (N=1,162)	Difference
Highly effective in preventing pregnancy	95.4	94.8	95.7	-0.9
Easy to use	91.8	91.1	92.1	-1.0
Easy to obtain	90.7	90.3	90.9	-0.6
Very low risk of harming health	89.3	89.0	89.5	-0.5
Partner approves of the method	85.9	86.6	85.5	1.1
Can be used for a long time without resupply	79.1	79.2	79.0	0.2
Very little effect on monthly menstruation	76.7	57.6	86.8	-29.2***
Very few unpleasant side effects	76.2	85.5	71.2	14.3***
Very low impact on sexual satisfaction	55.9	53.2	57.3	-4.1
Can be used without anyone knowing	50.8	49.5	51.5	-2.0
Friend or family member has used the method	32.4	31.5	32.9	-1.4
Total average no. of attributes endorsed	8.2	8.1	8.3	-0.2‡

*** $p < .001$. †Missing responses from one male participant. ‡Mean difference is significantly less than zero, $p < .05$.

Finally, compared with women, men endorsed an average of 0.2 fewer method attributes as important when considering a contraceptive.

Method-Specific Perceptions

We found large gender differences across all five contraceptive methods regarding perceptions that a method causes unpleasant side effects, influences women's sexual pleasure, influences men's sexual pleasure and is supported by the participant's partner (Table 3). Notably, greater proportions of women than of men believed that their partner would be unsupportive of the method. For example, 22% of women thought that their partner would be unsupportive if they wanted to use the IUD, while 11% of men thought that if they wanted their partner to use the IUD, their partner would be unsupportive; 15% of women and 9% of men believed that their partner would be unsupportive if they wanted to use the pill. Further, smaller proportions of men than of women believed that a method would interfere with sexual pleasure. For instance, 35% of men and 43% of women thought that the implant would interfere with men's sexual pleasure. Some 59% of men believed that male condoms interfere with women's sexual pleasure, compared with 66% of women.

Sizable proportions of study participants appeared to believe that most modern contraceptive methods do not cause side effects. While 67% of women and 76% of men believed that male condoms are not associated with side effects, similar proportions said this about the injectable and the implant. Participants were only slightly less likely to say so about the pill and the IUD.

Perceptions, such as methods' influence on menstruation, people's comfort in telling a friend about use, the ability to obtain a method and the ability to use it covertly, demonstrated fewer gender differences across methods. For example, 66% of men believed that the pill affects monthly menstruation, compared with 73% of women; however, such beliefs for the IUD, implant, injectable and male condom did not differ by gender. Similarly, 83% of

men reported that they would be very comfortable telling a friend if they used condoms, compared with 74% of women; comparable beliefs for the IUD, implant, injectable and pill did not differ by gender. Of the five methods, men and women were most similar in their perceptions regarding the implant, and both groups shared similar beliefs about the degree to which methods could be used covertly.

The larger proportion of respondents who said that they "did not know" on various perceptions of the IUD, as compared with condoms and the injectable, is unsurprising given that the IUD was rarely used by the study participants and that only 53% had heard of it. Yet despite general unfamiliarity with the IUD, the majority of participants who had heard of the method generally held positive perceptions about it (i.e., that it is very effective, easy to use, easy to obtain and does not cause side effects). A similar pattern was seen for the pill, which was also a less widely used method in this population.

Preference for the Male Condom, Injectable or Implant

In multivariate regression analyses examining the relationship between women's method-specific perceptions and their preference to use the injectable, implant or male condom, five such perceptions were found to be statistically significant (Table 4). Women had elevated odds of preferring to use a method if they perceived it to have no side effects, to have a desired effect on menstruation, to have no impact on conceiving a pregnancy in the future and to be very easy to use covertly (odds ratios, 1.3–1.7). Further, if a friend had recommended the method, women were more likely to prefer use of that method (1.5).

Regarding women's characteristics, women who desired a pregnancy after two years or who wanted no more pregnancies were less likely than those who desired a pregnancy within two years to prefer to use the injectable rather than condoms (odds ratios, <0.1 each). In contrast, number of living children was associated with elevated odds of preferring the injectable to the condom (3.8). Similarly, number of living children and pregnancy desire were significantly associated with preferring the implant over the condom. Finally, unmarried women were less likely than married women to prefer to use the implant rather than the condom (0.2).

Among men, only two method-specific perceptions were associated with the preference to use male condoms, the injectable or the implant. Similar to women, men had elevated odds of preferring to use a method if they perceived it to have a desired effect on menstruation (odds ratio, 1.7). Men also had elevated odds of preferring to use a method if they perceived their partner to be very supportive of its use (2.1). Regarding men's characteristics, unmarried men were less likely than married men to prefer to use the injectable and the implant (<0.1 each) rather than the condom. In contrast to women, men's fertility desires were not associated with preference to use a method.

TABLE 3. Percentage distribution of participants who have heard of various contraceptive methods, by method-specific perceptions, according to gender

Perception	Male condom		Injectable		Implant		Pill		IUD	
	Men (n=587)	Women (n=1,010)	Men (n=563)	Women (n=1,086)	Men (n=487)	Women (n=975)	Men (n=409)	Women (n=871)	Men (n=262)	Women (n=682)
Causes side effects										
Yes, minor	15.5	17.0*	15.8	18.8*	13.8	16.4*	17.4	17.3*	12.9	14.2*
Yes, serious	7.0	13.0*	5.5	8.2*	3.9	8.6*	6.6	16.7*	8.4	15.6*
No	75.5	66.9*	74.9	71.2*	73.5	69.1*	67.2	61.6*	61.2	58.3*
Don't know	2.0	3.2*	3.9	1.2*	8.8	6.0*	8.8	4.4*	17.5	12.0*
Affects monthly menstruation										
Yes	64.0	67.7	68.5	73.2	66.5	71.3	66.0	72.9*	59.7	67.3
No	32.1	28.3	28.1	24.7	28.8	24.5	29.6	24.5*	33.1	26.7
Don't know	3.9	4.0	3.4	2.2	4.7	4.2	4.4	2.5*	7.2	6.0
Interferes with conceiving a pregnancy in the future										
Yes	11.4	8.0	32.4	26.0*	21.2	20.2	20.3	16.6*	22.8	18.9*
No	86.5	89.3	63.5	72.1*	74.1	77.1	73.5	81.7*	67.7	75.4*
Don't know	2.0	2.7	4.1	2.0*	4.7	2.7	6.1	1.7*	9.5	5.7*
Affects women's sexual pleasure										
Yes, enhances	11.9	7.4*	13.1	16.2*	18.2	19.4*	15.7	19.8*	14.8	18.3*
Yes, interferes	58.9	65.5*	49.2	59.3*	34.9	46.2*	37.0	46.2*	31.6	40.6*
No	24.5	18.1*	32.0	19.7*	36.6	21.2*	35.3	20.7*	34.2	20.4*
Don't know	4.6	9.1*	5.7	4.9*	10.3	13.2*	12.0	13.3*	19.4	20.8*
Affects men's sexual pleasure										
Yes, enhances	11.8	8.2*	14.0	16.2*	18.5	20.3*	16.6	17.6*	14.8	18.0*
Yes, interferes	58.5	61.8*	47.8	55.7*	34.5	43.2*	35.7	45.5*	32.3	40.0*
No	26.5	17.4*	33.1	19.9*	36.8	21.1*	35.5	21.4*	33.5	20.5*
Don't know	3.2	12.7*	5.1	8.2*	10.3	15.4*	12.2	15.4*	19.4	21.5*
Partner supports decision to use†										
Yes, very supportive	57.9	46.8*	75.9	68.1*	74.1	66.1*	69.4	59.2*	64.3	53.8*
Yes, somewhat supportive	21.8	19.6*	15.8	17.4*	18.7	20.3*	17.6	20.1*	18.6	18.3*
No	16.2	21.4*	4.6	9.3*	3.9	5.1*	9.1	15.3*	11.4	22.0*
Do not know	4.1	6.2*	3.7	5.3*	3.3	5.1*	3.9	5.4*	5.7	5.9*
Comfortable describing method to a friend										
Yes, very comfortable	85.5	61.3*	79.3	83.5*	69.3	64.5	67.3	64.0	52.3	40.1*
Yes, somewhat comfortable	3.8	7.3*	4.1	4.3*	7.1	8.2	6.1	7.6	4.9	6.7*
No	7.0	23.0*	9.2	8.5*	14.7	17.7	21.0	19.5	28.9	35.9*
Don't know	3.8	8.5*	7.4	3.7*	9.0	9.7	5.6	8.9	13.9	17.3*
Comfortable telling a friend if used method										
Yes, very comfortable	82.6	73.8*	83.4	86.5	80.3	85.4	80.4	83.8	79.0	73.5
Yes, somewhat comfortable	5.6	9.7*	8.5	7.6	11.5	9.5	10.8	9.3	8.0	11.6
No	10.9	16.4*	7.6	5.6	7.8	4.9	8.6	6.8	12.6	14.0
Don't know	0.9	0.2*	0.5	0.4	0.4	0.3	0.2	0.1	0.4	0.9
Friend has recommended use										
Yes	83.5	65.3*	81.4	84.6*	80.9	86.9*	76.2	84.1*	69.2	70.6
No	16.4	34.7*	18.2	15.4*	18.5	13.0*	23.8	15.9*	30.8	29.4
Don't know	0.2	0.0*	0.4	0.0*	0.6	0.1*	0.0	0.0*	0.0	0.0
Effective at preventing pregnancy										
Yes, very effective	46.0	42.4	66.1	71.7*	67.2	69.6*	55.8	50.5*	57.3	53.8
Yes, somewhat effective	32.7	31.5	27.0	24.0*	25.3	24.0*	26.2	26.6*	22.5	24.6
No	19.9	23.6	4.4	3.1*	2.3	3.8*	13.5	20.4*	9.5	13.2
Don't know	1.4	2.5	2.5	1.2*	5.3	2.6*	4.7	2.4*	10.7	8.4
Easy to obtain										
Yes, very easy	76.2	70.9*	76.8	78.5	73.1	76.0	75.3	76.4	73.7	71.0*
Yes, somewhat easy	18.2	20.4*	20.0	19.6	22.1	21.7	19.3	20.4	21.0	22.7*
No	5.1	6.8*	2.1	1.6	2.7	1.6	3.9	2.6	1.5	4.8*
Don't know	0.5	1.9*	1.1	0.3	2.1	0.7	1.5	0.6	3.8	1.5*
Easy to use										
Yes, very easy	72.9	65.9*	72.7	75.6*	69.4	70.2	61.3	62.4	62.2	55.6*
Yes, somewhat easy	21.0	22.4*	21.3	21.5*	23.4	23.6	22.3	24.1	20.6	18.9*
No	2.9	5.1*	3.7	1.9*	2.5	3.7	13.2	11.1	9.2	17.0*
Don't know	3.2	6.6*	2.3	1.0*	4.7	2.5	3.2	2.4	8.0	8.5*

*Difference across genders is statistically significant at $p < .05$. †Use with a hypothetical or past partner, if the respondent was not in a relationship.

Note: Distributions may not add to 100.0 due to rounding.

continued

TABLE 3 (continued)

Perception	Male condom		Injectable		Implant		Pill		IUD	
	Men (n=587)	Women (n=1,010)	Men (n=563)	Women (n=1,086)	Men (n=487)	Women (n=975)	Men (n=409)	Women (n=871)	Men (n=262)	Women (n=682)
Easy to use covertly										
Yes, very easy	46.5	44.5	48.3	47.3	41.9	44.3	52.5	52.7	57.4	53.6
Yes, somewhat easy	16.0	16.5	21.4	23.9	16.4	20.6	22.3	22.5	15.6	16.2
No, somewhat hard	11.9	11.7	10.8	12.4	13.4	10.0	8.1	9.0	6.8	8.7
Yes, very hard	24.9	25.6	18.6	15.4	27.1	24.1	15.7	15.3	17.1	19.3
Don't know	0.7	1.8	0.9	1.0	1.2	1.0	1.5	0.6	3.0	2.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Distributions may not add to 100.0 due to rounding.

TABLE 4. Odds ratios (and 95% confidence intervals) from multivariate regression analyses examining associations between perceptions and preferences to use the injectable, implant or male condoms among participants who had heard of all three methods, by gender

Perceptions/preferences	Women (n=603)	Men (n=295)
Method perceptions		
Very comfortable telling a friend about it	1.12 (0.88–1.43)	1.44 (0.85–2.44)
Very easy to obtain	1.96 (0.97–3.99)	1.10 (0.54–2.24)
Very easy to use	0.71 (0.36–1.40)	1.34 (0.69–2.61)
Very effective at preventing pregnancy	1.34 (0.82–2.19)	1.14 (0.44–2.98)
No side effects	1.69 (1.19–2.41)**	0.92 (0.59–1.46)
Desired effect on menstruation	1.34 (1.05–1.71)**	1.69 (1.23–2.33)**
No impact on conceiving a future pregnancy	1.50 (1.02–2.22)*	1.20 (0.86–1.68)
Enhances sexual satisfaction for women	1.30 (0.67–2.51)	1.63 (0.65–4.04)
Enhances sexual satisfaction for men	0.92 (0.47–1.80)	0.69 (0.24–2.04)
Very easy to use covertly	1.38 (1.04–1.83)*	1.06 (0.63–1.78)
Very comfortable telling a friend you used it	1.42 (0.85–2.38)	1.10 (0.63–1.96)
Partner very supportive of use	1.50 (0.97–2.32)	2.13 (1.33–3.41)**
Friend recommended	1.51 (1.04–2.19)*	1.32 (0.60–2.88)
Prefers the injectable (vs. male condom)		
Age	0.90 (0.73–1.12)	1.05 (0.96–1.13)
Unmarried (ref: married)	0.34 (0.11–1.06)	0.04 (0.01–0.10)***
Pregnancy desire (ref: within two years)		
After two years	0.12 (0.03–0.42)**	1.41 (0.17–11.88)
Undecided	0.56 (0.15–2.09)	1.15 (0.23–5.89)
No more pregnancies	0.04 (0.01–0.30)**	0.32 (0.07–1.56)
Ever used modern contraceptive	2.73 (0.76–9.85)	0.19 (0.56–1.34)
No. of living children	3.79 (1.72–8.34)**	0.86 (0.56–1.34)
Prefers the implant (vs. male condom)		
Age	0.88 (0.71–1.09)	1.01 (0.90–1.12)
Unmarried (ref: married)	0.17 (0.07–0.40)***	0.02 (0.01–0.10)***
Pregnancy desire (ref: after two years)		
Within two years	0.25 (0.9–0.74)*	1.67 (0.25–11.33)
Undecided	1.30 (0.36–4.74)	1.82 (0.54–6.19)
No more pregnancies	0.08 (0.01–0.53)**	0.48 (0.11–2.04)
Ever used modern contraceptive	3.15 (0.78–12.63)	0.39 (0.02–7.34)
No. of living children	3.94 (1.72–9.07)**	0.95 (0.61–1.48)

*p<.05. **p<.01. ***p<.001. Notes: The table shows the estimates of method perceptions (top panel) and estimates of respondent characteristics (bottom panel); each panel contains the measures in the other. ref=reference group.

DISCUSSION

This analysis advances our understanding of the relative importance of perceived barriers to and facilitators of different types of contraceptive methods on the preference to use specific methods, as well as of the differences and similarities between men and women in their perceptions. Men's perceptions about contraceptive methods are largely understudied, despite the documented importance of men in women's contraceptive behaviors and family size decisions.^{39,40} To our knowledge, this is the first study to

examine men's perceptions about method-specific barriers and facilitators, providing a more comprehensive understanding of what men believe about specific contraceptive methods. Notably, the differences in men's and women's beliefs about side effects, sexual pleasure and partner approval may reflect gendered social norms or indicate differences in the diffusion of contraceptive information.

Among men, perceptions of their partner's method-specific approval were a powerful predictor of preferences, but the same was not true among women. This

may reflect the fact that men and women differed in their perceptions of support for all contraceptive methods and that greater proportions of men believed their partner to be very supportive if they wanted to use a method across all five methods. A similar study in Bangladesh also found that husband's approval was not a significant predictor of women's intention to use a method;²⁹ however, a study in Kenya found the opposite to be true.³¹ The fact that findings conflict across these settings is not surprising, as partner opposition is not as prevalent as a reason for nonuse among women with unmet need in Bangladesh (3%) or Malawi (6%) as it is in Kenya (9%),⁹ although the differences in proportions are small. The gender difference in the relative importance of partner support for women and men is difficult to rationalize. It may be that, because most contraceptive methods are female-controlled, men in this setting defer to their partner, and thus their preferences are informed by what their partner wants or is willing to use.

Relatively large proportions of participants in this study believed that modern contraceptive methods do not have side effects. This contrasts with a similar study of women's method-specific beliefs in Kenya and Bangladesh, in which considerable proportions of women thought that contraceptive methods cause unpleasant side effects and are unsafe to use for long periods of time.²⁸ Our results may also contrast with qualitative studies and quantitative studies of reasons for nonuse, which often depict women as fearing method side effects to the point of nonuse.^{8,9,13,15,41} However, our study differs from past studies in two very important ways. First, many findings about beliefs concerning side effects come from qualitative studies. To elicit information about side effects, such studies may present negative beliefs about contraceptive side effects in some detail (especially when probing respondents about side effects, if the aim is to understand misconceptions), which can then imply that such negative beliefs are widespread. However, the nature of qualitative data prevents us from determining whether negative beliefs are common or not. While the majority of our respondents reported believing that methods do not have side effects, sizable proportions reported that methods do have minor or serious side effects. For example, almost one-third of men and one-fourth of women believed that the IUD has serious or minor side effects. It may be that looking at this from the population level and using quantitative methodology with sampling that is representative of the population elicited a clearer measure of the prevalence of these beliefs. While beliefs about side effects in our sample were not quite as widespread as qualitative research suggests, they were nonetheless present.

Second, many quantitative studies rely on self-reported reasons for nonuse, which may lead to an overestimate of how common negative beliefs or experiences are. Our methodology allowed us to include both users and nonusers, and we found, unsurprisingly, that women and men held more positive beliefs about common methods of contraception.

Our findings may differ from those of past studies because all study participants lived within the catchment area of a community hospital with a particularly well-supported family planning outreach program. The hospital conducts regular outreach with community members, including education about contraception. Further, the questions in the fourth wave of our data collection in this prospective cohort study were the same as those included in a previous wave. Some participants in our cohort study may have had more positive perceptions of contraception due to their repeated exposure to questions about contraception over time. In populations with better access to health services and more exposure to issues around contraception, negative beliefs about side effects may not be as prevalent. In addition, participants' responses may be due in part to social desirability bias.

Although we found these differences between studies in the descriptive analysis, our regression findings are similar to those of two previous studies finding that perceptions about side effects are a significant predictor of the intention to use a contraceptive method.^{29,31} In other words, while negative perceptions about side effects were not as prevalent across methods, whether women perceived methods to have side effects was still a significant predictor of a preference to use a method. Clearly, concerns about side effects matter in a range of contraceptive decisions and are a primary reason for nonuse among women with an unmet need for family planning.⁹

Perceptions of side effects did not appear to matter in the men-only model. However, perceptions about the effect on menstruation mattered for both men and women. In a qualitative study that we conducted to inform the development of our survey items, we found that women and men were put off by methods that caused prolonged menstruation or irregular bleeding patterns;⁴² this was largely due to the impact of these issues on the occurrence and frequency of sexual intercourse. Past studies have also found that beliefs about the effect on menstruation are a significant predictor of intention to use a method.³¹

The perception that a method has no impact on conceiving a future pregnancy was a significant predictor of preference in the women-only model. In a previous study, the belief that the pill or injectable did not impair fertility in the long term was significantly associated with the intention to use a method.²⁹ Fertility and childbearing are integral to the formation of identity and the definition of roles within many Sub-Saharan African communities.⁴³⁻⁴⁷ In Malawi, parenthood is an indicator of adulthood, cultural norms favor large families and families with children are highly respected.⁴⁸ It is quite rational that women would not desire to use a method that they believed would reduce their chances of becoming pregnant in the future. However, it is surprising that, while large minorities of women believed that the injectable and implant impair long-term fertility, these are two of the most commonly used contraceptive methods.

The majority of women in our study perceived that contraceptive methods interfere with sexual pleasure for women and men. Another study in Malawi also found that women perceive modern methods to reduce sexual pleasure, libido or appeal.¹⁹ While we did not inquire why respondents believed that contraception would reduce sexual pleasure, other studies provide evidence that non-barrier methods may be associated with certain side effects (e.g., prolonged menstruation or vaginal dryness) that may detract from sexual intercourse.^{11,13,22} Despite these negative beliefs, the perception that a method enhances sexual satisfaction for women or for men did not significantly influence method preference.

Limitations

The study is not without limitations. Participants must have heard about a method to have received the method-specific questions. Thus, a participant may not have provided responses to all questions, limiting comparability. However, awareness of a method is a critical precursor to holding positive or negative perceptions. We could not determine which perceptions were the most influential in explaining future contraceptive decisions, such as continuation versus discontinuation, and we do not know how perspectives fluctuate with exposure to various factors (e.g., changes in marital status) over time. To better understand how perceptions are socially created and change with exposure to the larger environmental context, a longitudinal design will be necessary.

Our sample was not regionally or nationally representative, and we are cautious not to generalize results beyond the hospital catchment area. However, this is the first study to obtain comparable quantitative data on method-specific perceptions of each of five major contraceptive methods from among men and women in Southeast Africa. The study participants, who lived in rural agricultural communities and had limited educational opportunities, share a living context with millions of people in this region of the world. Further, our study sample contains 461 couples; these dyad pairs of men and women may have more similar perceptions to each other than other men and women would have. Thus, it is possible that by presenting the results without stratifying them by couple status, we may mask some differences between men and women (potentially underestimating gender differences in perceptions). However, given that about half of participants were not coupled, we chose to focus our novel assessment on all participants in this analysis.

In this rural population, the method mix was skewed, with the majority of respondents using the injectable, implant or female sterilization. We did not ask about perceptions of female sterilization, due to feasibility issues and the fact that many of the study questions were not applicable to sterilization. In the regression models, we focused on male condoms, the injectable and the implant, because too few participants preferred the IUD or pill. Including such preferences

would have provided a greater understanding about how preferences affect the adoption of all available methods. Further, due to restrictions of the models, the regression analysis utilized information from only 603 women and 295 men, potentially impacting the generalizability of the results.

Implications for Practice and Research

Our study findings have implications for interventions and future research aimed at meeting contraceptive need in Sub-Saharan Africa. To counteract misperceptions or negative beliefs about methods, programs and providers should provide accurate information to men and to couples, rather than to women alone. Targeted communication campaigns could be designed to address the interaction of fear over precise health concerns and social myths, which may drive negative perceptions or inaccurate medical information about methods.^{13,15} Further, information about the differences between men and women regarding the relationship between method-specific perceptions and method preferences is important in program planning, the targeting of services and the development of future interventions. Both men's and women's perceptions about the effects of a method on menstruation represent a critical need to improve the availability of a range of contraceptive methods or achieve improvements in methods.

Few quantitative studies have investigated the full array of barriers and facilitators by method that have been hypothesized to influence women's contraceptive decisions. Research is lacking in this particular area of family planning research, because barriers and facilitators are difficult to quantify, measure and assess.¹² Major differences in contraceptive method characteristics may also contribute to difficulty in comparing method-specific barriers and facilitators—comparisons that are important for understanding variations in individuals' perceptions. Future studies should include other potential method-specific factors,^{9,10} such as religious approval and service quality aspects, to understand which are associated with an unmet need for contraception.

Family planning is critical to the health and well-being of women and their families. For programs to be effective, we need to understand why individuals choose to use or not use specific methods. Since men often play a critical role in contraceptive decision-making, their perceptions cannot be overlooked. Programs may be more effective if they recognize and address perceptions of specific methods and focus on both men and women.

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RESUMEN

Contexto: A pesar de la extensa bibliografía sobre las percepciones de las mujeres acerca de los métodos anticonceptivos, las distinciones entre métodos específicos rara vez se han investigado, los hombres a menudo han sido excluidos y, por lo general, no se han recolectado datos comparables para usuarias y no usuarias de anticonceptivos. Carecer de dicha información podría limitar la efectividad de los programas de planificación familiar.

Métodos: Se utilizaron datos de encuestas transversales de 1,162 mujeres y 621 hombres para examinar las barreras percibidas y los facilitadores del uso de métodos anticonceptivos (píldora, inyectable, implante subdérmico, DIU y condones masculinos). Se utilizó análisis de regresión logit condicional para examinar las asociaciones entre 13 percepciones específicas del método y la preferencia de las personas encuestadas para usar condón masculino, inyectable o implante en una submuestra de 603 mujeres y 295 hombres.

Resultados: Las percepciones de hombres y mujeres difirieron principalmente con respecto a los efectos secundarios, el placer sexual y el apoyo de la pareja. La probabilidad de que

una mujer prefiriera usar un método estuvo asociada positivamente con su percepción de que no tuviera efectos secundarios, que tuviera una influencia deseada en la menstruación, que no tuviera impacto para tener un futuro embarazo, que fuera fácil usarlo de manera encubierta y que fuera recomendado por una amistad (razón de probabilidades, 1.3–1.7). La probabilidad de que un hombre prefiriera un método estuvo asociada positivamente con su percepción de que tuviera una influencia deseada en la menstruación de su pareja (1.7) y que su pareja apoyara decididamente su uso (2.1).

Conclusiones: Los programas de planificación familiar y los proveedores de servicios de salud deben colaborar con mujeres y hombres para contrarrestar las percepciones erróneas o las creencias negativas sobre los métodos anticonceptivos y deben trabajar para proporcionar información precisa a las parejas.

RÉSUMÉ

Contexte: Malgré la documentation abondante des perceptions féminines de la contraception, les distinctions entre les méthodes spécifiques sont rarement examinées, les hommes sont souvent exclus et les données comparables relatives aux utilisatrices et aux non-utilisatrices de la contraception ne sont généralement pas collectées. Ces lacunes peuvent limiter l'efficacité des programmes de planification familiale.

Méthodes: Les données d'enquêtes transversales relatives à 1 162 femmes et 621 hommes ont servi à examiner les obstacles et les facteurs favorables perçus à l'utilisation de méthodes contraceptives (pilule, injectable, implant sous-dermique, DIU et préservatif masculin). Les associations entre 13 perceptions spécifiques aux méthodes et la préférence des répondants à utiliser le préservatif masculin, les contraceptifs injectables ou l'implant ont été examinées par analyse de régression logit conditionnelle dans un sous-échantillon de 603 femmes et 295 hommes.

Résultats: Les perceptions masculines et féminines différaient le plus sur le plan des effets secondaires, du plaisir sexuel et du soutien du ou de la partenaire. La probabilité qu'une femme préfère utiliser une méthode s'est révélée associée positivement à sa perception d'absence d'effets secondaires, d'influence désirée sur la menstruation, de non-incidence sur la possibilité d'une grossesse future, d'emploi simple et discret et de recommandation d'une amie (RC, 1,3–1,7). La probabilité qu'un homme préfère une méthode était associée positivement à sa perception d'influence désirée sur la menstruation de sa partenaire (1,7) et de soutien ferme de son utilisation par sa partenaire (2,1).

Conclusions: Les programmes de planification familiale et les prestataires de soins de santé doivent engager le dialogue avec les femmes comme avec les hommes pour contrer les perceptions inexactes ou les croyances négatives à l'égard des méthodes contraceptives, et offrir aux couples une information exacte.

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