# Perceptions of Partners' Fertility Preferences and Women's Covert Contraceptive Use in Eight Sub-Saharan African Countries

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Covert use of contraception is a common but underreported and understudied phenomenon where one partner uses contraception without the other's knowledge. We used Demographic and Health Survey couple data to examine the relationship between wives' perceptions of husbands' fertility preferences and type of contraceptive use (overt vs. covert) in Benin, Ethiopia, Kenya, Mali, Nigeria, Sierra Leone, Uganda, and Zambia using logistic regression. Wives who perceived that their husbands wanted more children than them had increased odds of using covertly, compared to those who perceived that husbands wanted the same number of children in all countries except Benin, and the strength of the relationships ranged from adjusted odds ratio (aOR) 2.89 (95 percent confidence interval (CI) 1.75–4.76) in Zambia to aOR 4.01 (95 percent CI 1.68–9.58) in Mali. Wives who reported not knowing their husbands' fertility preferences had increased odds of using covertly compared to wives who perceived that their husbands wanted the same number of children in all countries except Zambia, ranging from aOR 2.02 (95 percent CI 1.11-3.69) in Ethiopia to aOR 3.82 (95 percent CI 2.29–6.37) in Kenya. Our findings indicate that efforts to increase partner engagement to align couple's fertility preferences may encourage overt use.

# BACKGROUND

Covert use of contraception is a common but underreported and understudied phenomenon where one partner (typically a woman) uses contraception without the other's knowledge.<sup>1</sup>

<sup>1</sup> Overt use is defined as an individual's decision to use contraception, with or without the spouse's involvement, but with the spouse's knowledge (Biddlecom and Fapohunda 1998).

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The choice to use covertly reflects the complex interplay between individual, relationship, community, and societal factors (Bronfenbrenner 1977). On the one hand, covert use can empower women in achieving their reproductive goals in situations where they may experience or perceive a lack of control. Women have reported discreet use because they consider contraception or sexually transmitted disease prevention a female's responsibility (Kibira et al. 2020; MacPhail et al. 2009; McCarraher, Martin, and Bailey 2006), potentially symbolizing "full reproductive autonomy" (Kibira et al. 2020). On the other hand, some women may feel so disempowered in their relationships that they have no choice but to use in secret to avoid coercive childbearing (Biddlecom and Fapohunda 1998; Blanc et al. 1996).

Understanding the factors associated with covert use has critical programmatic and policy implications for reproductive health and autonomy. There is evidence that covert use is linked to adverse consequences on individuals' health and well-being. Covert users may be less likely to switch methods due to side effects than open users (Biddlecom and Fapohunda 1998; Castle et al. 1999; Kibira et al. 2020). Covert use may lead to emotional distress, as it may conflict with the user's religion or belief system (Adanikin, McGrath, and Padmadas 2019; Castle et al. 1999; Heck et al. 2018; Kaneka and Mturi 2015). Further, the impacts of discovery, whether feared or realized, may include marriage dissolution, social sanctions, financial backlash, and/or intimate partner violence (Alio et al. 2009; Bawah 2002; Castle et al. 1999; Heck et al. 2018; Wilson-Williams et al. 2008).

Across sub-Saharan Africa (SSA), estimates of covert use among women using modern contraception have varied across countries, with a 21-country study estimating that the prevalence of covert use as a percentage of all contraceptive users ranged from 2 percent to 69 percent (Choiriyyah and Becker 2018). Even though overall contraceptive use is increasing across this region, which has been previously hypothesized by scholars to reduce covert use overall (Biddlecom and Fapohunda 1998), there is some evidence that covert contraceptive use is also rising (Gasca and Becker 2018).

Although numerous studies of contraceptive use in SSA contexts have acknowledged the existence of covert use, only a few have specifically explored determinants of covert use compared to overt use, and even fewer studies have considered couple dynamics around covert use. From a theoretical perspective, couple dynamics are thought to be the proximal determinants of reproductive behavior within partnerships. We draw directly from the foundational Traits-Desires-Intentions-Behaviors Framework proposed by Miller, Severy, and Pasta (2004) that seeks to explain how each partner's motivational traits and "consciousness" (one's individual fertility desire and the perceived desires of one's partner) influence the couple's conjoint reproductive behavior. They postulated that individual desires, along with perceptions of partner desires, contribute to subsequent reproductive behavior (Miller, Severy, and Pasta 2004). Individual desires and perceptions of partner desires are also continually influenced by direct or indirect spousal communication (Miller, Severy, and Pasta 2004). Where communication around family size and contraception is uncommon, there is a question of how accurate individuals' perceptions of their partners' desires are (Baiden et al. 2016; Bankole and Singh 1998; Casterline and Sinding 2000; Sarnak and Becker 2022). Nevertheless, whether or not women's perceptions are accurate, it is these perceptions of their husbands' desires that may ultimately lead some to use covertly (Biddlecom and Fapohunda 1998). For similar reasons, women who do not know their husbands' fertility preferences may also use covertly.

The few studies that have examined couple dynamics surrounding covert use generally suggest that wives' perceptions of their husbands' preferences, primarily influenced by spousal communication around fertility and family planning, are important factors related to the decision to use covertly. A study in Uganda revealed that women's perceptions of discordant fertility desires with their partners and/or their partners' families underpinned covert use, and this was especially the case for women who desired longer birth intervals (Heck et al. 2018). Other studies have found that covert users believe their partners oppose contraception due to pronatalism, religion, and worries about infidelity and engage in covert use as a strategy to avoid conflict and violence (Castle et al. 1999; Kibira et al. 2020; Mahler 1999). Further, multiple studies have found that spousal communication, or lack thereof, about family planning and childbearing was a strong determinant of covert use (Biddlecom and Fapohunda 1998; Kibira et al. 2020; Mahler 1999), providing a possible pathway between perceptions of partners' fertility preferences and the decision to use covertly, although directionality has been noted to go both ways. Of note, some participants in a multicountry study in three SSA geographies in fact reported *improved* couple communication with disclosure of covert use; they recounted that a failure to discuss family planning led the woman to use covertly (Kibira et al. 2020). Other studies that have examined the determinants of perceptions of partners' desires more generally have also found spousal communication as well as more distal determinants such as gendered societal norms and diffusion to influence these perceptions (Agadjanian 2005; DeRose, DoDoo, and Patil 2002; Wolff, Blanc, and Ssekamatte-Ssebuliba 2000).

To date, existing studies suggest that perceptions of husbands' fertility preferences are important to understanding why women use covertly, yet no recent studies have quantitatively examined whether perceptions of husbands' fertility preferences may be driving the decision to use covertly across multiple contexts in the SSA region using nationally representative data. The present study fills a gap by using a novel, couple-based, indirect estimate of covert use in eight SSA countries, adapted from Choiriyyah and Becker (2018), to test the association between covert use among female users and perceptions of their husbands' fertility preferences. We hypothesized that women who believe their husbands want more children than them or who do not know their husbands' fertility preferences would be more likely to use covertly than those who perceived that they wanted the same number of children.

## **METHODS**

#### Data

Data for this study come from the Demographic and Health Surveys (DHS), which are nationally representative household surveys that are conducted approximately every five years in participating countries and collect data on key population and health indicators (ICF 2022). The DHS uses a multistage, stratified cluster design. We used the couple data sets provided by DHS, which are created by linking eligible and interviewed men and women from the same households who are in union.

## Survey Selection and Analytic Sample

We included surveys from SSA countries with a DHS conducted since 2010 that provided the necessary data and variables to indirectly estimate covert use as outlined by Choiriyyah and Becker (2018) and that had sufficient sample sizes to conduct an analysis of covert use among a subset of modern users. This latter criterion was based on a statistical power analysis in which we sought to assess whether the survey had a sample size to detect a relative difference of double the prevalence of covert use between our two main groups of interest, those women who thought their husbands wanted more children than them versus those who thought their husbands wanted more children than them. Based on these two criteria, our analysis used survey data from the following eight countries: Benin (2017/2018), Ethiopia (2016), Kenya (2014), Mali (2018), Nigeria (2018), Sierra Leone (2019), Uganda (2016), and Zambia (2018).<sup>2</sup>

Couples were eligible for inclusion in each survey if they met the following criteria needed to estimate covert use, based on the methods from Choirriyyah and Becker (2018): (1) women reported using female-controlled modern methods, defined as users of the pill, intrauterine device (IUD)/Norplant, injection, female sterilization, or female condom at the time of the survey; (2) couples were in monogamous unions, defined as when wives report their husband as having no other wives and husbands report only having one wife; (3) husbands responded that their most recent sex partner was their spouse or live-in partner; and (4) women reported that their method was obtained/started before last sex.

## Measures

#### Dependent Variable: Covert use

We used the measure of covert use developed by Choiriyyah and Becker<sup>3</sup> that can be used with the most recent versions of the DHS questionnaire (DHS-7; 2018). Among all women who reported the use of female-controlled modern methods, covert users were identified as those who met the following criteria: women whose partner reports nonuse or use of a traditional method and women who report that the decision maker for her current family planning use was "mainly her" (other answer categories to this question include mainly partner/husband; joint decision; and other). All other users of female-controlled modern methods were defined as overt users.

#### Main Independent Variable

The main independent variable of interest was the wife's perception of her husband's fertility desires relative to her own. The original question was "Does your husband/partner want the same number of children that you want, or does he want more or fewer than you want?" The response categories included the following: husband wants more children than me; husband wants the same number of children as me; husband wants fewer children than me; and do

<sup>2</sup> The following countries were excluded from this analysis due to low statistical power: Angola, Burkina Faso, Burundi, Cameroon, Chad, Comoros, Congo, Cote d'Ivoire, Democratic Republic of Congo, Gabon, Gambia, Ghana, Guinea, Lesotho, Liberia, Malawi, Namibia, Niger, Rwanda, Senegal, South Africa, Tanzania, Togo, and Zimbabwe.

<sup>3</sup> Choiriyyah and Becker (2018) created two new measures of estimating covert use, Revision 1 and Revision 2. Revision 1 required the direct question on covert use, which is not available in recent DHS surveys. Thus, we use their Revision 2 measure to estimate covert use.

not know. We categorized this variable into three exposure groups of interest: women who think their husbands want the same or fewer children than they do, women who think their husbands want more children than they do, and women who "do not know" their husbands' fertility preferences.

#### Covariates

Covariates in our models included sociodemographic variables that have been cited in the literature as associated with female covert use and are measured consistently across surveys. These measures included household characteristics such as residence (urban, rural) and wealth quintile, as well as individual characteristics including age (15–24 years; 25–34 years; 35+ years), education (none, primary, secondary, or higher), and parity (0–1 children ever born; 2–4 children ever born; 5+ children ever born).

In addition to sociodemographic variables, we also included four proxy measures of gender equity and dynamics in the household, which have been shown to influence covert use (Kibira et al. 2020; OlaOlorun, Anglewicz, and Moreau 2020). These measures, which are similar to those used in other studies (Kishor and Subaiya 2008; Wolff, Blanc, and Ssekamatte-Ssebuliba 2000), include the wife's highest level of schooling completed, her employment status (employed, not employed), and age and education differentials between partners.

Because prior research suggests that experiences of gender-based violence may be associated with covert use (though the directionality of the relationship remains unclear), we ideally would include measures of gender-based violence in our models. While the DHS conducts a domestic violence module among one-third of female respondents in many countries, in Benin and Uganda, no women were administered this module. Therefore, we also ran a secondary analysis including measures of gender-based violence in the remaining six countries: Ethiopia, Kenya, Mali, Nigeria, Sierra Leone, and Zambia. We created a dichotomous variable for any violence based on whether the respondent reported experiencing any of the following: any severe violence from husband/partner, any less severe violence from husband/partner, or any sexual violence from husband/partner. A full list of items that comprise each composite violence measure can be found in the *Guide to DHS Statistics* (Croft et al. 2018).

#### Analysis

All analyses were conducted separately for each country. First, we tabulated descriptive statistics for our dependent variable, main independent variable, and covariates. Second, we compared characteristics between overt and covert users using design-based F-statistics to test whether differences were significant at the p < 0.05 level. Third, we conducted simple and multivariable logistic regression for each country, comparing the odds of covert use versus overt use (referent) among female users of modern contraception by our independent variable of interest and listed covariates and report 95 percent confidence intervals (CIs) for the estimates.

All regression model coefficients and standard errors were adjusted for the multistage complex survey design and conducted in Stata 16. As the couple is the unit of analysis in this study, we used men's weights because their response rates are more variable, and couple analyses using men's weights usually produce less biased results than female weights (Becker and Kalamar 2018). In the secondary analyses that included measures of gender-based violence, we used the specified gender-based violence weights.

## RESULTS

#### **Descriptive Statistics**

The estimated percentage of women using covertly among users of female-controlled modern methods varied across sites (Table 1). Overall, the percentage of covert use was lower in East Africa. In Zambia, Ethiopia, and Kenya, covert users represented less than 10 percent of the sample (5 percent, 7 percent, and 9 percent, respectively), while in Uganda, 13 percent of female-controlled modern users were classified as covert. Higher percentages of covert users were observed in West Africa. In Mali, Benin, and Sierra Leone, just over one in four women were using covertly (26 percent in Mali, 29 percent in Benin, and 30 percent in Sierra Leone), while in Nigeria, 17 percent were using covertly.

Wives' perceptions of husbands' fertility preferences differed by country. In all countries except Mali, at least 50 percent of wives perceived that their husbands want the same number or fewer children than them, ranging from 50 percent in Benin to 71 percent in Kenya. Twenty percent to 30 percent of wives across all countries except Sierra Leone perceived that their husbands wanted more children than them; in Sierra Leone, only 11 percent of wives reported this. While only 8 percent of wives in Nigeria and Kenya reported that they did not know their husbands' fertility preferences, over 20 percent of wives in Benin, Ethiopia, Mali, Sierra Leone, and Zambia reported they did not know, reaching 36 percent in Mali.

Household characteristics differed across the eight countries. In Ethiopia, Mali, and Uganda, over two-thirds of the couples resided in rural areas. In Nigeria, a majority of the couples (61 percent) resided in urban areas. In Benin, Kenya, Sierra Leone, and Zambia, the split was closer to half in each residence. Wife characteristics also differed across countries. The largest proportions of women were aged 25–34 years in all countries, yet the next largest age category varied by country. While 42 percent of women in the sample in Nigeria were aged 35 or older, only 25 percent of women in Mali were. Most women in the sample also reported having two to four children; this ranged from 47 percent in Uganda 63 percent to in Kenya. Parities were highest in Benin, Nigeria, and Uganda, where 43 percent, 40 percent, and 39 percent of women reported having five children or more, respectively. The highest schooling level attained by wives varied by country, while just about half or more of wives reported no formal education in Benin, Ethiopia, Mali, and Sierra Leone, over 90 percent of wives in Kenya, Nigeria, Uganda, and Zambia had at least a primary education. Levels of secondary or higher education were highest in Nigeria (71 percent), Zambia (43 percent), and Kenya (40 percent). Over two-thirds of wives reported being employed in all countries except for Ethiopia and Zambia, where 36 percent and 52 percent were employed, respectively.

Across countries, husbands were on average older than wives; the majority of husbands in all countries were above age 35. Husbands reported on average higher schooling levels than wives, but large percentages in Benin (41 percent), Ethiopia (39 percent), Mali (48 percent), and Sierra Leone (34 percent) reported no formal education. Levels were highest in Nigeria and Zambia, where 76 percent and 58 percent reported having secondary or higher education.

|  |                      |                      | R                    | egion and coun            | iry (survey year)    |                      |                      |                      |
|--|----------------------|----------------------|----------------------|---------------------------|----------------------|----------------------|----------------------|----------------------|
| Characteristic   |                      | West A               | ıfrica               |                           |                      | East A               | vfrica               |                      |
|  | Benin<br>(2017/2018) | Mali<br>(2018)       | Nigeria<br>(2018)    | Sierra<br>Leone<br>(2019) | Ethiopia<br>(2016)   | Kenya<br>(2014)      | Uganda<br>(2016)     | Zambia<br>(2018)     |
| Number of couples (n)<br>All couples (%)   | 281<br>100.0         | 320<br>100.0         | 633<br>100.0         | 448<br>100.0              | 1899<br>100.0        | 2391<br>100.0        | 641<br>100.0         | 2257<br>100.0        |
| 1ype of user<br>Overt<br>Covert  | 70.9<br>29.1         | 74.1<br>25.9         | 83.2<br>16.8         | 70.2<br>29.8              | 92.9<br>7.1          | 91.0<br>9.0          | 87.3<br>12.8         | 94.6<br>5.4          |
| Wife's perception of husband's fertility preference<br>Both want same/husband wants less<br>Husband wants more<br>Do not know<br>Household characteristics | 49.7<br>28.5<br>21.8 | 33.6<br>30.8<br>35.6 | 66.0<br>25.6<br>8.4  | 65.0<br>11.4<br>23.6      | 54.8<br>20.2<br>25.0 | 71.2<br>20.4<br>8.5  | 52.6<br>30.7<br>16.7 | 55.4<br>23.6<br>21.1 |
| Household wealth<br>Lowest<br>Lower middle   | 15.9<br>18.1         | 10.0                 | 5.2<br>8.6           | 15.4<br>15.2              | 9.1<br>0.61          | 7.6<br>18.9          | 11.7<br>18.1         | 16.5<br>16.8         |
| Middle highest<br>Highest  | 13.5<br>20.6<br>32.0 | 16.0<br>27.8<br>35.1 | 19.9<br>29.2<br>37.0 | 18.7<br>22.8<br>27.9      | 22.0<br>22.9<br>27.0 | 20.8<br>24.5<br>28.2 | 22.1<br>25.8<br>22.2 | 2.12<br>25.5<br>19.7 |
| Nestuence<br>Urban<br>Rural<br>Wije Characteristics  | 56.4<br>43.6         | 35.7<br>64.3         | 61.5<br>38.5         | 51.6<br>48.4              | 21.5<br>78.5         | 44.3<br>55.7         | 24.3<br>75.7         | 45.2<br>54.8         |
| Age, years<br>15-24<br>25-34<br>35+  | 15.9<br>51.2<br>32.9 | 26.6<br>49.9<br>23.5 | 11.1<br>47.2<br>41.7 | 17.8<br>51.6<br>30.6      | 24.2<br>49.1<br>26.7 | 20.8<br>51.7<br>27.4 | 23.3<br>46.7<br>30.0 | 25.4<br>41.2<br>33.4 |
| ranny<br>0-1 children<br>2-4 children<br>5 plus children<br>Hichost ochooliar Junol  | 9.6<br>47.7<br>42.7  | 14.1<br>48.4<br>37.5 | 6.8<br>53.7<br>39.5  | 15.8<br>55.8<br>28.4      | 23.2<br>47.6<br>29.2 | 17.6<br>62.5<br>19.9 | 13.1<br>47.4<br>39.5 | 14.6<br>51.5<br>33.9 |
| Pringuest sectioning rever<br>None<br>Primary<br>Secondary or higher   | 53.7<br>23.3<br>23.1 | 51.3<br>16.1<br>32.7 | 10.3<br>18.3<br>71.4 | 47.9<br>14.0<br>38.1      | 52.8<br>33.2<br>14.0 | 2.9<br>56.8<br>40.3  | 8.8<br>60.0<br>31.2  | 6.9<br>49.9<br>43.2  |
| No<br>Yes  | 15.3<br>84.7         | 38.1<br>61.9         | 15.1<br>84.9         | 17.9<br>82.1              | 64.5<br>35.5         | 25.3<br>74.7         | 15.1<br>84.9         | 47.8<br>52.2         |

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| TABLE 1 (Continued)                                    |                      |                |                   |                           |                    |                 |                  |                  |
|--|----------------------|----------------|-------------------|---------------------------|--------------------|-----------------|------------------|------------------|
|  |                      |                | Re                | egion and count           | ry (survey year)   |                 |                  |                  |
| Characteristic   |                      | West A         | frica             |                           |                    | East /          | Africa           |                  |
|  | Benin<br>(2017/2018) | Mali<br>(2018) | Nigeria<br>(2018) | Sierra<br>Leone<br>(2019) | Ethiopia<br>(2016) | Kenya<br>(2014) | Uganda<br>(2016) | Zambia<br>(2018) |
| Husband characteristics                                |                      |                |                   |                           |                    |                 |                  |                  |
| Age, years   |                      |                |                   |                           |                    |                 |                  |                  |
| 15–24  | 6.0                  | 3.7            | 1.8               | 2.8                       | 6.7                | 4.5             | 6.7              | 7.0              |
| 25-34  | 36.2                 | 37.7           | 23.0              | 40.0                      | 41.0               | 40.7            | 41.9             | 40.0             |
| 35+  | 57.7                 | 58.5           | 75.1              | 57.1                      | 52.2               | 54.9            | 51.4             | 53.0             |
| Highest schooling level                                |                      |                |                   |                           |                    |                 |                  |                  |
| None   | 41.4                 | 48.4           | 8.2               | 34.2                      | 39.1               | 1.3             | 4.7              | 4.1              |
| Primary  | 23.0                 | 16.2           | 16.0              | 12.4                      | 39.9               | 51.5            | 56.2             | 38.1             |
| Secondary or higher                                    | 35.6                 | 35.4           | 75.8              | 53.4                      | 21.1               | 47.1            | 39.1             | 57.8             |
| Couple characteristics                                 |                      |                |                   |                           |                    |                 |                  |                  |
| Difference between husband and wife age, years         |                      |                |                   |                           |                    |                 |                  |                  |
| Wife older than husband                                | 7.6                  | 0.9            | 2.2               | 4.7                       | 4.4                | 4.2             | 5.5              | 3.6              |
| Wife and husband same age or within $+/-5$ years       | 45.6                 | 29.1           | 40.1              | 44.7                      | 43.3               | 50.7            | 51.5             | 54.0             |
| Husband older by 6–10 years                            | 29.0                 | 38.3           | 36.2              | 29.5                      | 32.9               | 34.2            | 31.2             | 32.8             |
| Husband older by 11+ years                             | 17.9                 | 31.7           | 21.5              | 21.1                      | 19.5               | 10.8            | 11.8             | 9.7              |
| Difference between husband and wife schooling, years   |                      |                |                   |                           |                    |                 |                  |                  |
| Wife more school than husband                          | 15.6                 | 21.8           | 19.6              | 19.8                      | 17.1               | 28.2            | 34.3             | 29.9             |
| Wife and husband same school                           | 38.1                 | 43.9           | 38.8              | 32.1                      | 38.5               | 26.6            | 12.5             | 16.4             |
| Husband more school by 1–5 years                       | 25.4                 | 17.0           | 25.1              | 22.2                      | 31.4               | 39.6            | 38.8             | 45.9             |
| Husband more school by 6–10 years                      | 15.8                 | 16.4           | 12.5              | 15.4                      | 11.8               | 5.3             | 11.6             | 7.5              |
| Husband more school by 11+ years                       | 5.0                  | 0.9            | 3.9               | 10.4                      | 1.2                | 0.3             | 2.7              | 0.3              |
| Contraceptive characteristics as reported by the woman |                      |                |                   |                           |                    |                 |                  |                  |
|  |                      | 0              |                   | 117                       | Ē                  | 0.07            |                  |                  |
| SHOTI-ACTING   | <u>c./c</u>          | 4/.0           | C. /4             | 04.1                      | /1.0               | 00.9            | 00.0             | /0.0             |
| Long-acting<br>Method mix                              | 62.5                 | 52.2           | 52.5              | 35.9                      | 29.0               | 31.1            | 34.0             | 23.2             |
| Female sterilization                                   | 2.7                  | 1.3            | 1.6               | 1.8                       | 0.7                | 4.5             | 6.6              | 3.5              |
| IUD  | 17.4                 | 6.7            | 8.7               | 1.7                       | 5.4                | 7.4             | 5.2              | 1.6              |
| Implants   | 42.3                 | 44.1           | 42.2              | 32.4                      | 22.9               | 19.3            | 22.2             | 18.1             |
| Injectables  | 20.9                 | 34.7           | 33.0              | 41.5                      | 65.8               | 53.1            | 59.6             | 59.2             |
| Pill   | 13.8                 | 13.0           | 14.2              | 22.6                      | 5.1                | 15.7            | 5.1              | 16.7             |
| Other modern   | 2.8                  | 0.1            | 0.4               | 0.0                       | 0.1                | 0.1             | 1.3              | 0.9              |





In terms of couple characteristics, in all countries except Mali, most couples were the same age or within five years. In 30 percent to 38 percent of couples across all countries, husbands were six to 10 years older than wives. In Benin, Ethiopia, Nigeria, and Sierra Leone, in approximately 20 percent of couples, the husband was at least 11 years older than the wife, while this reached 32 percent in Mali. Husband–wife education differentials also varied across countries.

In this population of modern users, the method mix varied across countries. Short-acting methods were more popular in East African countries and Sierra Leone, where injectable contraception was the predominant method. Long-acting methods were more popular in three of the four West African countries (Benin, Mali, and Nigeria), where implants were the most used.

#### Factors Associated with Covert use

Figure 1 displays the distribution of the bivariate relationships between perceptions of husbands' fertility preferences and type of contraceptive use in eight SSA countries. Across all countries, there was a significant or marginally significant relationship between the type of use and the wife's perception of her husband's fertility preference. Overt users were more likely to perceive that their husbands wanted the same or fewer children, while covert users were more likely to report that their husbands wanted more children than them or that they did not know their husbands' fertility preferences.

Several other factors were related to overt use at the bivariate level, although these patterns were not consistent across countries (Tables 2 and 3). In Ethiopia, Kenya, and Zambia,

|   |                                      |                                      |         |                                      | R                          | egion, coun | try, type of                       | use  |          |                                      |                                      |              |
|---|--------------------------------------|--------------------------------------|---------|--------------------------------------|----------------------------|-------------|------------------------------------|--|----------|--------------------------------------|--------------------------------------|--------------|
|   |                                      |                                      |         |                                      |                            | West        | Africa                             |  |          |                                      |                                      |              |
|   | Be                                   | min (2017/2                          | 018)    |                                      | Mali (2018                 |             |                                    | Nigeria (20  | 18)      | Sie                                  | rra Leone (                          | 2019)        |
| Number of couples<br>All couples (%)  | Overt<br>202<br>100                  | Covert<br>79<br>100                  | p value | Overt<br>233<br>100                  | Covert<br>87<br>100        | p value     | Overt<br>535<br>100                | Covert<br>98<br>100                                | p value  | Overt<br>306<br>100                  | Covert<br>142<br>100                 | p value      |
| Wife's perception of husband's perference<br>Both want same/husband wants less<br>Husband wants more<br>Do not know<br>Thousehold characteristics | 53.5<br>29.2<br>17.2                 | 40.1<br>26.5<br>33.4                 | 0.05*   | 39.0<br>26.8<br>34.2                 | 18.4<br>42.3<br>39.3       | 0.02**      | 71.2<br>21.0<br>7.8                | 40.9<br>48.0<br>11.2                               | <0.01*** | 73.7<br>8.0<br>18.3                  | 44.8<br>19.2<br>36.0                 | <0.01***     |
| Trouseriou weatin<br>Lower middle<br>Middle Middle Highest<br>Highest   | 12.8<br>16.7<br>13.2<br>19.8<br>37.4 | 23.2<br>21.5<br>14.1<br>22.3<br>18.9 | 0.08*   | 10.0<br>12.7<br>17.4<br>26.7<br>33.2 | 9.9<br>6.8<br>30.7<br>40.4 | 0.57        | 5.4<br>8.4<br>18.4<br>30.1<br>37.7 | 4.3<br>9.7<br>24.9<br>33.9                         | 0.53     | 16.0<br>13.1<br>19.2<br>23.0<br>28.7 | 14.0<br>20.2<br>17.4<br>22.5<br>25.9 | 0.64         |
| kesidence<br>Urban<br>Rural<br>Wife characteristics   | 62.3<br>37.7                         | 42.1<br>57.9                         | 0.01**  | 33.5<br>66.5                         | 42.1<br>57.9               | 0.23        | 61.8<br>38.2                       | 59.9<br>40.1                                       | 0.80     | 53.9<br>46.1                         | 46.3<br>53.7                         | 0.25         |
| Age, years<br>15-24<br>25-34<br>35+   | 16.7<br>51.1<br>32.2                 | 13.9<br>51.4<br>34.7                 | 0.85    | 28.7<br>49.6<br>21.7                 | 20.5<br>50.9<br>28.6       | 0.31        | 11.5<br>46.2<br>42.3               | 8.9<br>51.9<br>39.2                                | 0.62     | 16.0<br>55.1<br>28.8                 | 21.8<br>43.4<br>34.8                 | 0.14         |
| ranny<br>0-1 children<br>2-4 children<br>5 plus children  | 10.6<br>49.2<br>40.2                 | 7.3<br>44.0<br>48.7                  | 0.47    | 16.8<br>48.3<br>34.9                 | 6.4<br>48.5<br>45.1        | 0.10        | 7.3<br>53.2<br>39.5                | 4.3<br>55.9<br>39.8                                | 0.64     | 16.9<br>57.9<br>25.2                 | 13.1<br>50.8<br>36.0                 | 0.13         |
| rugnest schooling level<br>None<br>Primary<br>Secondary or higher   | 50.2<br>25.0<br>24.8                 | 62.0<br>19.2<br>18.8                 | 0.29    | 50.2<br>16.6<br>33.3                 | 54.5<br>14.6<br>30.9       | 0.84        | 9.8<br>18.7<br>71.5                | 12.9<br>16.6<br>70.5                               | 0.77     | 46.1<br>15.5<br>38.4                 | 52.2<br>10.4<br>37.4                 | 0.43         |
| wne employed<br>No<br>Yes<br><b>Husband characteristics</b>   | 13.9<br>86.1                         | 18.6<br>81.4                         | 0.43    | 36.6<br>63.4                         | 42.3<br>57.7               | 0.45        | 15.7<br>84.3                       | 12.1<br>87.9                                       | 0.41     | 19.4<br>80.6                         | 14.6<br>85.4                         | 0.33         |
| Age, years<br>15-24<br>25-34<br>35+   | 6.0<br>39.5<br>54.5                  | 6.0<br>28.5<br>65.6                  | 0.28    | 4.0<br>40.8<br>55.2                  | 2.9<br>29.3<br>67.8        | 0.30        | 2.0<br>24.1<br>73.8                | $\begin{array}{c} 0.9 \\ 17.8 \\ 81.4 \end{array}$ | 0.31     | 2.7<br>39.8<br>57.4                  | 3.1<br>40.6<br>56.3                  | 0.98         |
|   |                                      |                                      |         |                                      |                            |             |                                    |  |          | (C                                   | ontinued oi                          | ı next page) |

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| TABLE 2 (Continued)                                  |      |            |            |      |             |             |              |             |            |              |             |       |
|--|------|------------|------------|------|-------------|-------------|--------------|-------------|------------|--------------|-------------|-------|
|  |      |            |            |      | Re          | egion, coun | try, type of | use         |            |              |             |       |
|  |      |            |            |      |             | West        | Africa       |             |            |              |             |       |
| I  | Bei  | in (2017/: | 2018)      |      | Mali (2018) |             | V            | Vigeria (20 | 18)        | Sier         | ra Leone (2 | (610) |
| Highest schooling level                              |      |            |            |      |             |             |              |             |            |              |             |       |
| None   | 36.8 | 52.7       | $0.09^{*}$ | 46.5 | 53.9        | 0.61        | 7.5          | 11.8        | 0.38       | 31.9         | 39.5        | 0.37  |
| Primary  | 25.1 | 17.9       |            | 16.9 | 14.2        |             | 17.0         | 11.0        |            | 12.4         | 12.5        |       |
| Secondary or higher                                  | 38.1 | 29.4       |            | 36.6 | 31.9        |             | 75.6         | 77.2        |            | 55.7         | 48.0        |       |
| Couple characteristics                               |      |            |            |      |             |             |              |             |            |              |             |       |
| Difference between husband and wite age, years       |      |            |            |      |             |             |              |             | ļ          |              |             |       |
| Wife older than husband                              | 8.0  | 6.4        | 0.48       | 1.2  | 24.9        | 0.54        | 2.5          | 0.6         | $0.07^{*}$ | 3.9          | 6.6         | 0.50  |
| Wife and husband same age or within $+/-5$           | 43.1 | 51.6       |            | 30.6 | 40.2        |             | 38.8         | 46.7        |            | 47.1         | 39.1        |       |
| years  |      |            |            |      |             |             |              |             |            |              |             |       |
| Husband older by 6–10 years                          | 31.8 | 22.2       |            | 37.6 | 34.9        |             | 38.6         | 24.1        |            | 28.2         | 32.6        |       |
| Husband older by 11+ years                           | 17.1 | 19.8       |            | 30.6 |             |             | 20.1         | 28.6        |            | 20.8         | 21.7        |       |
| Difference between husband and wife schooling, years | s    |            |            |      |             |             |              |             |            |              |             |       |
| Wife more school than husband                        | 15.9 | 14.9       | 0.45       | 21.0 | 24.1        | 0.57        | 20.8         | 13.9        | 0.44       | 20.0         | 19.4        | 0.99  |
| Wife and husband same school                         | 34.7 | 46.6       |            | 43.0 | 46.6        |             | 37.0         | 48.1        |            | 31.9         | 32.6        |       |
| Husband more school by 1–5 years                     | 26.4 | 23.0       |            | 19.0 | 11.2        |             | 25.5         | 22.9        |            | 21.9         | 23.0        |       |
| Husband more school by 6–10 years                    | 16.9 | 13.2       |            | 15.8 | 18.1        |             | 13.0         | 10.1        |            | 15.3         | 15.7        |       |
| Husband more school by 11+ years                     | 6.1  | 2.3        |            | 1.3  |             |             | 3.7          | 5.0         |            | 10.9         | 9.3         |       |
| Contraceptive characteristics as reported by the wom | ıan  |            |            |      |             |             |              |             |            |              |             |       |
| Method longevity                                     |      |            |            |      |             |             |              |             |            |              |             |       |
| Short-acting   | 39.6 | 32.6       | 0.33       | 50.4 | 40.6        | 0.20        | 46.3         | 53.9        | 0.29       | 64.6         | 62.9        | 0.80  |
| Long-acting  | 60.4 | 67.4       |            | 49.0 | 4.60        |             | 1.50         | 46.1        |            | <i>5</i> 0.4 | 37.J        |       |
| Method mix   |      |            |            |      |             |             |              |             |            |              |             |       |
| Female sterilization                                 | 1.7  | 5.2        | 0.26       | 1.7  | 0.4         | 0.40        | 1.9          |             | 0.21       | 2.2          | 0.7         | 0.78  |
| IUD  | 19.3 | 12.9       |            | 6.5  | 7.3         |             | 8.8          | 8.2         |            | 1.6          | 2.0         |       |
| Implants   | 39.4 | 49.3       |            | 41.5 | 51.8        |             | 43.1         | 37.9        |            | 31.6         | 34.3        |       |
| Injectables  | 23.5 | 14.3       |            | 35.7 | 31.9        |             | 33.6         | 30.0        |            | 40.7         | 43.3        |       |
| Pill   | 13.5 | 14.8       |            | 14.6 | 8.7         |             | 12.2         | 23.9        |            | 23.8         | 19.6        |       |
| Other modern   | 2.6  | 3.5        |            | 0.1  |             |             | 0.5          |             |            |              |             |       |
| Number of couples                                    | 202  | 79         |            | 233  | 87          |             | 535          | 98          |            | 306          | 142         |       |

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 $p_{\rm e}^{*} p < 0.10, ^{**} p < 0.05, ^{***} p < 0.01.$ 

|  |                                      |                                      |         |                                      | Reg                        | țion, count | ry, type of                        | use                                |          |                                      |                                      |            |
|--|--------------------------------------|--------------------------------------|---------|--------------------------------------|----------------------------|-------------|------------------------------------|------------------------------------|----------|--------------------------------------|--------------------------------------|------------|
|  |                                      |                                      |         |                                      |                            | West .      | Africa                             |                                    |          |                                      |                                      |            |
|  | Ber                                  | iin (2017/2                          | (018)   |                                      | Mali (2018)                |             | Z                                  | igeria (20)                        | 18)      | Sier                                 | ra Leone (2                          | (610       |
| Number of couples<br>All couples (%)   | Overt<br>202<br>100                  | Covert<br>79<br>100                  | p value | Overt<br>233<br>100                  | Covert<br>87<br>100        | p value     | Overt<br>535<br>100                | Covert<br>98<br>100                | p value  | Overt<br>306<br>100                  | Covert<br>142<br>100                 | p value    |
| Wife's perception of husband's fertility preference<br>Both want same/husband wants less<br>Husband wants more<br>Do not know<br>Household characteristics | 53.5<br>29.2<br>17.2                 | 40.1<br>26.5<br>33.4                 | 0.05*   | 39.0<br>26.8<br>34.2                 | 18.4<br>42.3<br>39.3       | 0.02**      | 71.2<br>21.0<br>7.8                | 40.9<br>48.0<br>11.2               | <0.01*** | 73.7<br>8.0<br>18.3                  | 44.8<br>19.2<br>36.0                 | <0.01***   |
| Tousstood weatur<br>Lowest<br>Niddle<br>Middle highest<br>Highest  | 12.8<br>16.7<br>13.2<br>19.8<br>37.4 | 23.2<br>21.5<br>14.1<br>22.3<br>18.9 | 0.08*   | 10.0<br>12.7<br>17.4<br>26.7<br>33.2 | 9.9<br>6.8<br>30.7<br>40.4 | 0.57        | 5.4<br>8.4<br>18.4<br>30.1<br>37.7 | 4.3<br>9.7<br>27.2<br>24.9<br>33.9 | 0.53     | 16.0<br>13.1<br>19.2<br>23.0<br>28.7 | 14.0<br>20.2<br>17.4<br>22.5<br>25.9 | 0.64       |
| Kesidence<br>Urban<br>Rural<br>Wije characteristics  | 62.3<br>37.7                         | 42.1<br>57.9                         | 0.01**  | 33.5<br>66.5                         | 42.1<br>57.9               | 0.23        | 61.8<br>38.2                       | 59.9<br>40.1                       | 0.80     | 53.9<br>46.1                         | 46.3<br>53.7                         | 0.25       |
| Age, years<br>15-24<br>25-34<br>35+  | 16.7<br>51.1<br>32.2                 | 13.9<br>51.4<br>34.7                 | 0.85    | 28.7<br>49.6<br>21.7                 | 20.5<br>50.9<br>28.6       | 0.31        | 11.5<br>46.2<br>42.3               | 8.9<br>51.9<br>39.2                | 0.62     | 16.0<br>55.1<br>28.8                 | 21.8<br>43.4<br>34.8                 | 0.14       |
| raruy<br>0-1 children<br>2-4 children<br>5 plus children   | 10.6<br>49.2<br>40.2                 | 7.3<br>44.0<br>48.7                  | 0.47    | 16.8<br>48.3<br>34.9                 | 6.4<br>48.5<br>45.1        | 0.10        | 7.3<br>53.2<br>39.5                | 4.3<br>55.9<br>39.8                | 0.64     | 16.9<br>57.9<br>25.2                 | 13.1<br>50.8<br>36.0                 | 0.13       |
| Fignest schooling level<br>None<br>Primary<br>Secondary or higher  | 50.2<br>25.0<br>24.8                 | 62.0<br>19.2<br>18.8                 | 0.29    | 50.2<br>16.6<br>33.3                 | 54.5<br>14.6<br>30.9       | 0.84        | 9.8<br>18.7<br>71.5                | 12.9<br>16.6<br>70.5               | 0.77     | 46.1<br>15.5<br>38.4                 | 52.2<br>10.4<br>37.4                 | 0.43       |
| wne employed<br>No<br>Yes<br><b>Husband characteristics</b>  | 13.9<br>86.1                         | 18.6<br>81.4                         | 0.43    | 36.6<br>63.4                         | 42.3<br>57.7               | 0.45        | 15.7<br>84.3                       | 12.1<br>87.9                       | 0.41     | 19.4<br>80.6                         | 14.6<br>85.4                         | 0.33       |
| Age, years<br>15-24<br>25-34<br>35+  | 6.0<br>39.5<br>54.5                  | 6.0<br>28.5<br>65.6                  | 0.28    | 4.0<br>40.8<br>55.2                  | 2.9<br>29.3<br>67.8        | 0.30        | 2.0<br>24.1<br>73.8                | 0.9<br>17.8<br>81.4                | 0.31     | 2.7<br>39.8<br>57.4                  | 3.1<br>40.6<br>56.3                  | 0.98       |
|  |                                      |                                      |         |                                      |                            |             |                                    |                                    |          | (Co                                  | ntinued on                           | next page) |

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|   |      |            |            |      | Reg         | ion, counti | y, type of | use         |            |        |             |      |
|---|------|------------|------------|------|-------------|-------------|------------|-------------|------------|--------|-------------|------|
|   |      |            |            |      |             | West A      | vfrica     |             |            |        |             |      |
|   | Benj | in (2017/2 | 018)       | V    | fali (2018) |             | N          | geria (2018 | 3)         | Sierra | t Leone (20 | (61  |
| Highest schooling level   |      |            |            |      |             |             |            |             |            |        |             |      |
| None  | 36.8 | 52.7       | $0.09^{*}$ | 46.5 | 53.9        | 0.61        | 7.5        | 11.8        | 0.38       | 31.9   | 39.5        | 0.37 |
| Primary   | 25.1 | 17.9       |            | 16.9 | 14.2        |             | 17.0       | 11.0        |            | 12.4   | 12.5        |      |
| Secondary or higher   | 38.1 | 29.4       |            | 36.6 | 31.9        |             | 75.6       | 77.2        |            | 55.7   | 48.0        |      |
| Couple characteristics  |      |            |            |      |             |             |            |             |            |        |             |      |
| Difference between husband and wife age, years                        |      |            |            |      |             |             |            |             |            |        |             |      |
| Wife older than husband   | 8.0  | 6.4        | 0.48       | 1.2  | 24.9        | 0.54        | 2.5        | 0.6         | $0.07^{*}$ | 3.9    | 6.6         | 0.50 |
| Wife and husband same age or within $+/-5$ years                      | 43.1 | 51.6       |            | 30.6 | 40.2        |             | 38.8       | 46.7        |            | 47.1   | 39.1        |      |
| Husband older by 6–10 years   | 31.8 | 22.2       |            | 37.6 | 34.9        |             | 38.6       | 24.1        |            | 28.2   | 32.6        |      |
| Husband older by 11+ years  | 17.1 | 19.8       |            | 30.6 |             |             | 20.1       | 28.6        |            | 20.8   | 21.7        |      |
| Difference between husband and wife schooling, years                  |      |            |            |      |             |             |            |             |            |        |             |      |
| Wife more school than husband   | 15.9 | 14.9       | 0.45       | 21.0 | 24.1        | 0.57        | 20.8       | 13.9        | 0.44       | 20.0   | 19.4        | 0.99 |
| Wife and husband same school  | 34.7 | 46.6       |            | 43.0 | 46.6        |             | 37.0       | 48.1        |            | 31.9   | 32.6        |      |
| Husband more school by 1–5 years                                      | 26.4 | 23.0       |            | 19.0 | 11.2        |             | 25.5       | 22.9        |            | 21.9   | 23.0        |      |
| Husband more school by 6–10 years                                     | 16.9 | 13.2       |            | 15.8 | 18.1        |             | 13.0       | 10.1        |            | 15.3   | 15.7        |      |
| Husband more school by 11+ years                                      | 6.1  | 2.3        |            | 1.3  |             |             | 3.7        | 5.0         |            | 10.9   | 9.3         |      |
| Contraceptive characteristics as reported by the woman                |      |            |            |      |             |             |            |             |            |        |             |      |
| Method longevity  |      |            |            |      |             |             |            |             |            |        |             |      |
| Short-acting  | 39.6 | 32.6       | 0.33       | 50.4 | 40.6        | 0.20        | 46.3       | 53.9        | 0.29       | 64.6   | 62.9        | 0.80 |
| Long-acting   | 60.4 | 67.4       |            | 49.6 | 59.4        |             | 53.7       | 46.1        |            | 35.4   | 37.1        |      |
| Method mix  |      |            |            |      |             |             |            |             |            |        |             |      |
| Female sterilization  | 1.7  | 5.2        | 0.26       | 1.7  | 0.4         | 0.40        | 1.9        |             | 0.21       | 2.2    | 0.7         | 0.78 |
| IUD   | 19.3 | 12.9       |            | 6.5  | 7.3         |             | 8.8        | 8.2         |            | 1.6    | 2.0         |      |
| Implants  | 39.4 | 49.3       |            | 41.5 | 51.8        |             | 43.1       | 37.9        |            | 31.6   | 34.3        |      |
| Injectables   | 23.5 | 14.3       |            | 35.7 | 31.9        |             | 33.6       | 30.0        |            | 40.7   | 43.3        |      |
| Pill  | 13.5 | 14.8       |            | 14.6 | 8.7         |             | 12.2       | 23.9        |            | 23.8   | 19.6        |      |
| Other modern  | 2.6  | 3.5        |            | 0.1  |             |             | 0.5        |             |            |        |             |      |
| Number of couples   | 202  | 62         |            | 233  | 87          |             | 535        | 98          |            | 306    | 142         |      |
| $p_{1}^{*} = p_{1}^{*} = 0.10, p_{1}^{*} = 0.05, p_{1}^{***} = 0.01.$ |      |            |            |      |             |             |            |             |            |        |             |      |

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TABLE 3 (Continued)

1.36 (0.72, 2.59)

1.31 (0.67, 2.58)

| Country      | Husband wants        | more (vs. same)      | Do not kno           | w (vs. same)        |
|--------------|----------------------|----------------------|----------------------|---------------------|
|              | Unadjusted OR        | aOR                  | Unadjusted OR        | aOR                 |
| Benin        | 1.21 (0.55, 2.66)    | 0.92 (0.44, 1.95)    | 2.58 (1.15, 5.78)**  | 2.49 (1.07, 5.77)** |
| Mali         | 3.36 (1.32, 8.54)**  | 4.01 (1.68, 9.58)*** | 2.44 (0.91, 6.50)*   | 2.89 (1.14, 7.32)** |
| Nigeria      | 3.98 (2.12, 7.48)*** | 3.90 (2.13, 7.17)*** | 2.49 (0.95, 6.56)*   | 2.72 (1.00, 7.39)** |
| Sierra Leone | 3.92 (1.91, 8.07)*** | 3.79 (1.81, 7.92)*** | 3.24 (1.84, 5.69)*** | 3.76 (2.14, 6.62)** |
| Ethiopia     | 3.43 (1.94, 6.08)*** | 3.34 (1.87, 5.97)*** | 2.21 (1.24, 3.92)*** | 2.02 (1.11, 3.69)** |
| Kenva        | 3.57 (2.38, 5.35)*** | 3.38 (2.24, 5.11)*** | 3.96 (2.28, 6.86)*** | 3.82 (2.29, 6.37)** |
| Uganda       | 2.96 (1.48, 5.90)*** | 3.29 (1.65, 6.56)*** | 2.23 (1.06, 4.71)**  | 2.43 (1.07, 5.50)** |

2.89 (1.75, 4.76)\*\*\*

TABLE 4 Unadjusted and adjusted odds ratios (aOR) for perceptions associated with covert use, compared to overt use among couples in four SSA countries

 $p^* < 0.10, p^* < 0.05, p^* < 0.01.$ 

3.46 (1.90, 6.30)\*\*\*

wealth was related to the type of use. In Ethiopia and Kenya, there were higher percentages of covert users in the lower wealth quintiles than overt users, while in Zambia, this relationship seemed to go in the opposite direction. In three of the East African countries (Ethiopia, Kenya, and Zambia), there was a relationship between the type of use and the wife's age; covert users were more likely to be older, while overt users were more likely to be in the youngest age group. In three East African countries (Ethiopia, Kenya, and Uganda), there were significant or marginally significant relationships between wives' schooling attainment and type of use, with overt users more likely to report having at least a secondary education.

In Benin, Ethiopia, Kenya, and Uganda, there was a significant or marginally significant relationship between husbands' highest schooling level and type of use; overt users' husbands were more likely to have completed at least a secondary education, while those of covert users were more likely to have no formal education.

#### **Regression Analyses**

In the simple logistic regressions, across all countries except for Benin, perceptions that husbands wanted more children were associated with higher odds of using covertly, compared to perceptions that husbands wanted the same or fewer children (Figure 2, Table 4). The strength of the relationships ranged from odds ratio (OR) 2.96 (95 percent CI 1.48–5.90) in Uganda to 3.98 (2.12–7.48) in Nigeria. Not knowing husbands' fertility preferences was also associated with increased odds of using covertly, compared to perceiving that husbands wanted the same or fewer children in all countries except Zambia, with ORs ranging from 2.21 (95 percent CI 1.24–3.92) in Ethiopia to 3.96 (95 percent CI 2.28–6.86) in Kenya, although the associations were only marginally significant (p < 0.10) in Nigeria and Mali.

In the multivariable logistic regressions, relationships between the perception of husbands' fertility preference and covert contraceptive use remained almost the same as those from unadjusted models across countries (Figure 2, Table 4; the full multivariable model for each country can be found in the Online Appendix.) While in some countries (Benin, Ethiopia, Kenya, and Zambia), both relationships were slightly attenuated in the fully adjusted models, in Mali and Uganda, the strength of the associations increased in the fully adjusted models. In Nigeria and Sierra Leone, one relationship became stronger (husband wants more), and one was attenuated (do not know vs. husband wants same). In all countries except for Benin, women who perceived their husbands wanted more children than them had

Zambia





NOTE: Reference category is perception that husband wants the same or less number of children. Adjusted models include household wealth quintile, residence, wife's age, wife's parity, wife's highest education completed, wife's employment status, husband and wife age differential, and husband and wife schooling difference.

increased odds of using covertly, compared to those who reported their husbands wanted the same number or fewer children, ranging from adjusted OR (aOR) 2.89 (95 percent CI 1.75–4.76) in Zambia to aOR 4.01 (95 percent CI 1.68–9.58) in Mali. In all countries except for Zambia, women who did not know their husbands' fertility preferences had increased odds of using covertly, compared to those who reported their husbands wanted the same number or fewer children, ranging from aOR 2.02 (95 percent CI 1.11–3.69) in Ethiopia to aOR 3.82 (95 percent CI 2.29–6.37) in Kenya.

We conducted additional analyses with the six countries that employed the gender-based violence module to see if the relationship between perceptions of fertility preferences and covert use changed after including a measure of whether the woman ever reported experiencing violence. We found that the inferences of our final multivariable models, when repeated among the women selected for the model and using the specified gender-based violence weights, remained in the same direction and significant at p < 0.05 for all countries (Appendices T1–T8, Model 3). Only in Ethiopia and Nigeria did the confidence intervals for the aORs for wives who did not know their husbands' fertility preferences include 1.00.

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# DISCUSSION

This study used an indirect estimate of female covert use in eight SSA countries to test the association between covert use among wives and their perceptions of their husbands' fertility preferences. In seven of eight countries (except Benin), wives who perceived that their husbands wanted more children than them had increased odds of using covertly, compared to those who perceived that their husbands wanted the same number or fewer children. In addition, women who did not know their husbands' fertility preferences also had increased odds of using covertly, compared to those who perceived their husbands wanted the same/less children in all countries except Zambia.

While there were some patterns between other sociodemographic characteristics and covert use that corroborate previous studies, in general, these factors were not consistently associated with the type of use across studies. In contrast, the association between type of contraceptive use and our main variable of interest—perceptions of husbands' fertility preferences—was present across all eight countries and maintained significance in fully adjusted models. Thus, despite the diversity of the countries' social and geographic contexts, these women's perceptions are a salient determinant of covert use.

There are several possible and interrelated reasons why perceptions are linked to covert use. First, in the most literal interpretation, women who perceive more pronatal fertility preferences from their husbands may choose to use covertly as a means of achieving their own reproductive goals to space or limit childbearing. In many of the countries analyzed here, husbands are still considered the main decision-makers about the number of children a family has (Aransiola et al. 2014), and wives may not believe they have the power in their relationships to negotiate the family size. In addition, even if women believed they could negotiate with their husbands on the number of children, they may be using covertly to avoid their husbands' opposition to family planning. Qualitative studies have found that husbands may oppose family planning due to religious beliefs, and beliefs that family planning will promote promiscuity, infidelity, or cause infertility (Adanikin, McGrath, and Padmadas 2019; Aransiola et al. 2014; Baiden et al. 2016; Rutenberg and Watkins 1997). Furthermore, women who perceive discordant fertility preferences may be using covertly to avoid sensitive discussions around sex, family size, and/or family planning that could result in conflict; such motivations have been cited in other work (Biddlecom and Fapohunda 1998; Blanc et al. 1996; Kaneka and Mturi 2015). Studies have shown that women would rather engage in covert use and maintain peace in their marriages rather than risk discussions that could spark tension and suspicions (Adanikin, McGrath, and Padmadas 2019; Kaneka and Mturi 2015). Unfortunately, we cannot discern the relative influence of each of these concerns, as DHSs no longer ask questions that measure perceptions of spousal approval of contraception or spousal communication around family size and contraception.

A unique contribution of our study is that wives who reported not knowing their partners' fertility preferences were also more likely to use covertly. While this relationship was presented in an early study of negotiations on fertility issues among couples in Uganda (Blanc et al. 1996), it has largely been missing from recent studies. Overall proportions of women reporting that they do not know their husbands' fertility preferences ranged from 8 percent in Kenya and Nigeria to over one-third of the wives in Mali (36 percent) and Sierra Leone (42 percent), and in all countries except Zambia, these women were more likely to use covertly than those who perceived concordant fertility preferences. It is possible that some of the same links between perceived discordance and covert use illuminate the connection between not knowing partner fertility preferences and covert use. For example, wives who do not know their husbands' fertility preferences similarly may not wish to even broach the subject of family size due to cultural norms that inhibit such discussions.

Nevertheless, future work should investigate *why* women in this group report that they do not know their partners' fertility preferences. Do these wives not communicate about fertility preferences at all within their partnerships because these discussions are culturally taboo? Would they like to know their partners' fertility preferences? Is it possible that their partners share the same fertility preferences, meaning that women could potentially be using overtly instead of covertly? Although we were unable to quantitatively explore these questions due to the constraints of the current DHS survey questionnaire, we encourage future studies—particularly qualitative studies—on this important topic given its connection to covert use.

#### **Implications and Recommendations**

There are practical reproductive health implications in choosing to practice covert use of contraception. From a family planning perspective, there may be negative reproductive health consequences from using covertly. Qualitative research suggests higher discontinuation rates among covert as opposed to overt users; covert users may be less inclined to seek treatment or switch methods due to feared or experienced side effects, especially if side effects (e.g., menstrual changes) may expose their secret use (Biddlecom and Fapohunda 1998; Castle et al. 1999; Kibira et al. 2020). These risks are further exacerbated when wives rely on their husbands for financial resources to access health care and treatment (Biddlecom and Fapohunda 1998). A qualitative study in Senegal revealed that covert users of pills and injectables were late in refilling the pill or getting their shots because they often had to wait until their husbands were traveling to attend the clinic, seek services at a distant facility to avoid being identified, or pretend to be sick as an excuse to go to a facility (Cavallaro et al. 2018).

In addition to the clinical consequences of covert use, covert use can also cause emotional distress for the user. Studies of women in unions often find that women are conflicted about covert use, whether it is because it creates deception within the relationship and the two families involved in the marriage (Adanikin, McGrath, and Padmadas 2019; Kaneka and Mturi 2015); because it conflicts with their faith (Castle et al. 1999; Heck et al. 2018; Kaneka and Mturi 2015); or because it is looked down upon by other married women (Kaneka and Mturi 2015). Several studies have shown that many women consider covert use as a last resort and would prefer to communicate openly about family planning (Baiden et al. 2016; Harrington et al. 2013, 2019; Kaneka and Mturi, 2015).

Our findings counsel caution and care when designing family planning interventions, given how heterogeneous covert users seem to be, apart from their perceptions of husbands' fertility preferences. Understanding the local prevalence of and factors associated with covert use can help health care practitioners provide more tailored services to women using contraceptives covertly. First, family planning providers should counsel female covert users on issues around side effects and/or menstrual changes to help them identify the best method

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to protect their well-being, given that commonly experienced physiological side effects are often reasons covert users abandon methods due to fear of discovery (Alvergne, Stevens, and Gurmu 2017). Second, health care providers should work to ensure women's privacy by coming up with innovative ways to keep appointments that do not threaten outing their contraceptive use or to integrate family planning into maternal and child health care services so that the purpose of women's visits can be concealed (Baiden et al. 2016; Castle et al. 1999). Health care providers should keep health records at clinic offices so that women do not have to bring them home (Kaneka and Mturi 2015). Other context-specific interventions, such as health surveillance assistants, have been shown to be successful in helping women obtain and continue contraceptive use in secret (Kok et al. 2020).

Given the strong predictive power of perceived husband's pronatalism with covert use, we also encourage the involvement of husbands in interventions and programs when possible and safe. In additional post hoc analyses, we found that among covert users who thought their husbands wanted more children than them, across countries, 22 percent to 45 percent of their respective husbands in fact reported wanting no more children (data not shown), echoing previous studies that found discordance in fertility preferences to be more perceived than real (Blanc et al. 1996; Sarnak and Becker 2022). This suggests that an intervention point for some couples, particularly those in which both partners want no more children or who both want to space, may be via spousal communication, for example, through screening individual partner fertility preferences. These couples may be receptive to negotiating family size and spacing. Many studies also highlight how men and women ideally see family planning as a joint decision and how it can even lead to marital stability (Harrington et al. 2019; Schwandt et al. 2021). Interventions targeting couples could seek to increase couple communication around family size goals and preferences, encourage safe and healthy negotiation, and compromise where spouses differ. Interventions that encourage spousal trust may serve to counter the assumption that family planning encourages spousal infidelity. Indeed, recent studies show promise that couple interventions in the SSA region can be successful in family planning uptake (Abdulkadir et al. 2020; Schwandt et al. 2021).

Furthermore, public health programming could engage men in the broader community, not just in the context of coupled relationships. Interventions that increase knowledge about family planning and birth spacing could be useful among the male population. Despite widespread "knowledge of" or awareness about contraceptive methods by men in many countries, recent qualitative work has found that men cite a specific lack of understanding about family planning as contributing to the stigma around family planning (Harrington et al. 2019). Male involvement more generally can also affect couples indirectly. Programs in Malawi targeting men found that raising awareness led to contraceptive adoption through the pathway of spousal communication within the couple (Hartmann et al. 2012; Shattuck et al. 2011). Male–male outreach and involving male champions for family planning have been cited in previous studies as an effective way to engender behavior change and change social norms (Aransiola et al. 2014). Engaging men more generally in fertility and family planning issues, with the goal of changing gender norms in communities and societies, may target more systemic issues such as patriarchy.

## Limitations

This study has some limitations. First, our measure of covert use was based on an indirect estimate, not a direct question. However, the previously used direct measure on covert use has been dropped from recent DHS questionnaires and is considered a significant underestimate of the true prevalence of covert use (Choiriyyah and Becker 2018). Second, the indirect method we used was also limited to couples in which the woman was using a female-controlled modern method due to the derivation of the measure. Therefore, it excludes couples who are using male-controlled methods, as well as couples where the woman uses traditional methods covertly. While some qualitative studies have highlighted that women may use traditional methods without their partners' knowledge (Biddlecom and Fapohunda 1998; Blanc et al. 1996), recent literature has found that these practices are more common in the context of unmarried women or those not living with a partner, as the concealment of these traditional methods is challenging in unions (Kibira et al. 2020). A third limitation is that this analysis is restricted to women in monogamous unions and is therefore limited in its external validity. We were unable to include polygamous couples in this study because it was not possible to match men's responses in DHSs to specific partners. Although covert use is more common among women in polygamous unions or those who are not married (Baiden et al. 2016; Heck et al. 2018; Kibira et al. 2020; OlaOlorun, Anglewicz, and Moreau 2020; Sarnak et al. 2022), women in monogamous unions remain an important group of covert users. Finally, our study was limited to the eight countries with sufficient sample sizes to conduct these analyses, and therefore, the generalizability to other countries is limited. However, that our main findings were present in this variety of social and geographic contexts suggests that these patterns might be observed in similar contexts.

# CONCLUSION

This study found that wives' perceptions of their husbands' fertility preferences were a strong correlate of whether they were using contraception covertly or overtly. Married and in-union women often face tensions in their reproductive decision-making: men are not traditionally involved in issues of childbirth and child-rearing but are also often the ones who make final decisions about family size (Adelekan, Omoregie, and Edoni 2014). Covert use likely provides one strategy to navigate this tension. By understanding the factors associated with covert use, we can tailor reproductive health interventions that augment women's reproductive autonomy and privacy within the context of family planning service provision (Baiden et al. 2016).

It is also important to acknowledge that the persistent prevalence of covert use suggests that we have yet to fully overcome the structural factors that compel women to use contraception in secret. Twenty years ago, Castle et al. explained that covert use of contraception was a short-term solution, albeit an important one, that would help women control their reproductive futures: "In settings where clandestine use is prevalent, at least in the short term involving men in family planning programs may not always be beneficial, nor may considering the couple as the unit of intervention and analysis always be appropriate" (Castle et al. 1999, 231). Even though covert use can certainly be empowering for some women in the short term (Kibira et al. 2020; OlaOlorun, Anglewicz, and Moreau 2020), we should continue

to work to address the underlying cultural, sociological, and structural reasons that women choose to use covertly (e.g., familial opposition, fertility expectations) while simultaneously supporting women's reproductive well-being through the methods of contraceptive use that they choose.

## DATA AVAILABILITY STATEMENT

All data used in this publication are publicly available at https://dhsprogram.com/.

# REFERENCES

- Abdulkadir, Zainab, Grema Bukar, Michael Godpower and S.Y. Omeiza. 2020. "Effect of Antenatal Couple Counselling on Postpartum Uptake of Contraception among Antenatal Clients and their Spouses attending Antenatal Clinic of a Northern Nigeria Tertiary Hospital: A Randomized Controlled Trial." *West African Journal of Medicine*, 37 (6): 695–702.
- Adanikin, Abiodun Idowu, Nuala McGrath, and Sabu S. Padmadas. 2019. "Power Relations and Negotiations in Contraceptive Decision-Making When Husbands Oppose Family Planning: Analysis of Ethnographic Vignette Couple Data in Southwest Nigeria." *Culture, Health & Sexuality* 21 (12): 1439–1451. https://doi.org/10.1080/13691058.2019.1568576.
- Agadjanian, Victor. 2005. "Fraught with Ambivalence: Reproductive Intentions and Contraceptive Choices in a Sub-Saharan Fertility Transition." *Population Research and Policy Review* 24 (6): 617–645. https://doi.org/10.1007/s11113-005-5096-8.
- Adelekan, Ademola, Philomena Omoregie, and Elizabeth Edoni. 2014. "Male Involvement in Family Planning: Challenges and Way Forward." *International Journal of Population Research* 2014: 1–9. https://doi.org/10.1155/2014/416457.
- Alio, Amina P, Ellen M. Daley, Philip N. Nana, Jingyi Duan, and Hamisu M. Salihu. 2009. "Intimate Partner Violence and Contraception Use among Women in Sub-Saharan Africa." *International Journal of Gynecology & Obstetrics* 107 (1): 35–38. https://doi.org/10.1016/j.ijgo.2009.05.002.
- Alvergne, Alexandra, Rose Stevens, and Eshetu Gurmu. 2017. "Side Effects and the Need for Secrecy: Characterising Discontinuation of Modern Contraception and Its Causes in Ethiopia Using Mixed Methods." Contraception and Reproductive Medicine 2: 24. https://doi.org/10.1186/s40834-017-0052-7.
- Aransiola, Joshua Oyeniyi, Akanni Ibukun Akinyemi, and Adesegun Olayiwola Fatusi. 2014. "Women's Perceptions and Reflections of Male Partners and Couple Dynamics in Family Planning Adoption in Selected Urban Slums in Nigeria: A Qualitative Exploration." BMC Public Health 14 (1): 869. https://doi.org/10.1186/1471-2458-14-869.
- Baiden, F., G. P. Mensah, N. O. Akoto, T. Delvaux, and P. C. Appiah. 2016. "Covert Contraceptive Use among Women Attending a Reproductive Health Clinic in a Municipality in Ghana." *BMC Women's Health* 16: 31. https://doi.org/10.1186/s12905-016-0310-x.
- Bankole, Akinrinola, and Susheela Singh. 1998. "Couples' Fertility and Contraceptive Decision-Making in Developing Countries: Hearing the Man's Voice." International Family Planning Perspectives 24 (1): 15–28. https://doi.org/10.2307/2991915.
- Bawah, Ayaga A. 2002. "Spousal Communication and Family Planning Behavior in Navrongo: A Longitudinal Assessment." Studies in Family Planning 33 (2): 185–194. https://doi.org/10.1111/j.1728-4465.2002.00185.x.
- Becker, Stan, and Amanda Kalamar. 2018. "Sampling Weights for Analyses of Couple Data: Example of the Demographic and Health Surveys." *Demography* 55 (4): 1447–1473. https://doi.org/10.1007/s13524-018-0688-1.
- Biddlecom, Ann E., and Bolaji M. Fapohunda. 1998. "Covert Contraceptive Use: Prevalence, Motivations, and Consequences." Studies in Family Planning 29 (4): 360. https://doi.org/10.2307/172249.
- Blanc, Ann. K., Brent Wolff, Anastasia J. Gage, Alex C. Ezeh, Stella Neema, and John Ssekamatte-Ssebuliba, J. 1996. Negotiating Reproductive Outcomes In Uganda. Calverton. Macro International Inc. https://dhsprogram.com/pubs/pdf/FR75/ 00FrontMatter.pdf
- Bronfenbrenner, Urie. 1977. "Toward an Experimental Ecology of Human Development." American Psychologist 32 (7): 513–531. https://doi.org/10.1037/0003-066x.32.7.513.
- Casterline, John B. and Steven W. Sinding. 2000. "Unmet Need for Family Planning in Developing Countries and Implications for Population Policy," Policy Research Division Working Paper No. 135, Population Council, New York. https://doi.org/10.1111/j.1728-4457.2000.00691.x

#### Sarnak and Gemmill

- Castle, Sarah, Mamadou Kani Konate, Priscilla R. Ulin, and Sarah Martin. 1999. "A Qualitative Study of Clandestine Contraceptive Use in Urban Mali." *Studies in Family Planning* 30 (2):3231–3248. https://doi.org/10.1111/j.1728-4465.1999.00231.x.
- Cavallaro, Francesca L., Diane Duclos, Jenny A. Cresswell, Sylvain Faye, David Macleod, Adama Faye, and Caroline A. Lynch. 2018. "Understanding 'Missed Appointments' for Pills and Injectables: A Mixed Methods Study in Senegal." *BMJ Global Health* 3 (6): e000975. https://doi.org/10.1136/bmjgh-2018-000975
- Choiriyyah, Ifta, and Stan Becker. 2018. "Measuring Women's Covert Use of Modern Contraception in Cross-Sectional Surveys." Studies in Family Planning 49 (2): 143–157. https://doi.org/10.1111/sifp.12053.
- Derose, Laurie F., F. Nii-Amoo DoDoo, and Vrushali Patil. 2002. "Fertility Desires and Perceptions of Power in Reproductive Conflict in Ghana." *Gender & Society* 16 (1): 53–73. https://doi.org/10.1177/0891243202016001004.
- Croft, Trevor N., Aileen M. J. Marshall, Courtney K. Allen, et al. 2018. *Guide to DHS Statistics*. Rockville, MD: ICF. https://dhsprogram.com/data/Guide-to-DHS-Statistics/index.cfm
- Gasca, Natalie C., and Stan Becker. 2018. "Using Couples' Discordant Reports to Estimate Female Covert Use of Modern Contraception in sub-Saharan Africa." *Journal of Biosocial Science* 50 (3): 326–346. https://doi.org/10.1017/s0021932017000256
- Harrington, Elizabeth K., Melissa Withers, Shari Dworkin, Zachary Kwena, Maricianah Onono, Daniel Grossman, Elizabeth Bukusi, Craig Cohen, and Sara Newmann. 2013. "Covert Contraceptive Use and Relationship Power Dynamics among Couples in Nyanza Province, Kenya." Contraception 88 (3): 448–449. https://doi.org/10.1016/j.contraception.2013.05.073.
- Harrington, Elizabeth K., Erin E. McCoy, Alison L. Drake, Daniel Matemo, Grace John-Stewart, John Kinuthia, and Jennifer A. Unger. 2019. "Engaging Men in an MHealth Approach to Support Postpartum Family Planning among Couples in Kenya: A Qualitative Study." *Reproductive Health* 16:17. https://doi.org/10.1186/s12978-019-0669-x.
- Hartmann, Miriam, Kate Gilles, Dominick Shattuck, Brad Kerner, and Greg Guest. 2012. "Changes in Couples' Communication as a Result of a Male-Involvement Family Planning Intervention." *Journal of Health Communication* 17 (7): 802–819. https: //doi.org/10.1080/10810730.2011.650825.
- Heck, Craig J, Stephanie A Grilo, Xiaoyu Song, Tom Lutalo, Neema Nakyanjo, and John S Santelli. 2018. "'It Is My Business': A Mixed-Methods Analysis of Covert Contraceptive Use among Women in Rakai, Uganda." Contraception 98 (1): 41–46. https://doi.org/10.1016/j.contraception.2018.02.017.
- ICF. "The DHS Program." The DHS Program—Quality Information to Plan, Monitor and Improve Population, Health, and Nutrition Programs. Accessed May 18, 2022. https://www.dhsprogram.com/
- Kaneka, Benjamin, and Akim J. Mturi. 2015. "Motivations and Consequences of Secret Contraceptive Use among Young Married Women in Malawi." African Population Studies 29 (2): 2048. https://doi.org/10.11564/29-2-781.
- Kibira, Simon P., Celia Karp, Shannon N. Wood, Selamawit Desta, Hadiza Galadanci, Fredrick E. Makumbi, Elizabeth Omoluabi, Solomon Shiferaw, Assefa Seme, Amy Tsui, and Caroline Moreau. 2020. "Covert Use of Contraception in Three Sub-Saharan African Countries: A Qualitative Exploration of Motivations and Challenges." *BMC Public Health* 20 (1): 865. https://doi.org/10.1186/s12889-020-08977-y.
- Kishor, Sunita, and Lekha Subaiya. 2008. Understanding Women's Empowerment: A Comparative Analysis of Demographic and Health Surveys (DHS) Data. DHS Comparative Reports No. 20. Calverton, MD: Macro International Inc. http://dhsprogram. com/pubs/pdf/CR20/CR20.pdf.
- Kok, Maryse, Madalitso Tolani, Wongani Mtonga, Thom Salamba, Twambilire Mwabungulu, Arnold Munthali, Eefje Smet, and Benedict Chinsakaso. 2020. "Enabling and Hindering Factors of Health Surveillance Assistants' Roles in the Provision of Contraceptive Services in Mangochi, Malawi." *Reproductive Health* 17: 57. https://doi.org/10.1186/s12978-020-0906-3.
- MacPhail, Catherine, Fern Terris-Prestholt, Lilani Kumaranayake, Prudence Ngoako, Charlotte Watts, and Helen Rees. 2009.
  "Managing Men: Women's Dilemmas about Overt and Covert Use of Barrier Methods for HIV Prevention." *Culture, Health & Sexuality* 11 (5): 485–497. https://doi.org/10.1080/13691050902803537.
- Mahler, K. 1999. "Covert Method Use among Urban Zambian Women Is Tied to Poor Spousal Communication on Contraception." *International Family Planning Perspectives* 25 (2): 103. https://doi.org/10.2307/2991949.
- McCarraher, Donna R., Sandra L. Martin, and Patricia E. Bailey. 2006. "The Influence of Method-Related Partner Violence on Covert Pill Use and Pill Discontinuation among Women Living in La Paz, El Alto and Santa Cruz, Bolivia." *Journal of Biosocial Science* 38 (2): 169–186. https://doi.org/10.1017/s0021932005025897

- Miller, Warren, Lawrence Severy, and David Pasta. 2004. "A Framework for Modelling Fertility Motivation in Couples." Population Studies 58 (2): 193–205. https://doi.org/10.1080/0032472042000213712.
- OlaOlorun, Funmilola M., Philip Anglewicz, and Caroline Moreau. 2020. "From Non-Use to Covert and Overt Use of Contraception: Identifying Community and Individual Factors Informing Nigerian Women's Degree of Contraceptive Empowerment." PLoS ONE 15 (1): e0242345. https://doi.org/10.1371/journal.pone.0242345.
- Rutenberg, Naomi, and Susan Cotts Watkins. 1997. "The Buzz Outside the Clinics: Conversations and Contraception in Nyanza Province, Kenya." Studies in Family Planning 28 (4): 290. https://doi.org/10.2307/2137860
- Sarnak, Dana, and Stan Becker. 2022. "Accuracy of Wives' Proxy Reports of Husbands' Fertility Preferences in Sub-Saharan Africa." *Demographic Research* 46: 503–546. https://doi.org/10.4054/demres.2022.46.17
- Sarnak, Dana O., Elizabeth Gummerson, Shannon N. Wood, Funmilola M. OlaOlorun, Simon Peter Kibira, Linnea A. Zimmerman, and Philip Anglewicz. 2022. "Prevalence and Characteristics of Covert Contraceptive Use in the Performance Monitoring for Action Multi-Country Study." *Contraception: X* 4: 100077. https://doi.org/10.1016/j.conx.2022.100077.
- Schwandt, Hilary, Angel Boulware, Julia Corey, Ana Herrera, Ethan Hudler, Claudette Imbabazi, Ilia King, Jessica Linus, Innocent Manzi, Madelyn Merritt, Lyn Mezier, Abigail Miller, Haley Morris, Dieudonne Musemakweli, Uwase Musekura, Divine Mutuyimana, Chimene Ntakarutimana, Nirali Patel, Adriana Scanteianu, Biganette-Evidente Shemeza, Madi Stapleton, Gi'anna Sterling-Donaldson, Chantal Umutoni, Lyse Uwera, Madeleine Zeiler, and Seth Feinberg. 2021. "An Examination of the Barriers to and Benefits from Collaborative Couple Contraceptive Use in Rwanda." *Reproductive Health* 18 (1): 82. https://doi.org/10.1186/s12978-021-01135-6
- Shattuck, Dominick, Brad Kerner, Kate Gilles, Miriam Hartmann, Thokozani Ng'ombe, and Greg Guest. 2011. "Encouraging Contraceptive Uptake by Motivating Men to Communicate about Family Planning: The Malawi Male Motivator Project." American Journal of Public Health 101 (6): 1089–1095. https://doi.org/10.2105/ajph.2010.300091.
- Wilson-Williams, Lyndsey, Rob Stephenson, Sanjay Juvekar, and Karen Andes. 2008. "Domestic Violence and Contraceptive Use in a Rural Indian Village." *Violence Against Women* 14 (10): 1181–1198. https://doi.org/10.1177/1077801208323793.
- Wolff, Brent, Ann K. Blanc, and John Ssekamatte-Ssebuliba. 2000. "The Role of Couple Negotiation in Unmet Need for Contraception and the Decision to Stop Childbearing in Uganda." *Studies in Family Planning* 31 (2): 124–137. https://doi.org/10. 1111/j.1728-4465.2000.00124.x

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