

# Relationship Characteristics and Contraceptive Use Among Couples in Urban Kenya

**CONTEXT:** Few studies have used couple data to identify associations between individual- and relationship-level characteristics and contraceptive use in urban areas.

**METHODS:** Population-based survey data collected in 2010 in three Kenyan cities—Nairobi, Mombasa and Kisumu—were used to identify 883 couples. Bivariate and multivariate analyses were conducted to examine associations between relationship-level characteristics (i.e., desire for another child, and communication about desired number of children and family planning use) and contraceptive use among couples currently using contraceptives; additional analyses investigated intention to use contraceptives among couples currently not practicing contraception.

**RESULTS:** Sixty percent of couples reported current use of contraceptives. In multivariate analyses, couples who desired another child were less likely to use contraceptives than couples who wanted no more children (odds ratio, 0.5). Couples in which both partners reported spousal communication about family planning in the past six months had greater odds of contraceptive use than couples that reported no spousal communication on the subject (3.8). Results from analyses examining associations between relationship-level characteristics and intention to use contraceptives among current nonusers resembled those from analyses of current contraceptive users.

**CONCLUSION:** In this study, relationship-level characteristics were associated with current contraceptive use and intention to use contraceptives among couples in urban Kenya. Family planning programs that promote spousal communication about family planning and desired number of children may improve contraceptive use among urban couples.

*International Perspectives on Sexual and Reproductive Health, 2014, 40(1):11–20, doi: 10.1363/4001114*

By Laili Irani,  
Ilene S. Speizer and  
Jean-Christophe  
Fotso

Laili Irani is doctoral candidate, Ilene S. Speizer is research professor, and Jean-Christophe Fotso is adjunct faculty, all in the Department of Maternal and Child Health, Gillings School of Global Public Health, University of North Carolina, Chapel Hill, NC, USA.

In 1994, participants at the International Conference on Population and Development (ICPD) were encouraged to think of new ways to improve family planning in the developing world. The ICPD's Program of Action emphasized that the active participation of both men and women is essential for reducing unmet need for family planning.<sup>1,2</sup> As a result, men's role in family planning has been highlighted at various public health conferences and in messages from donor agencies, governments and the media. This is particularly important because, in certain societies, women require a man's consent to make reproductive health decisions,<sup>3,4</sup> and lack of male involvement places the heavy burden of reproductive health decision making solely on the woman.<sup>5</sup> Husbands' opinions on family planning may, therefore, result in additional barriers to its use. For example, analysis of 1992 Morocco Demographic and Health Survey (DHS) data found that husbands' fertility desires were associated with women's contraceptive use, after models were adjusted for the women's own fertility desires.<sup>6</sup> Hence, men's involvement in family planning programs and policies is necessary to increase contraceptive uptake.<sup>7</sup>

It is also important that surveys on sexual and reproductive health interview both members of a couple to identify their family planning needs and to account for the

different attitudes, views and needs of the two partners. In a couples study conducted in rural India, spouses gave highly consistent responses on reproductive health events, such as current use of contraceptives (97%), but gave less consistent responses about attitudes toward contraception (84%) and fertility desires (88%).<sup>8</sup> Unfortunately, many studies purported to be on couples include only one partner's responses and assume that interviewees are fully aware of their partner's thoughts and desires. For example, DHS data obtained from 35 countries included only wives' responses about the couple's approval or disapproval of contraceptive use.<sup>9</sup> Because a woman may not truly know her partner's attitudes and desires, information from both partners is needed to produce a more precise understanding of husband-level factors affecting contraceptive use.

In this study, we investigated associations between relationship characteristics and contraceptive use among married and cohabiting couples in three Kenyan urban centers: Nairobi, Mombasa and Kisumu. We hypothesized that couples in which neither spouse desires another child within the next two years will be more likely than others to use contraceptives. Furthermore, couples in which both partners acknowledge having communicated about their desired number of children and about their use of

family planning would be more likely than others to use contraceptives, as better communication may increase partner support in using contraceptives to space or limit childbearing.

### Theoretical Basis

We based our study on social ecological theory, which suggests that an individual's behavior is associated with at least three spheres of influence: individual characteristics, interpersonal features and environmental factors.<sup>10,11</sup> We chose social ecological theory because of its relevance, inclusivity and comprehensibility.

Several demographic studies have identified individual-level traits or social and demographic characteristics that affect contraceptive use, most notably formal education;<sup>12</sup> however, findings on the relative importance of husbands' and wives' education are inconsistent.<sup>13,14</sup> According to a study from Nepal, a husband's education has a greater influence on contraceptive use than his wife's, especially in relation to male-controlled methods such as male sterilization and condoms.<sup>13</sup> An analysis of Bangladesh DHS data found that both partners' education levels were significant determinants of reported contraceptive use.<sup>12</sup> In another study from Bangladesh, as a woman's education level increased, her husband's preference for more children had less effect on her decision to use contraceptives.<sup>14</sup> Unlike the previously mentioned Nepali study, an analysis of data from 14 Sub-Saharan African countries suggests that a woman's education is a stronger predictor of contraceptive use than her husband's education.<sup>13,15</sup> The difference in findings between South Asia and Sub-Saharan Africa might reflect differences in gender context between the two regions, such as the larger proportions of women in Sub-Saharan Africa than in Asia who live alone and raise their children by themselves.<sup>13,16</sup>

Other individual-level factors associated with contraceptive use include spousal age difference, religion and parity. Two studies conducted in Ghana using couple-level data concluded that the greater the age difference between spouses, the lower the probability of contraceptive use, and partners' adherence to different religions was positively associated with method use.<sup>17,18</sup> We note that studies primarily analyzing national-level data across countries have found that both spouses' education, age, religious affiliation and current parity are all associated with contraceptive use;<sup>17-20</sup> however, more research is needed among urban couples on these relationships, because the individual-level characteristics of urban residents may differ from the national average.

Social ecological theory also posits a link between relationship-level factors and contraceptive use. Some research has examined contraceptive use and couples' fertility desires and reported communication.<sup>21-25</sup> According to studies of couples in Nigeria and Pakistan, women tend to use contraceptives when their husbands are satisfied with the number of children they have.<sup>23,25</sup> An analysis of 1989 and 1993 Kenya DHS data found that the proportion

of women using contraceptives was greater if both partners desired no more children than if the wife alone felt that way (39% vs. 23%).<sup>21</sup> Other studies have shown that when women do not desire more children in the near future, but their partner does, the women are more reluctant to use family planning. For example, in a study of couples in two areas of Kenya, women cited lack of partner agreement on fertility desires as a major barrier to contraceptive use;<sup>22</sup> women's covert use of contraceptives was often considered a sign of disrespect by partners, who would scorn the women if they found out.<sup>22</sup> Similarly, an analysis of data from five Asian countries suggests that women did not use contraceptives if their husband desired more children.<sup>24</sup> In other couple-level studies, wives' fertility preferences were more likely to be associated with contraceptive use than their husband's reported preferences.<sup>19,21,26,27</sup> For example, according to a study of married or cohabiting couples in KwaZulu-Natal, South Africa, women's fertility preferences were associated with use, whereas their husband's desires were not.<sup>26</sup> Given these inconsistencies, more couple-level analyses are needed to study associations between contraceptive use and spousal fertility desires and ideal family size.

With respect to couple communication, findings from several studies conducted in Africa and South Asia suggest that communication between partners about fertility and contraception is positively associated with contraceptive use and negatively associated with large family size.<sup>25,28-36</sup> For example, an analysis of 1993 Kenya DHS data found that couples in which both partners reported discussing family planning were more likely to be ever-users of family planning than never-users, although the relationship may go in the other direction (i.e., ever-users being more likely than never-users to discuss family planning).<sup>37</sup> The relationship between couple communication and contraceptive use—adjusting for individual- and environmental-level characteristics within a more defined context, such as an urban setting—remains uninvestigated.

Finally, social ecological theory proposes an association between environmental characteristics and contraceptive use. The few studies that have looked at relationships between women's contraceptive use and household and community characteristics have done so without including other characteristics.<sup>38-42</sup> Most of those have focused on household wealth, used national-level data for developing countries and adjusted for urban-rural differences, and have found that women residing in poorer households are less likely to use contraceptives than richer women.<sup>38,39</sup> Poor women have the lowest level of contraceptive use, which results in the highest rates of unmet need, unwanted pregnancies and fertility.<sup>40-42</sup> Few studies have examined women's contraceptive use and community characteristics, such as neighborhood type (e.g., slum or nonslum).<sup>43,44</sup> Furthermore, few have included both spouses' characteristics and determined whether household characteristics (e.g., household wealth) and community factors (e.g., neighborhood type) together are associated with couples'

contraceptive use, within and across urban settings.

As we have noted above, there is increased literature exploring the effects of individual characteristics on contraceptive use; however, the effects of characteristics relating to couple communication and couple desires, after adjusting for environmental factors, on contraceptive use among couples living in these ever-expanding urban centers have not been jointly studied. The objective of this article is to examine associations between relationship-level characteristics and contraceptive use among couples living in urban Kenya.

## METHODS

### Data and Sample

We used baseline survey data from the Measurement, Learning & Evaluation (MLE) Project in Kenya—the evaluation component of the Urban Reproductive Health Initiative (Urban RH Initiative), which aims to improve the health of urban populations, with special attention to the urban poor, in Kenya, Nigeria and Senegal and in Uttar Pradesh, India. The Urban RH Initiative in Kenya, called Tupange, is helping the government revitalize its urban family planning programs.

As part of an evaluation of interventions to increase contraceptive prevalence among urban populations in Kenya, the MLE Project collected population-level data between September and November 2010 from women in Nairobi, Mombasa, Kisumu, Machakos and Kakamega, and from men in Nairobi, Mombasa and Kisumu. Prior to sample selection, the 2009 census sampling frame was used to classify all primary sampling units in Nairobi, Mombasa and Kisumu as predominantly formal (non-slum) or informal (slum); a household was classified as formal if the dwelling was built on land that the government had allocated for housing and as informal if not. Representative samples of women and men were then selected for interview using a two-stage sampling method. First, samples of primary sampling units were randomly selected to represent each city's population by using probability proportional to population size; half of each sample was selected from the formal settlement strata and the other half from the informal settlement strata. Second, 30 households were randomly chosen from each selected sampling unit for household and individual interviews. All eligible women aged 15–49 from selected households were invited to participate in a pencil-and-paper interviewer-led survey covering basic social and demographic characteristics, reproductive health and family planning use; in half of selected households in Nairobi, Mombasa and Kisumu, all men aged 15–59 were also invited to participate in the survey.

For this analysis, we used data from the 5,774 women and 2,503 men interviewed in Nairobi, Mombasa and Kisumu. The response rates for women were 82%, 85% and 83%, respectively; the weighted mean was 83%. For men, the response rates were 70%, 70% and 56%, and the weighted mean was 66%.<sup>45</sup>

We created a couples data set by matching within a

**TABLE 1. Percentage distribution of married or cohabiting women and men in the couples subsample, by selected characteristics, Nairobi, Mombasa and Kisumu, Kenya, 2010**

Characteristic	Women (N=840)	Men (N=840)
<b>INDIVIDUAL</b>		
<b>Age</b>		
15–24	27.2	9.0
25–34	48.2	46.8
35–59	24.6	44.2
<b>Education</b>		
None/some primary	15.2	8.8
Primary	28.2	20.1
>primary	56.7	71.2
<b>Religion</b>		
Catholic	21.8	23.3
Protestant	68.9	66.4
Muslim/other/none	9.3	10.3
<b>No. of living children</b>		
0	13.1	12.6
1	28.5	24.7
2	24.2	25.5
≥3	34.2	37.2
<b>RELATIONSHIP</b>		
<b>Desire another child</b>		
Yes	52.9	63.4
No	47.1	36.6
<b>Discussed desired no. of children with spouse in past 6 mos.</b>		
Yes	50.3	67.3
No	49.7	32.7
<b>Discussed family planning use with spouse in past 6 mos.</b>		
Yes	45.8	67.2
No	54.2	32.8
<b>Current contraceptive use</b>		
None	39.7	31.6
Injectable	23.5	23.0
Pill	16.1	14.6
Condom	4.9	13.3
Other modern	9.4	6.7
Traditional	6.4	10.8
<b>Intention to use contraceptives†</b>		
Yes	36.7	30.3
No	52.7	46.5
Don't know	10.6	23.3
Total	100.0	100.0

†Among the 333 women and 265 men who reported no current contraceptive use.

household the man who identified as the head with the woman who identified as the spouse of the head; this resulted in a maximum of one couple per household. We dropped 2,452 women and 1,079 men from the analysis because they were not legally married or cohabiting—that is, living together in the same household as a couple. In addition, we dropped 61 women and 16 men because they were not full-time residents of the household; 1,515 women because their homes were not selected for male interviews; 64 men and 306 women because they were not designated as the household head or spouse of the head, respectively; and 557 women and 461 men because their partner did not complete the interview. Thus, our sample

**TABLE 2. Percentage of couples in which spouses reported the same individual-level characteristic or agreed about a relationship-level characteristic**

Characteristic	% (N=840)
<b>INDIVIDUAL</b>	
Age-group	55.7
Education	55.3
Religion	74.1
No. of living children	75.7
<b>RELATIONSHIP</b>	
Desire another child	72.7
Discussed desired no. of children with spouse in last 6 mos.	55.2
Discussed family planning use with spouse in last 6 mos.	57.2
Current contraceptive use	24.6
Intention to use contraceptives	58.2

consisted of 883 couples, which resulted in 840 couples after woman-level population weights were applied.

We performed F tests to determine if the subsample of couples with completed interviews from both partners was similar to the subsample of married or cohabiting women whose partners were identified as the head of the household but who did not complete the survey; the null hypothesis for the tests was that the subsamples were similar. The p values from the F tests showed that women in the two subsamples had similar characteristics.

We obtained approval to conduct the surveys from the University of North Carolina at Chapel Hill institutional review board (UNC IRB) and the Kenya Medical Research Institute; secondary data analysis was exempted from the requirement of ethical approval by the UNC IRB.

### Variables

• *Dependent variables.* Our first outcome of interest was current contraceptive use, as reported by the female partner. Current contraceptive use included all modern and traditional methods: the pill, injectable, IUD, implant, condom, male and female sterilization, Standard Days Method, lactational amenorrhea method, emergency contraceptive pills, calendar method and withdrawal. If more than one contraceptive method was reported, the more effective method was selected. We used women's reported contraceptive use because, in Kenya, men are more likely than women to have extramarital partners and they may have varied their family planning use patterns with different partners.<sup>46,47</sup> Therefore, men's reported contraceptive use may not have accurately reflected the couple's use.

Our second outcome was intention to use contraceptives (intends vs. does not intend) among women currently not practicing contraception.

\*The 20 assets included a vehicle, computer, TV, bicycle, clock, refrigerator, electric stove, mosquito net, VCR, iron, sofa or flashlight; domestic help; the number of rooms in the house; a separate kitchen, electricity, toilet, home insurance, and the types of floors and walls.

†When we ran models with only women's demographic characteristics, the model fit was much lower than when couples' variables were used. Hence, we focused on couple-level characteristics.

• *Independent variables.* We included several relationship-level characteristics to represent couple interactions. Desire for another child was measured by asking both members of a couple, "Would you like to have another child?" We classified joint responses as both partners want another child, neither wants another child and partners had discordant responses. We measured recent communication between spouses about their desired number of children with the question, "Have you and your spouse/partner discussed the number of children you would like to have in the last six months?" On the basis of both partners' answers, we classified responses as: both said that they had discussed desired fertility, both said they had not discussed desired fertility, and partners had discordant responses. Communication between spouses about family planning use was assessed by asking both partners, "Have you and your spouse/partner discussed the use of a family planning method in the last six months?" We classified responses in the same way as responses to the measure of communication about desired fertility.

In addition, we included individual-level and community characteristics. Individual-level characteristics were the age, education level and religion of each spouse, and the couple's number of living children as reported by the wife. Community-level characteristics were neighborhood type (formal or informal) and household wealth—indicators of place-based poverty and asset-based poverty, respectively.<sup>48</sup> The wealth measure was created by using principal components analysis to construct a linear index for each household from 20 asset ownership indicators.<sup>48,49</sup> The wealth index variable was measured in tertiles and the population was assigned to three categories: poor, intermediate and rich. In addition, city of residence (Nairobi, Mombasa or Kisumu) was used as a community-level variable.

### Analysis

We used the responses given by individual husbands and wives to each question or variable to compare the frequency of concordant responses and to quantify agreement between partners' responses.<sup>50</sup> We used F tests to identify significant differences in couples' joint characteristics.

Multivariate analyses were conducted to examine associations between couple interactions (e.g., discussion about desired number of children) and contraceptive use, controlling for individual- and community-level characteristics; the unit of analysis was the couple.<sup>†</sup> We created three multivariate models: The first included only the couple interaction variables, the second added individual-level characteristics and the third added community-level characteristics. Three similar multivariate models were used to examine intention to use contraceptives among couples not currently practicing contraception. All statistical computations were conducted with Stata 12.<sup>51</sup> Analyses were conducted after population weights were applied, to represent the married or cohabiting urban populations of the three study cities; svy commands were used to adjust for the complex sampling design.

## RESULTS

### Characteristics of Women and Their Partners

Generally, wives were younger than their husbands: One-quarter of women (27%) were aged 15–24, whereas only 9% of men were in that age-group (Table 1, page 13). Males tended to be better educated: Seventy-one percent of husbands and 57% of wives had at least some secondary education. About two-thirds of women and men were Protestant, two in 10 were Catholic, and one in 10 were Muslim or members of other faiths. The vast majority of wives and husbands reported having at least one child (87% each).

Fifty-three percent of wives and 63% of husbands wanted to have more children. Similarly, half of wives and two-thirds of husbands reported having discussed the number of children they would like to have with their partner within the six months prior to interview. Fewer than half of women (46%) stated that they had recently talked with their partner about family planning, whereas two-thirds of men (67%) reported that they had done so. The biggest differences in responses were in regard to use of condoms, other modern methods and traditional methods: Among men, 13% reported using condoms, 7% other modern methods and 11% traditional methods, whereas those proportions among women were 5%, 9% and 6%, respectively. Among contraceptive nonusers, 23% of husbands were unsure about whether they intended to use contraceptives; only 11% of wives were unsure.

Spouses in about half of couples (55–56%) reported being in the same age-group and having the same level of education (Table 2). In 74% of couples, partners shared a religion. Spouses in 76% of couples agreed on their number of living children. Agreement between partners about childbearing desires was high (73%); however fewer couples agreed on having discussed their desired number of children or family planning use in the last six months (55–57%), and even fewer agreed on the contraceptive method they were currently using (25%).

### Couples' Characteristics and Contraceptive Use

In the couples sample, 76% resided in Nairobi, 19% in Mombasa and 4% in Kisumu; one in four lived in informal housing. Sixty percent of couples reported current contraceptive use (not shown).

Couples' contraceptive use differed according to several individual-, couple- and community-level characteristics. A greater proportion of couples in which both partners were Protestant or in which partners were of different religions were currently using contraceptives (63–64%), compared with those in which both partners were Catholic or Muslim (50% and 37%, respectively; Table 3). A smaller proportion of couples with no living children than of those with one or more were practicing contraception (24% vs. 62–69%). Contraceptive use was more common among couples in which neither partner desired another child (73%) than among couples in which both partners wanted another child or partners had discordant responses (56% each). Contraceptive use did not differ by couples'

**TABLE 3. Percentage of couples currently using contraceptives, by selected characteristics**

Characteristic	All (N=840)	% using contraceptive
<b>INDIVIDUAL</b>		
<b>Age</b>		
Both 15–34	454	58.2
Both ≥35	193	63.7
Different age-groups	193	62.1
<b>Education</b>		
Both ≤primary	187	51.7
Husband ≥some secondary; wife ≤primary	177	59.9
Wife ≥some secondary; husband ≤primary	55	56.1
Both ≥some secondary	421	64.9
<b>Religion*</b>		
Both Protestant	457	64.2
Both Catholic	96	49.6
Both Muslim/other	56	37.4
Different religions	231	62.7
<b>No. of living children**,†</b>		
0	110	24.0
1	240	61.7
2	203	66.3
≥3	287	68.9
<b>RELATIONSHIP</b>		
<b>Desire another child**</b>		
Both yes	358	55.8
Both no	221	73.4
Discordant responses	261	55.5
<b>Discussed desired no. of children with spouse in last 6 mos.</b>		
Both yes	320	63.7
Both no	172	62.0
Discordant responses	348	56.4
<b>Discussed family planning use with spouse in last 6 mos.**</b>		
Both yes	291	72.9
Both no	182	44.9
Discordant responses	367	58.0
<b>COMMUNITY</b>		
<b>Neighborhood type</b>		
Informal	202	57.2
Formal	638	61.3
<b>Wealth*</b>		
Poor	266	50.4
Intermediate	301	37.4
Rich	273	67.5
<b>City*</b>		
Nairobi	640	62.7
Mombasa	163	52.1
Kisumu	37	54.8

\*p<.05. \*\*p<.01. †As reported by wife.

agreement about whether they had recently discussed their desired number of children; however, a greater proportion of couples in which partners agreed about having discussed family planning in the past six months were using contraceptives (73%), compared with couples in which both partners reported not having talked about it or partners disagreed (45% and 58%, respectively). A greater proportion of the most affluent couples than of

**TABLE 4. Odds ratios (and 95% confidence intervals) from logistic regression analyses assessing couples' likelihood of current contraceptive use, by selected characteristics**

Characteristic	Model 1	Model 2	Model 3
<b>Desire another child</b>			
Both yes	0.37 (0.21–0.65)**	0.57 (0.32–0.99)*	0.54 (0.30–0.98)*
Both no (ref)	1.00	1.00	1.00
Discordant responses	0.41 (0.24–0.68)**	0.72 (0.35–1.51)	0.75 (0.36–1.58)
<b>Discussed desired no. of children with spouse in the last 6 mos.</b>			
Both yes	0.66 (0.30–1.40)	0.68 (0.33–1.42)	0.64 (0.31–1.33)
Both no (ref)	1.00	1.00	1.00
Discordant responses	0.59 (0.28–1.28)	0.55 (0.27–1.09)†	0.55 (0.28–1.11)†
<b>Discussed family planning use with spouse in the last 6 mos.</b>			
Both yes	5.30 (2.75–10.21)**	3.72 (2.00–6.95)**	3.76 (2.00–7.06)**
Both no (ref)	1.00	1.00	1.00
Discordant responses	2.44 (1.46–4.01)**	2.13 (1.30–3.48)**	2.19 (1.33–3.62)**
<b>Age</b>			
Both 15–34	na	1.45 (0.71–2.96)	1.72 (0.80–3.70)
Both ≥35 (ref)	na	1.00	1.00
Different age-groups	na	1.56 (0.78–3.12)	1.76 (0.86–3.62)
<b>Education</b>			
Both ≤primary (ref)	na	1.00	1.00
Husband ≥some secondary; wife ≤primary	na	1.39 (0.76–2.55)	1.22 (0.65–2.30)
Wife ≥some secondary; husband ≤primary	na	1.18 (0.41–3.38)	1.13 (0.39–3.33)
Both ≥some secondary	na	1.56 (0.78–3.12)**	1.72 (0.93–3.19)†
<b>Religion</b>			
Both Protestant	na	3.10 (1.36–7.07)**	2.70 (1.10–6.58)*
Both Catholic	na	1.83 (0.73–4.62)	1.60 (0.58–4.40)
Both Muslim/other (ref)	na	1.00	1.00
Different religions	na	2.93 (1.21–7.06)*	2.66 (1.02–6.89)*
<b>No. of living children‡</b>			
0	na	0.01 (0.033–0.30)**	0.09 (0.03–0.29)**
1	na	0.48 (0.23–1.01)†	0.46 (0.21–0.97)*
2	na	0.62 (0.32–1.22)	0.60 (0.30–1.19)
≥3 (ref)	na	1.00	1.00
<b>Neighborhood type</b>			
Informal	na	na	0.98 (0.60–1.58)
Formal (ref)	na	na	1.00
<b>Wealth</b>			
Poor (ref)	na	na	1.00
Intermediate	na	na	1.28 (0.76–2.15)
Rich	na	na	1.84 (1.04–3.24)*
<b>City</b>			
Nairobi (ref)	na	na	1.00
Mombasa	na	na	0.88 (0.68–1.12)
Kisumu	na	na	0.88 (0.75–1.03)

\*p≤.05. \*\*p≤.01. †p≤.10. ‡As reported by wife. Notes: ref=reference group. na=not applicable.

couples living in poorer households used contraceptives (68% vs. 38–50%). Contraceptive use was more common among couples living in Nairobi (63%) than among those in Mombasa or Kisumu (52% and 55%, respectively).

### Multivariate Findings

In multivariate analyses, couples in which both partners reported wanting another child were less likely to use contraceptives (according to the wife's report) than couples in which both partners reported not wanting another child (Table 4); this finding was significant across all three models (odds ratios, 0.4–0.6). Compared with couples in which partners agreed that they had not discussed family planning with each other in the last six months, those who

agreed that they had done so and those who disagreed on the subject had greater odds of contraceptive use; the findings were significant across all three models (odds ratios, 2.1–5.3).

In model 2, couples in which both spouses had at least some secondary education had greater odds of using contraceptives than couples in which both partners had some primary education or less (odds ratio, 1.6); however, the finding lost significance in the final model. In addition, Protestant couples and couples in which partners had different religions had about three times the odds of Muslim couples of using contraceptives in model 2 (2.9–3.1); these differences decreased but remained significant in the final model (2.7 each). In model 3, couples with no children

**TABLE 5. Odds ratios (and 95% confidence intervals) from logistic regression analyses assessing the likelihood that couples not currently using contraceptives intend to use contraceptives, by selected characteristics**

Characteristic	Model 1	Model 2	Model 3
<b>Desire another child</b>			
Both yes	0.82 (0.12–1.02)	0.12 (0.02–0.78)*	0.17 (0.03–0.81)*
Both no (ref)	1.00	1.00	1.00
Discordant responses	0.43 (0.17–1.53)	0.06 (0.03–1.01)†	0.08 (0.04–1.40)
<b>Discussed desired no. of children with spouse in the last 6 mos.</b>			
Both yes	1.78 (0.61–5.18)	1.55 (0.49–4.83)	1.48 (0.47–4.67)
Both no (ref)	1.00	1.00	1.00
Discordant responses	2.76 (1.16–6.57)*	2.52 (0.95–6.63)†	2.31 (1.08–6.08)*
<b>Discussed family planning use with spouse in the last 6 mos.</b>			
Both yes	6.79 (2.14–21.52)**	5.33 (1.66–17.06)**	5.88 (1.93–17.89)**
Both no (ref)	1.00	1.00	1.00
Discordant responses	2.66 (1.00–7.09)†	2.19 (0.71–6.82)	2.36 (0.78–7.12)
<b>Age</b>			
Both 15–34	na	4.73 (1.28–17.45)*	4.00 (1.03–15.54)*
Both ≥35 (ref)	na	1.00	1.00
Different age-groups	na	2.69 (0.80–9.04)	2.54 (0.75–8.63)
<b>Education</b>			
Both ≤primary (ref)	na	1.00	1.00
Husband ≥some secondary; wife ≤primary	na	1.78 (0.82–3.83)	1.75 (0.76–4.07)
Wife ≥some secondary; husband ≤primary	na	0.26 (0.04–1.50)	0.24 (0.04–1.53)
Both ≥some secondary	na	0.88 (0.42–1.85)	0.95 (0.41–2.18)
<b>Religion</b>			
Both Protestant	na	2.62 (0.84–8.12)†	2.15 (0.68–6.80)
Both Catholic	na	4.18 (1.09–16.10)*	2.99 (0.74–12.10)
Both Muslim/other (ref)	na	1.00	1.00
Different religions	na	2.26 (0.74–6.84)	1.68 (0.52–5.38)
<b>No. of living children‡</b>			
0	na	0.67 (0.20–2.29)	0.72 (0.21–2.50)
1	na	0.78 (0.23–2.63)	0.82 (0.24–2.80)
2	na	0.95 (0.32–2.88)	1.00 (0.33–3.07)
≥3 (ref)	na	1.00	1.00
<b>Neighborhood type</b>			
Informal	na	na	1.05 (0.55–2.02)
Formal (ref)	na	na	1.00
<b>Wealth</b>			
Poor (ref)	na	na	1.00
Intermediate	na	na	0.78 (0.37–1.66)
Rich	na	na	0.55 (0.19–0.96)*
<b>City</b>			
Nairobi (ref)	na	na	1.00
Mombasa	na	na	0.78 (0.52–1.17)
Kisumu	na	na	0.79 (0.60–1.03)

\*p≤.05. \*\*p≤.01. †p≤.10. ‡As reported by wife. Notes: ref=reference group. na=not applicable.

and couples with one living child were less likely than those with three or more children to use contraceptives (0.1 and 0.5, respectively). Finally, the wealthiest couples had almost twice the odds of the poorest couples of using contraceptives (1.8).

According to multivariate analyses among couples not currently practicing contraception, both partners wanting another child was negatively associated in the final model with intending to use contraceptives (odds ratio, 0.2–Table 5). Giving discordant responses about recently having discussed desired number of children and agreeing about recently having discussed family planning were each positively associated in the final model with intention to use contraceptives (2.3 and 5.9, respectively).

## DISCUSSION

In this study, we performed a detailed couple-level analysis of urban populations of Kenya, which are insufficiently studied. According to the most recent Kenya DHS, 20% of urban women aged 15–49 have an unmet need for contraception, about half of which is for spacing (11%) and the other half for limiting (10%).<sup>52</sup> Our analysis shows that almost 60% of the couples interviewed reported current use of contraceptives. Husbands generally desired more children than their wives, a finding that has been documented in previous studies.<sup>19,53</sup> Fewer than two-thirds of husbands and wives reported talking with their spouse about their desired number of children or about family planning use. In multivariate analyses, both partners' desire to not have

another child appeared to be a strong motivator of current and future contraceptive use.

These findings support results from analyses of Kenya DHS data showing that women are more likely to use contraceptives if both spouses desire fewer children.<sup>21</sup> The findings also support our hypothesis that contraceptive use is associated with both spouses' desire not to have another child. This suggests that as couples reach their desired number of children, couple-level family planning use increases.

Our results show that communication between partners about family planning use is associated with current contraceptive use, and with intention to use among those not currently practicing contraception. Similar findings were noted in an analysis of data from Kenyan couples in which higher levels of ever-use of contraceptives were noted among couples who reported spousal communication.<sup>37</sup> The findings also support our hypothesis that contraceptive use and intention to use contraceptives are greater among couples in which both partners report communicating about family planning. On the other hand, contraceptive use could also lead to discussion among couples.

According to our analysis of individual-level characteristics, 90% of the urban Kenyan women were married to men with similar or higher education levels, a finding consistent with previous studies conducted in Central Asia and the Middle East.<sup>34</sup> Furthermore, our bivariate and multivariate analyses indicate that couples in which both partners had more than a primary education were more likely to use contraceptives than couples in which both partners had only some primary education or less. Religion also was associated with contraceptive use in analyses adjusted for other factors. Contraceptive use appears high among Protestant couples, which is consistent with the greater acceptability of contraception in that community.<sup>18</sup> Couples in which partners adhere to different religions were more likely to use contraceptives than those in which both partners were Muslims or followers of other non-Christian faiths, as also noted in couple studies from Ghana.<sup>17,18</sup> Couples with fewer living children were less likely to use contraceptives, a result also found in other couple studies.<sup>19,55</sup>

In summary, we note that our findings on associations between couple- and individual-level characteristics and contraceptive use are consistent with the literature, but add important new insights relating to the urban setting. By accounting for the characteristics of husbands and wives in an urban environment, we have highlighted that couples' desire to not have another child and better spousal communication have an important relationship with couples' contraceptive use and intention to use contraceptives.

### Limitations

Our study is limited by its use of cross-sectional data; we cannot establish temporality or causality of associations between spousal communication or any other variable and contraceptive use. Furthermore, the survey may have

suffered from recall bias; for example, participants may not have accurately recalled discussing their desired number of children with their spouse in the prior six months. Social desirability may have introduced bias, because participants may have wished to look modern by reporting contraceptive use. The prevalence of contraceptive use among our survey respondents, however, was similar to that in DHS data;<sup>52</sup> furthermore, participants were asked to describe several other characteristics regarding their use, reducing the likelihood of such bias. There is also the possibility of interviewer bias, because the reporting of reproductive health practices or discussions related to family planning are generally private matters. To mitigate this potential bias, we used well-trained interviewers who ensured that the surveys were conducted privately. It is also noteworthy that the key independent variables of communication between partners regarding desired number of children and family planning use in the prior six months may be correlated or possibly endogenous. Tests showed a 33% correlation between the two variables, which we determined to be independent enough to include them as separate variables in the multivariate analyses.

### Conclusion

More research on urban couples is needed to understand the barriers they face in accessing family planning services. A longitudinal study that follows couples through the stages of their reproductive life would help to determine the specific challenges they face in deciding to use contraceptives and the barriers they encounter in attempting to obtain family planning services. A qualitative or a longitudinal study in an urban setting would help better clarify the timing of changes in certain couple-level factors: for example, how changes in couples' fertility desires over time influence family planning use (especially if partners' desires change in different ways). In addition, this research could be replicated in other settings with lower contraceptive prevalence to determine whether the results would differ according to the population studied.

Given our finding on the association between spousal communication and contraceptive use, family planning programs that encourage men to be involved in family planning decision making may increase contraceptive use among couples. Male motivation campaigns could include counseling and training in interpersonal communication, as well as multimedia messaging. Outreach health workers can be trained to teach couples basic skills in communicating about family planning-related issues, to address their concerns and to encourage them to participate in ongoing programs.<sup>57</sup> Outreach targeting the poor may be more effective, given that the poorest couples in our sample were less likely than the wealthiest to be using contraceptives.

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## RESUMEN

**Contexto:** No existen muchos estudios que hayan analizado las relaciones que existen entre las características de las parejas, tanto a nivel individual como a nivel de la relación, y el uso de anticonceptivos en áreas urbanas.

**Métodos:** Se utilizaron datos de encuestas de población recolectados en 2010 en tres ciudades kenianas—Nairobi, Mombasa y Kisumu—para identificar a 883 parejas. Se condujeron análisis bivariados y multivariados para examinar las asociaciones entre características a nivel de la relación de pareja (por ejemplo el deseo de tener otro hijo, la comunicación conyugal sobre el número deseado de hijos y el uso de planificación familiar) y el uso de anticonceptivos en parejas que los estaban utilizando en el momento de la encuesta. Otros análisis adicionales investigaron la intención de usar anticonceptivos en parejas que en ese momento no estaban haciendo uso de ellos.

**Resultados:** El sesenta por ciento de las parejas reportaron estar usando anticonceptivos. En los análisis multivariados, las parejas que deseaban tener otro hijo mostraron una probabilidad menor de usar anticonceptivos que las parejas que no deseaban tener más hijos (cociente de probabilidades, 0.5). Las parejas en las que ambos miembros reportaron haber mantenido una comunicación conyugal sobre planificación familiar en los seis meses anteriores mostraron una probabilidad mayor de usar anticonceptivos que las parejas que reportaron no tener comunicación conyugal sobre el tema (3.8). Los resultados sobre la asociación entre las características a

nivel de la relación y la intención de usar anticonceptivos fueron parecidos, tanto en el análisis de personas que no estaban utilizando anticonceptivos como en el de personas que sí los estaban utilizando.

**Conclusión:** Este estudio relaciona ciertas características a nivel de la relación de pareja con el uso actual de anticonceptivos y la intención de utilizarlos, en parejas que viven en zonas urbanas de Kenia. Los programas de planificación familiar que promueven la comunicación conyugal sobre planificación familiar y el número deseado de hijos pueden mejorar el uso de anticonceptivos entre parejas urbanas.

## RÉSUMÉ

**Contexte:** Peu d'études font appel aux données de couple pour identifier les associations entre les caractéristiques individuelles et de relation et la pratique contraceptive en milieu urbain.

**Méthodes:** Les données d'enquêtes en population collectées en 2010 dans trois villes du Kenya – Nairobi, Mombasa et Kisumu – ont servi à identifier 883 couples. Des analyses bi- et multivariées ont été effectuées pour examiner les associations entre les caractéristiques au niveau de la relation (par exemple, le désir d'avoir encore un enfant et la communication concernant le nombre d'enfants désiré et la pratique de la planification familiale) et la pratique contraceptive parmi les couples qui pratiquaient alors la contraception. D'autres analyses se sont penchées sur l'intention de contraception parmi les couples qui ne la pratiquaient alors pas.

**Résultats:** Soixante pour cent des couples ont déclaré pratiquer la contraception au moment de l'enquête. Dans les analyses multivariées, les couples désireux d'avoir encore un enfant sont moins susceptibles de pratiquer la contraception que ceux qui n'en désirent plus (OR, 0,5). Les couples dont les deux partenaires ont fait état d'une communication conjugale au sujet de la planification familiale durant les six derniers mois sont plus susceptibles de pratiquer la contraception que ceux n'ayant déclaré aucune communication du couple sur la question (3,8). Les résultats des analyses relatives aux associations entre les caractéristiques de la relation et l'intention de pratiquer la contraception parmi les couples non utilisateurs ressemblent à ceux des analyses relatives aux couples utilisateurs.

**Conclusion:** Dans cette étude, les caractéristiques de relation paraissent associées à la pratique contraceptive actuelle et à l'intention de pratique parmi les couples du Kenya urbain. Les programmes de planification familiale qui encouragent la communication conjugale sur la contraception et le nombre d'enfants désiré pourraient améliorer la pratique contraceptive des couples urbains.

## Acknowledgments

The authors thank Sian Curtis, Kavita Singh Ongechi and Chirayath Suchindran for reviewing earlier versions of this paper and providing input.

**Author contact:** [laili.ir@gmail.com](mailto:laili.ir@gmail.com)