Determinants of Couples' Fertility Desires and Concordance in Reported Contraceptive Use: Insights from Five Peri-Urban Communities in Sub-Saharan Africa

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Introduction

Fertility intentions of both men and women are strongly predictive of future childbearing (Shoen et al 1999; Roy et al 2008; Vlassof 1990; Morgan and Rackin 2010; Mazharul and Bairag 2003). Wanted fertility is the driving force behind rapid population growth in many developing countries. A "demand approach" has therefore been framed that approaches the reduction in desired fertility through changes in social and economic determinants (Bongaarts 1994). In his policy recommendations for developing countries wishing to curb population growth, Bongaarts (1994) argued that attempts to satisfy unmet need for contraception cannot reduce fertility below that wanted by couples. Investigating the slow fertility transition in Egypt, Casterline and Roushdy (2007) concluded that further declines in fertility cannot be achieved without corresponding declines in fertility desires.

Most studies have focused on the determinants of wanted fertility of individuals, especially women, separate from their spouses. Fertility desires of individuals have been shown to decrease with education, wealth, parity, and women's autonomy and participation in the workforce (Costello and Casterline 2009; Cleland and Wilson 1987; Bongaarts 1994). It is assumed that education increases the desire to provide better education and quality of life for children, therefore increasing preferences for smaller families (Caldwell 1980). Religion is also assumed to be related to fertility desires. Muslims and more religious people are generally thought to hold strong pronatalist attitudes (Hayford and Morgan 2008; Al-Mubarak and Adamchak 1994; Williams and Sobieszczyk 2003; Mazharul and Bairagi 2003)

Reproduction, however, requires the cognizance and cooperative behavior of two partners. Relatively few studies have examined the determinants of fertility desires of both partners at the couple level. One study from Ghana showed that husband's education affected wife's attitudes towards contraceptives but wife's education had no influence on husband's attitudes. Wives of more educated husbands were more likely to approve of family planning than wives of less educated husbands, but husbands of more educated wives were not more likely to approve of family planning than husbands of less educated wives (Ezeh 1993).

Fertility rates in sub-Saharan Africa are still among the highest in the world, driven by high fertility desires and unmet family planning needs. Understanding the factors contributing to high fertility desires is important for programs and strategies aiming at reducing population overgrowth in this region. This study examines the influence of household characteristics on husband-wife concordance and discordance in wanting to stop or continue childbearing. We also examine the influence of childbearing desires and household characteristics on husband-wife concordance of reporting contraceptive use.

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Our hypotheses were:

1. Compared to couples in which both partners want no more children, men in unions in which only the husband wants no more children are more:
    a. Educated
    b. Older
    c. Wealthier and
    d. With lower parity
2. Husband-wife concordance on reporting female and male-controlled methods is higher among:
    a. Couples in which both partners want no more children
    b. Partners who communicate about contraceptives.
    c. Couples who are wealthier, more educated, older, and with higher parity.
3. Concordance on female-controlled methods is lower among couples in which only the woman wants no more children.
4. Concordance on male-controlled methods is lower among couples in which only the man wants no more children.

A conceptual illustration of these hypotheses is given in Figure 1 which is based on the framework for couples' reproductive behavior devised by Becker (1996). This model was inspired by studies of couples' reproductive behavior and influenced by the Azjen-Fishbein Theories of Reasoned Action and Planned Behavior which posit that intentions are the most important determinants of behavior (Azjen-Fishbein 1980; Ajzen and Driver1991; Ajzen 1991). The model shows that husband-wife concordance/discordance in reporting contraceptives is directly influenced by couples' fertility desires and partners' communication. Fertility desires are in turn influenced by socio-demographic characteristics.

Data and Methods

Data for these analyses come from five baseline surveys of the Family Health and Wealth Study (FHWS), conducted in 2009/2010. This ongoing multi-site longitudinal study examines individual- and family-level health and economic consequences of childbearing patterns. The study is an open cohort sample where each site selected between approximately 500 to 1000 families in six peri-urban areas in five sub-Saharan African countries: Ethiopia, Ghana, Malawi, Nigeria (2 sites) and Uganda. These families have been interviewed twice. A census of the selected peri-urban areas was followed by the selection of a probability sample of couples in each site. Systematic random sampling was used to select couples and their households, with the sampling fraction used varying by site. If a selected household did not have an eligible woman aged 15-44 years and an eligible male partner aged 20-59 years, or the eligible couple did not consent to participate in the study, the protocol allowed the team to select another eligible couple in the same household, or in an adjacent household. Women, who were single, widowed, or who did not live with their partners were not eligible to be enrolled.

The present analysis draws on data for Ghana, Nigeria (Ibadan site), Malawi, Ethiopia, and Uganda. Following an examination of the univariate results, we estimate a multinomial logistic regression model

with couple-level desire for a/nother child in four categories (both want more, both want no more, only husband wants no more, only wife wants no more) using as covariates parity, wealth quintile, partner's age (in years) and age difference with the other partner (in years), couple's education (primary or lower and secondary or higher), and couple's religion (Islam and Christian or other).

Concordance in reported contraceptive use was constructed with the husband's and wife's reports and classified into two categories: both reported using; only one spouse reported using. Logistic regression estimated concordance in reports of contraceptive use, with the same covariates as above and fertility desires and communication about contraceptives.

Results

Table 1 shows the socio-demographic characteristics, fertility desires, and contraceptive reports of monogamous couples without extramarital relationships in the five peri-urban communities. Men were on average older than women in all sites (in total 36 and 29 years, respectively). Average parity ranged between 2.1 in Ethiopia to 3.1 in Ghana. The percentage of couples in which both spouses acquired secondary education or higher was highest in Ibadan (67 percent), followed by Uganda (63 percent), Ethiopia (52 percent) and Ghana (39 percent) and lowest in Malawi (26 percent). Husbands obtained higher education than wives in all sites, but the highest disparity in education was observed in Ghana.

Fertility desires were high in all countries. The majority of couples concurred in their desires to have a/nother child but the highest fertility desires were reported in Ibadan were 70 percent of couples wanted more children followed by Uganda (62 percent), Ghana (53 percent), and Ethiopia (50 percent). The lowest desires for a/nother child were reported in Malawi (45 percent). Discordance in fertility desires in which only one partner wanted more children was found in about 22 percent of couples in the total sample.

Husband-wife concordant reports of contraceptive use was highest in Ethiopia (68 percent), followed by Uganda (37 percent), Malawi (36 percent), and Ibadan (23 percent). The lowest concordance was reported in Ghana (12 percent). Discordance in which only the wife reported using contraceptives was more common than only the husband reporting use; 20 versus 12 percent in Ibadan, 11 versus 9 in Ghana, 9 versus 7 in Ethiopia, and 16 versus 13 in Uganda. The only exception was Malawi where in more couples only the husband reported use than the other way round (15 versus 12 percent, respectively).

Fertility desires. Table 2 shows results from the multinomial logistic regression of the factors associated with couples' fertility desires. Contrary to our hypothesis, couples in which both partners obtained secondary education or higher wanted more children than couples with lower education. Interestingly, higher education was more negatively correlated with the fertility desires of the husband than those of the wife. The likelihood that only the husband wanted to stop childbearing was higher if both spouses were educated or if one partner had higher education than the other. Couples education was not associated with the likelihood that only the wife wants to stop childbearing.

Couples' desire for more children and discordance in fertility desires decreased significantly with wife's age. At older ages, it is less likely that both or either partner want to have more children. Couples' conjoint desire for more children also decreases with increasing age gap between the husband and wife. As expected, the likelihood that both or either partner wants more children decreases at higher parity. The decrease in the desire for more children, however, affects wives to a greater degree than husbands. At higher parities, wives are more likely to want to stop childbearing than husbands (Table 2).

Muslim couples' fertility desires were higher than non-Muslim couples but couples in which only the wife is Muslim had lower fertility desires. Fewer couples wanted a/nother child in the East African sites of Ethiopia, Malawi, and Uganda than in the West African sites of Ghana and Ibadan.

Concordance in contraceptive use. Table 3 shows the percentage distribution of overall concordance of husband and wife contraceptive reports (use or non-use). Concordance on contraceptive reports was highest in Ethiopia followed by Malawi and Uganda and lowest in the West African sites: Ghana and Ibadan. Only Ibadan had a kappa value lower the 0.4 which is the cutoff for concurrence beyond chance (Fleiss 1973). This overall concordance can be confounded in polygamous couples or might vary by method type. We therefore restricted the analysis to monogamous couples without extramarital partners.

Because we are interested in comparing spouses who reported the same type of contraceptive methods to couples who were discordant in their contraceptive reporting, we exclude couples who were concordant in reporting non-use (column a in Table 3) from the forthcoming analyses. Also, given that women have greater control over female-controlled contraceptives and men over male-controlled contraceptives, we examine concordance for each of these method types separately. Method-specific concordance is therefore defined as the proportion of couples in which both partners reported use of a method to the number in which both or either reported its use, columns b/(b+c+d) in Table 3.

Figure 2 shows that this method-specific concordance was higher for each female-controlled method than for the two male-controlled methods (condom and withdrawal). Figure 3 shows that the concordance on female-controlled methods combined is higher than concordance on the combined male-controlled methods (63% versus 24%, respectively) and that husbands are much more likely to report male-controlled methods while wives are slightly more likely to report female-controlled methods.

The characteristics of couples who were concordant in reporting female-controlled and male-controlled methods relative to couples who gave discordant reports is given in Table 4. Female-method concordance was highest among couples in which only the wife wanted to stop childbearing but male-method concordance was not related to fertility desires.
Older women were less likely to be concordant with their husbands in reporting female-controlled methods than younger women. Concordance on the female-methods was highest among couples in the highest wealth quintile while concordance on the male-methods was highest in the middle wealth quintile.

Concordance on the female-methods was also significantly higher in Ethiopia. Concordance on male-methods was significantly lower in Malawi. Muslim couples were less likely to be concordant on both female- and male-controlled methods but couples in which only the wife was a Muslim were more concordant on male-controlled methods. Female-method concordance was higher among couples in which both spouses reported discussing family planning compared to couples who never talked about contraceptives. Male-method concordance was not related to spousal communication about contraceptives.

Discussion

Our study finds that female and male partner desires for more children are associated with the socio-demographic characteristics of age, parity, and education but not wealth status. The relationship between age and parity and fertility desires were in the expected direction, though this is the first study to document this at the couple-level. Education had a stronger effect on the husband than the wife. Differences in socio-demographic characteristics between the two spouses in a couple in terms of age, education, and religion can also influence couple-joint desire to continue or stop childbearing. It is unclear how these differences influence fertility desires but this would be interesting to investigate in further research.

Similarly, it is not clear why concordance on male methods was low and why women were reporting considerably fewer male-controlled methods than men given that polygamous couples and those with extramarital relationships were excluded from the analysis. The finding that spousal communication is related to female-controlled methods but not to male-methods indicates that spousal discussion of contraceptives appears to focus on the female-methods. Men appear to be interested in using male-methods but they may lack the skills to discuss these methods with their spouses. Programs should encourage husbands to discuss male-methods of contraception with their partners.

It is not possible from this cross-sectional analysis to determine if communication around contraceptives is causally related to use. Fortunately, the second round of data is being completed and this hypothesis can be tested to see if discussion preceded or resulted from use.

Higher concordance increases the reliability of the reports. Discordance may be partly explained by covert use or lack of communication. Extending this analysis with the second round of survey data will enable us to better gauge the relative influence of each partner on subsequent pregnancy avoidance and fertility.

Study limitations. The survey was conducted in peri-urban sites and may not generalize to rural or urban areas. However, generalizability may not be greatly undermined given that peri-urban regions have both urban and rural characteristics. . The design is cross-sectional so causal inferences are limited. However, the second round of surveys has been completed, and future analyses will provide more insights on the validity and reliability of the present findings.

Strengths. The survey included both men and women, providing a more complete picture of fertility desires than would have been possible from surveying only women. It also includes more than one country, allowing comparisons across various socio-cultural contexts.

Conclusions

Programs wishing to increase the demand for contraception can benefit from understanding the factors influencing high fertility desires. Age and parity are the strongest predictors of fertility desires and strategies to target young couples at the beginning of their childbearing lifecycle are likely to be most effective. No great variations were apparent by wealth or education on fertility desires; therefore strategies addressing the supply side by ensuring access to family planning for the poor and less educated can be more productive than creating more demand. Disparities along religious lines were also apparent in some countries.

The characteristics of each partner can strongly influence the fertility desires of the other; a couple-level approach to creating more demand for family planning is therefore recommended. Higher desires to stop childbearing among older couples and those with high parities should be addressed with adequate supply of contraceptives.

Table 1 Percent distribution of monogamous couples' fertility preferences, contraceptive reports, and socio-demographic characteristics, FHWS

	Ibadan N=373	**Ghana** N=685	**Malawi** N=573	**Ethiopia** N=972	**Uganda** N=372	**Total** N=2975
Couple's Fertility preferences						
Both want more children	70.2	53.1	45.3	50.2	61.8	54.0
Only wife want no more	7.5	9.2	13.2	12.3	11.6	11.0
Only husband wants no more	11.3	13.1	8.0	11.4	12.4	11.3
Both want no more children	11.0	24.5	33.5	26.2	14.3	23.7
Couple's report of contraceptive use						
Both reported non-use	45.3	67.7	37.0	16.2	34.4	38.1
Both reported use	23.1	11.7	36.0	67.8	36.8	39.2
Only wife reported use	19.6	11.2	11.6	9.3	15.6	12.3
Only husband reported use	12.1	9.3	15.4	6.8	13.2	10.5
Education						
Both primary or lower	15.7	35.8	49.0	24.3	13.2	29.5
Both secondary or higher	66.7	38.9	25.7	52.2	62.6	46.9
Only wife secondary or higher	6.6	2.1	6.7	5.8	9.1	5.6
Only husband secondary or higher	11.0	23.3	18.6	17.8	15.2	18.1
Religion						
Both non-Muslim	42.1	56.1	84.1	85.7	62.4	70.2
Both Muslim	48.3	26.9	11.0	13.3	21.0	21.3
Only husband is Muslim	5.9	7.6	3.0	0.7	5.4	4.0
Only wife is Muslim	3.8	9.5	1.9	0.3	11.3	4.5
Women's age: mean (SD)	29.4 (5.4)	33.1 (6.3)	27.6 (6.3)	28.5 (6.2)	26.7 (6.1)	29.3 (6.5)
Men's age: mean (SD)	35.5 (7.0)	40.2 (7.4)	33.2 (7.1)	35.1 (8.0)	32.8 (7.7)	35.7 (8.0)
Parity: mean (SD)	2.6 (1.6)	3.1 (1.9)	2.7 (1.7)	2.1 (1.7)	2.5 (1.8)	2.3 (1.8)

Table 2 Estimates of the RRRs from the multinomial logistic regression for the determinants of discordance in husband-wife fertility desires, all sites N=2849 *

	Both want more children		Only wife wants no more children		Only husband wants no more children	
	RRR	P value	RRR	P value	RRR	P value
Wealth quintiles						
Lowest quintile(ref)						
Lower quintile	1.10	0.620	1.23	0.348	1.02	0.945
Middle quintile	0.84	0.355	0.76	0.258	0.95	0.839
Higher quintile	1.06	0.753	1.18	0.478	0.89	0.625
Highest quintile	1.31	0.180	1.01	0.952	1.17	0.523
Couples' education						
Both Primary or lower(ref)						
Both Secondary or higher	1.41	0.028	0.96	0.823	1.68	0.008
Wife is more educated	1.48	0.163	1.23	0.528	1.83	0.077
Husband is more educated	1.23	0.246	1.07	0.722	1.61	0.029
Wife's age	0.85	0.000	0.92	0.000	0.91	0.000
Age difference in years (husband-wife)	0.95	0.000	0.98	0.078	0.99	0.347
Parity	0.45	0.000	0.84	0.000	0.68	0.000
Couples' religion						
Both non-Muslims(ref)						
Both Muslims	1.33	0.07	0.94	0.744	0.84	0.373
Only the husband is Muslim	1.07	0.84	1.48	0.291	1.29	0.504
Only the wife is Muslim	0.46	0.007	0.80	0.513	0.64	0.191
Site						
Ibadan(ref)						
Ghana	0.98	0.947	0.75	0.337	0.94	0.821
Malawi	0.12	0.000	0.38	0.002	0.17	0.000
Ethiopia	0.13	0.000	0.49	0.015	0.26	0.000
Uganda	0.52	0.025	0.95	0.888	0.71	0.300

* Reference category is "Both want no more children"

Table 3 Percentage distribution of monogamous couples' reports of any current contraceptive use and kappa statistics, by site, FHWS

Site	Neither(a)	Both(b)	Wife only(c)	Husband only(d)	Kappa	N
Ibadan	45.3	23.3	19.3	12.1	0.344	373
Ghana	67.4	12.0	11.3	9.4	0.405	685
Malawi	37.2	35.8	11.7	15.4	0.460	573
Ethiopia	16.4	67.6	9.2	6.7	0.567	972
Uganda	34.4	36.8	15.6	13.2	0.425	372

Table 4 Estimates from the two binary logistic regressions predicting husband-wife concordant reports of contraceptive use of the two types of methods (Female- and male-controlled) with discordance (only one partner reporting the method) as the reference

	Female-controlled methods(N=1236)			Male-controlled methods(N=378)		
	OR	95% CI		OR	95% CI	
Couples' fertility preferences						
Both want more children(ref)						
Only wife wants no more	1.94**	1.23	3.05	1.21	0.48	3.09
Only husband wants no more	0.88	0.57	1.35	0.43	0.11	1.66
Both want no more children	1.42¥	0.95	2.13	0.41	0.13	1.31
Wealth quintiles						
Lowest quintile(ref)						
Lower quintile	1.08	0.70	1.65	2.00	0.68	5.88
Middle quintile	1.34	0.87	2.07	2.7¥	0.92	7.74
Higher quintile	1.20	0.77	1.87	1.31	0.43	3.93
Highest quintile	1.60*	1.00	2.56	1.02	0.34	3.10
Couples' education						
Both Primary or lower(ref)						
Both Secondary or higher	0.86	0.60	1.24	0.84	0.34	2.06
Wife is more educated	1.13	0.63	2.05	1.15	0.21	6.20
Husband is more educated	0.88	0.59	1.32	0.48	0.15	1.50
Wife's age	0.94***	0.91	0.97	1.01	0.94	1.08
Age difference in years (husband-wife)	0.99	0.96	1.01	1.02	0.94	1.12
Parity	1.08	0.97	1.21	1.25	0.96	1.64
Couples' religion						
Both non-Muslims(ref)						
Both Muslims	0.72¥	0.50	1.04	0.40*	0.18	0.91
Only the husband is Muslim	0.84	0.38	1.89	1.52	0.46	5.05
Only the wife is Muslim	0.80	0.40	1.63	3.44¥	0.93	12.75
Study site						
Ibadan(ref)						
Ghana	1.03	0.53	1.98	0.73	0.25	2.10
Malawi	1.49	0.86	2.57	0.24*	0.07	0.80
Ethiopia	6.45***	3.93	10.61	0.85	0.30	2.39
Uganda	1.28	0.74	2.20	0.66	0.29	1.49
Discussed contraceptives with spouse						
Both reported no(ref)						
Only wife reported yes	0.78	0.19	3.23	0.34	0.02	5.61
Only husband reported yes	1.69	0.45	6.35	0.14	0.01	2.71
Both reported yes	3.8*	1.04	13.61	1.29	0.10	16.21

***≤0.001, **≤0.01, *≤0.05, ¥≤0.1

Figure 1 Factors related to husband-wife fertility desires and concordant reports of female and male-controlled contraception

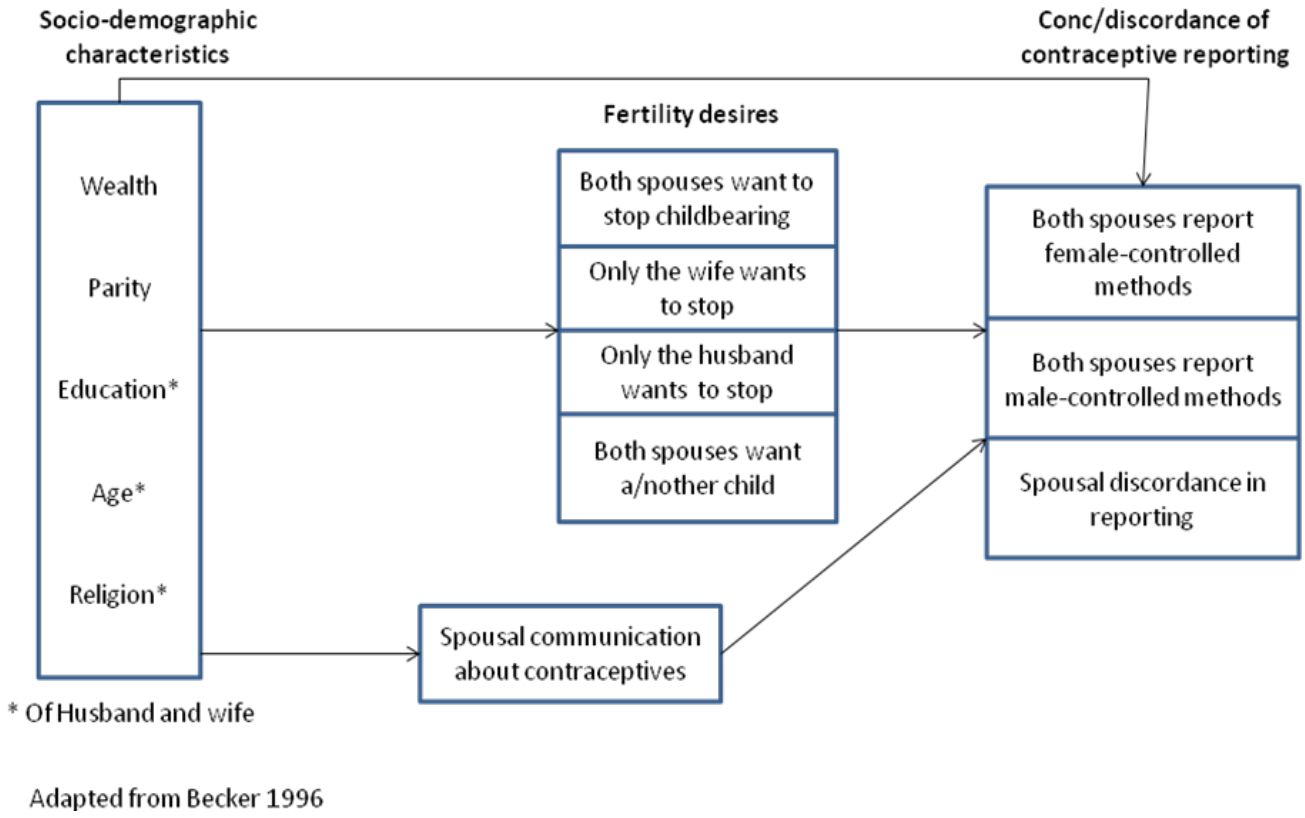
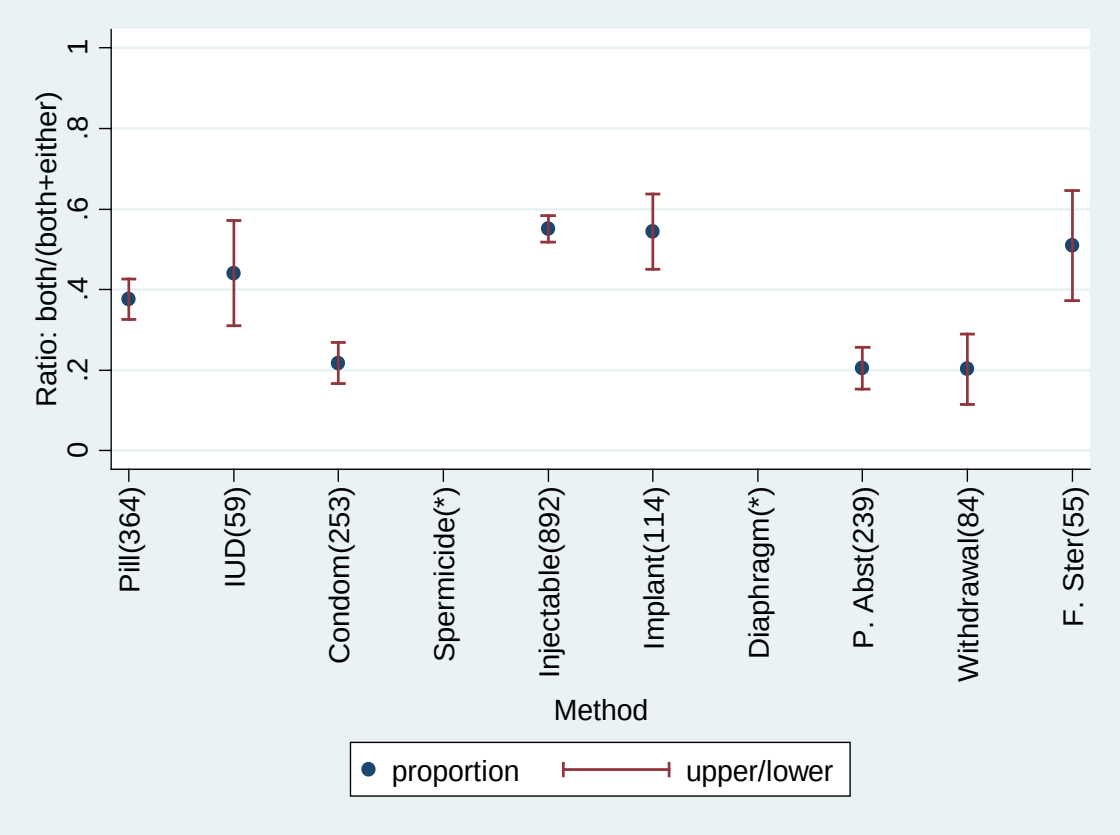
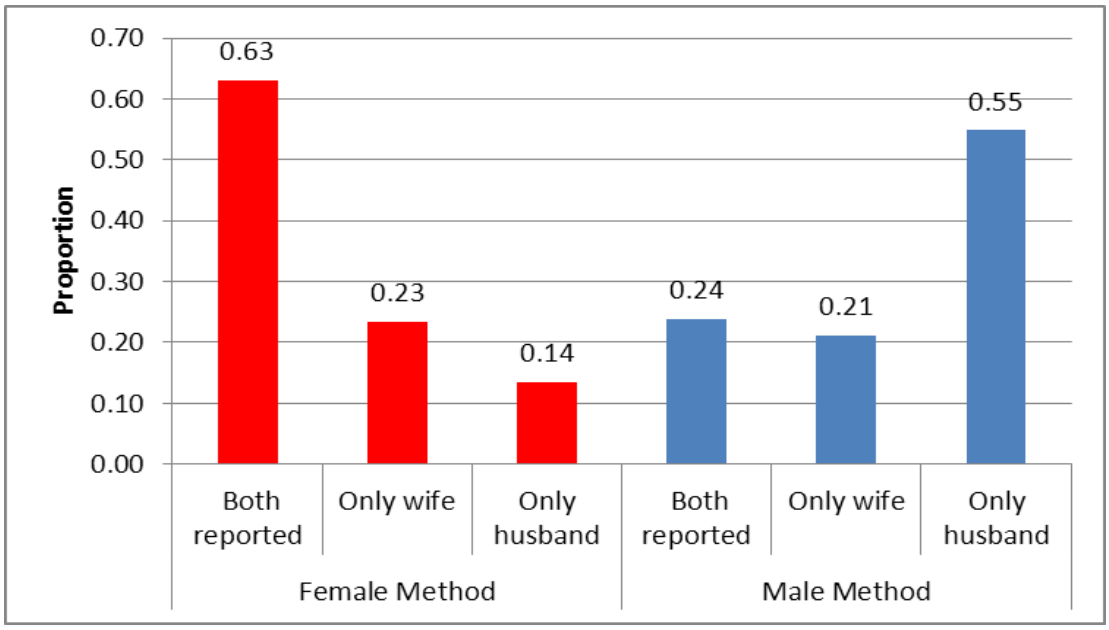


Figure 2 Ratios of the number of monogamous in which both partners reported using a contraceptive method to the number of couples in which at least one reported its use, all sites combined



*=Less than 10 observations

Figure 3 Proportion of couples reporting female-controlled and male-controlled Contraceptives, FWHS, all sites



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