

Partner support for family planning and modern contraceptive use in Luanda, Angola

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Introduction

Several studies have examined how wife’s and husband’s fertility intentions predict future fertility and contraceptive use and results indicate that incorporating both spouses’ attitudes improves predictability compared to including just one spouse’s attitudes. (Ezeh, 1993; Koenig, Simmons, & Misra, 1984; Kulczycki, 2008; Maharaj & Cleland, 2005; Yue, O'Donnell, & Sparks, 2010) Results vary regarding which spouse’s fertility intentions has greater predictive value. Incorporating husbands’ fertility intentions in models may improve predictability of subsequent fertility. (Becker, 1996) Spousal communication about fertility and family planning in Africa is notoriously low and greater communication may increase the accuracy of a spouse’s perception of the other spouse’s approval of family planning depending on the setting and prevailing norms, among other factors. (DeRose, Doodoo, Ezeh, & Owuor, 2004; Lasee & Becker, 1997) Although wives’ proxy report of husbands’ approval of family planning has low validity, her perception of his approval may still provide insight into her contraceptive choices. (Becker, 1996; Lasee & Becker, 1997) Cultural context may be especially important. For example, a study in India found couple data was needed to accurately assess family planning attitudes and intentions. (Yadav, Singh, & Goswami, 2010) However, a previous study in Kenya found wives’ incorrect perception of husbands’ attitudes to be a significant predictor of behavior (i.e. contraceptive use). (Lasee & Becker, 1997) Among post-abortion care clients in Zanzibar, a woman’s perceived husband/partner support for contraceptive use trumped all other factors in determining her family planning intentions. (Esber, Foraker, Hemed, & Norris, 2014) As study of the effect of spousal agreement on fertility and spousal communication on contraceptive use in Jimma zone, Ethiopia found both factors played important roles in uptake. (Tilahun, Coene, Temmerman, & Degomme, 2014)

Evidence suggests husband’s/partner’s support for family planning influences a woman’s modern contraceptive use. (Mubita-Ngoma & Kadantu, 2010; Stephenson & Tsui, 2002; Williamson, Parkes, Wight, Petticrew, & Hart, 2009) A strategic mapping exercise of qualitative factors associated with low utilization of family planning services in Angola in the immediate post-conflict period cited male opposition to family planning and limited female decision-making power as important barriers to contraceptive use. (Advance Africa, 2003) Mixed methods research using national data and qualitative interviews with health providers identified barriers to contraceptive use, such as cultural beliefs and power imbalances, among internally displaced Angolan women. (Decker & Constantine, 2011) However, we have an incomplete understanding of how attitudes and perceptions might interact with each other and other variables. In particular, to our knowledge, there is no research investigating the influence of husband/partner approval and gender dynamics on modern contraceptive use in Angola.

The purpose of this paper is to assess the relationship between (1) husband’s/partner’s approval, and (2) husband’s/partner’s encouragement of the use of modern contraceptives use based on women’s perceptions. We selected both independent variables for this analysis after noting a lack of alignment between categories of these seemingly similar forms of partner support. We also isolate any direct

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effects of perceived approval or encouragement by identifying and controlling any mediating role potentially played by i) women’s self-efficacy and ii) perceived contraceptive accessibility.

Background

Situated in southern Africa, Angola is home to a population of 24.3 million. (INE, 2014) After decades of civil war and unrest, thousands of Angolans are poor and displaced, lacking access to some of the most basic health care services. Angola’s capital and largest city, Luanda, where 27% of the population resides (INE, 2014), is characterized by high fertility (TFR=6.9 children per woman) and low contraceptive prevalence rate (17.7%). The unmet need for family planning is estimated to be 44%, 19% of which is for limiting childbearing (USAID, 2009). In Angola, significant barriers exist, including widespread and extreme poverty and lack of knowledge and understanding related to family planning and contraception. For example, only 60% of women know of a modern method of contraception in Luanda province. (2009) A KAP survey conducted in Luanda province in 2009 reported that the reason most commonly cited by women for not using contraceptives was lack of knowledge (33%). (Connor, Averbug, & Miralles, 2010)

Data and Methods

Researchers from the University of California, Berkeley Bixby Center for Population, Health and Sustainability developed a survey instrument modeled on the Women’s Questionnaire of the Demographic and Health Surveys (DHS) and Angola’s Malaria Indicator Survey and also included standardized Population Services International (PSI) questions on opportunity, ability, and motivation. The survey questions capture women’s knowledge, attitudes, and practices as well as their opportunities, ability, and motivation related to childbearing and family planning. The survey also collected information regarding women’s experiences with reproductive health services and their preferences related to the delivery of family planning services. All items and response options in the survey instrument were initially developed in English and later translated into Portuguese by the research team, with feedback from PSI Angola. Once finalized, the survey instrument was pilot tested among women of reproductive age in Luanda, Angola. Feedback from this phase was incorporated and the final pilot-tested version was then back translated into English to ensure accuracy.

Using a multi-stage random sampling design, researchers captured a representative sample of women of reproductive age from all municipalities in Luanda Province where the capital city of Luanda is located. The municipality sample was proportional to population size of each municipality. All women provided consent before taking part in the interview. The survey had the targeted goal of providing a representative family planning needs assessment before the development and implementation of public and private sector family planning programming and an information, education, and communication (IEC) campaign with PSI Angola. A more detailed description of the data, methodology, and findings has been published in a 2012 Luanda Community Survey Report. (Bell, Weidert, Vohra, Harris, & Prata, 2013) To our knowledge, the only other recently gathered socio-demographic data were collected by the

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Angolan National Institute of Statistics (INE) for the Inquérito Integrado Sobre o Bem-Estar da População or Integrated Survey on the Welfare of Population (IBEP) living standards measurement survey in 2009, which contained UNICEF multiple indicators cluster survey (MICS) modules. (Instituto Nacional de Estatística (INE), 2011) Ethical approval for this study was provided by the University of California, Berkeley Center for Protection of Human Subjects (CPHS # 2011-08-3521). Approval was also provided by the Ethical Committee at the Instituto de Saude Publica in Luanda, Angola.

In this analysis, we assess whether perceived husband’s/partners’ approval and encouragement of the use of contraception is associated with current modern contraceptive use. Our hypothesis is that husband’s/partner’s approval of contraceptive use (as perceived by the woman being surveyed) is independently associated with current modern contraceptive use. We also hypothesize that this relationship is mediated by contraceptive self-efficacy and perceived contraceptive accessibility. Controlling for these mediators would potentially isolate the direct effect, if any, of perceived husband’s/partner’s approval of contraceptive use, after controlling for other socio-demographic factors and husband’s/partner’s communication (Fig 1). We also hypothesize that this relationship would be similar for husband’s/partner’s encouragement of the woman to use contraception. We theorized that husband’s/partner’s approval as perceived by the respondent and husband’s/partner’s encouragement could serve as proxies for complex gender dynamics and husband/partner support that characterize the context in which women make family planning decisions and shed light on potential avenues for interventions, particularly pointing to salient messages for information, education, and communication (IEC) campaigns.

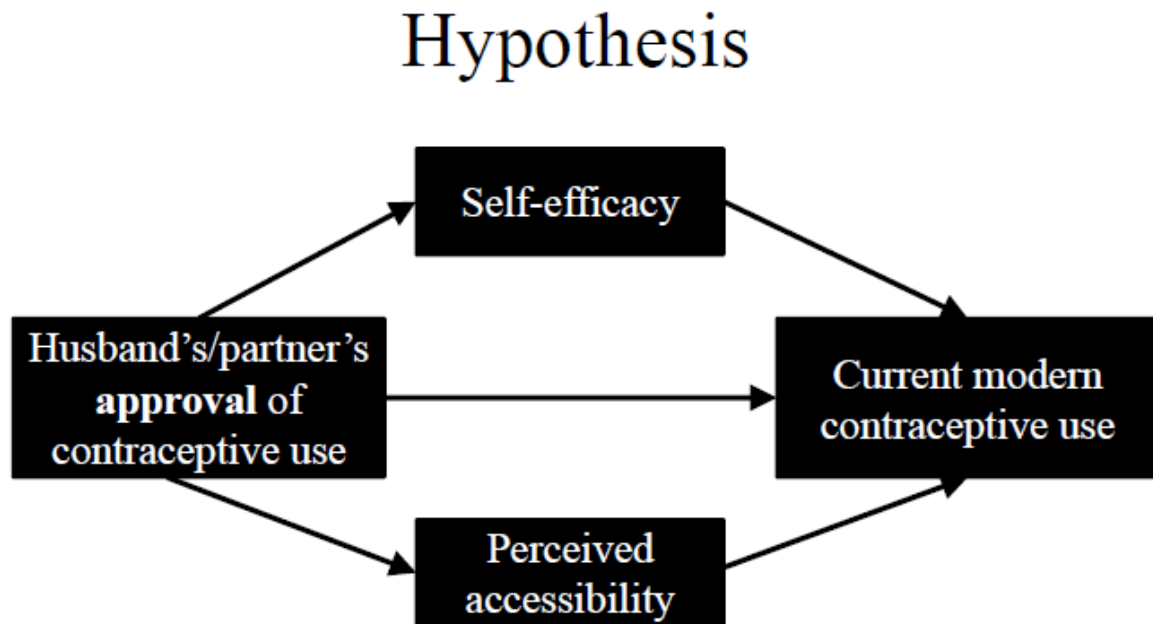


Figure 1

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Our dependent variable, current use of modern methods of family planning, was dichotomous yes vs. no, with no as reference group, which encompassed both non-users of any form of contraception and users of traditional methods. Given the small number of users of traditional (n=35, 2.6%), traditional method users were combined with those using no method at all. Our first independent variable of interest, "Approval of family planning," was captured by the question: *Do you think your husband/partner/boyfriend approves of couples using family planning?* Responses were categorized dichotomously (a) yes vs. (b) no or don't know, with no/don't know as reference group. Our second independent variable of interest, "Encouragement of respondent to use contraception", was taken from a variable measured on a Likert scale (*My husband encourages me to use family planning*), collapsed into three categories: strongly agree/agree, indifferent, and disagree/strongly disagree. The latter acted as the reference group.

Socio-demographic variables included age, marital status, education, and wealth quintile derived from a principal components analysis (PCA) of household assets, including building materials and household amenities, following the methodology used by Demographic and Health Surveys (DHS). Recent couple communication was assessed by the number of times surveyed women had discussed family planning with her husband/partner in the last year (none, once or twice, more often). The contraceptive self-efficacy index was developed using PCA of variables included in the survey which measure self-efficacy, including: capability of using contraceptives; ability to use methods correctly and consistently space births; communicate about preventing pregnancy; negotiate contraceptive use; and use contraception in the face of husband/partner opposition (see Appendix Table A). Perceived accessibility of contraception is dichotomously coded, yes/no, in response to the question: *Are contraceptives accessible to you?*

We conducted bivariate analysis on the two independent variables. Multivariate analyses were conducted separately on each independent variable of interest. Models were built in 2 stages: 1) Model 1 controls for socio-demographic characteristics and recent couple communication about family planning; 2) Model 2 includes i) a women's sense of contraceptive self-efficacy and ii) perceived accessibility of contraception. Statistical significance was established at $p < 0.05$.

Results

Sample Characteristics

Our data are derived from a larger study sample of 1,825 Angolan women of reproductive age living in Luanda. This analytical sample was restricted to non-pregnant, non-sterilized, fecund women of reproductive age who completed the survey and were married/had boyfriend/had husband/had partner (husband/partner) (n=1,346). As shown in Table 1, slightly more than half of the sample was currently using modern methods of contraception (55%) while the rest (45%) was not. As expected, sample characteristics of current users of modern methods of family planning were significantly different from those of current non-users of modern methods ($p \leq 0.05$). The majority of the sample was less than 25

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years old (57%), not currently married/cohabitating (73%), had attained at least high school education or more (56%), and had no children (55%) (not shown). Higher proportions of older women, currently married/cohabitating women, more educated women, women in the highest wealth quintile rank than younger, currently not married/not cohabitating, lowest wealth quintile rank women were current users of modern methods. The inverse was true for non-users. A higher proportion of women who had ever given birth than women who had never done so were current users, whereas for non-users this again was the reverse. For example, the majority of 15-19 year olds, (66%) were non users. In comparison, fewer women 20-24 and 20+ (34%) fewer were non users. Significantly higher proportions of married women (69%), the most educated women (10-13/university: 62% grades), and women of the highest wealth quintile rank (5th quintile: 63%) were currently using contraception. In contrast, fewer women who were not married (51%), least educated (43%), and women in lowest quintile (49%) were currently using contraception. Higher proportions of women who had given birth three to four times (74%) were currently using contraception compared to women who had never given birth or had done so either fewer or more times. Overall, more than two fifths (45%) of the sample had not spoken with their husbands/partners about family planning in the last year. A lower proportion of those women (35%) were currently using modern contraception compared to their counterparts who had done so at least once (71-73%).

Compared to women who did not perceive contraception as accessible, a higher proportion of those who did were modern users (69%). The proportion of women who had higher scores on the self-efficacy scale was greater among current modern method users (71%) than among their counterparts with lower self-efficacy scores. The variables, which were measured 5-point Likert scale and included in the principal component analysis used to create the self-efficacy measures, and their mean scores are presented by contraceptive use in Appendix Table A.

Husband’s/Partner’s Support: Approval & Encouragement

As indicated in Table 2, both forms of husband/partner support differed significantly according to modern method use, as did reported couple agreement on the desired number of children ($p=0.000$). Half of women included in our sample (51%) reported their husbands approve of couples using family planning. Few of the husbands disapproved (8%), but two fifths of women (41%) did not know their husbands opinion on the topic (not shown). Among women who believed their husbands approve of couples using family planning, most were current modern method users (71%). Notably, the majority of those who believed their husbands did not approve (60%) were also current modern contraceptive users. Most of the women who were encouraged to use contraception by their husbands/partners (65%) were modern method users and less than half of those who were not encouraged (44-49%) did so.

The distribution of husband’s/partner’s approval and encouragement varied significantly so that approval did not coincide with encouragement. For example, of the 51% of women who perceived their husband/partner approved of couples using family planning, only 65% agreed/completely agreed their husband/partners encouraged them to use family planning (data not shown). Most of the women who

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did not know their husbands opinion on couples using modern methods were non-users (65%). Overall, half of the sample reported their husbands/partners encouraged them to use contraception (agree/completely agreed), most of the remaining women (29%) neither agreed nor disagreed (indifferent) while one fifth (21%) did not report husbands/partners encouragement (not shown). Whereas, among the 49% of women who reported their husbands/partners disapproved or did not know their partners opinion, 36% agreed/completely agreed that their husbands/partners encouraged them to use contraception (not shown).

Around half of the women in the sample were unsure of whether their husband/partner wanted the same number of children as they did (not shown). A quarter (25%) concurred with their husband/partner on their ideal family size, and the remainder (22%) reported discordant desires, more often due to partners wanting more children (not shown). The majority of women who desired the same number of children as their husband/partner currently used modern contraception. A greater majority of women whose husband/partner wanted more children than they did (72%) currently used modern methods and a smaller majority of those whose partners wanted fewer children (56%) did so as well. More than half of the women who were unsure of their partners desired family size were current non-users (54%).

Unadjusted Analysis

As shown in Table 1, bivariate analysis also found that all sample characteristics and mediating variables were significantly associated with current use of modern contraception (not shown). For example, compared with the youngest women, the odds of current modern method use was more triple for older age groups (unadjusted OR=3.7 both older age groups, (20-24 years olds: 95% CI 2.7-5.0) and (25+ years olds: 95% CI 2.9-4.9). Married women were twice as likely (unadjusted OR=2.2, 95% CI 1.4-2.5) as women who were not married to currently use modern methods. Compared to the least educated and lowest wealth quintile women, only the most educated (unadjusted OR=2.2, 95% CI 1.5-3.1) and highest quintile women (unadjusted OR=1.7, 95% CI 1.2-2.5) were significantly more likely to use modern methods. Increasing number of children ever born (CEB) as associated with increased odd of modern method use in the two higher categories (CEB=3-4: unadjusted OR=3.5, 95% CI 1.5-3.1 and (CEB ≤5: unadjusted OR=2.7, 95% CI 1.7-4.0). Agreement with husband/partner on the desired number of children was not significantly associated with modern contraceptive use. Couple communication nearly quintupled the odds of current modern use (unadjusted OR=4.5-4.9, 95% CI 3.3-6.5). The odds of current modern method use were significantly greater for each potential mediator, perceived accessibility of contraception (unadjusted OR=5.3, 95% CI 4.2- 6.8) and self-efficacy (unadjusted OR=3.6, 95% CI 2.9-4. 6).

Table 2 shows, in unadjusted analysis, both forms of husband/partner support were significantly associated with current modern method use. Women who perceive their partners as approving of couples using family planning were nearly four times more likely to currently use modern methods than those whose partners did not approve (unadjusted OR=3.9, 95% CI 3.1-4.9). Compared to women who

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disagreed/completely disagreed, women who were indifferent were not significantly more likely to currently use modern methods, whereas women who completely agreed/agreed that their partner's encouraged them to use contraception were significantly more likely to do so (unadjusted OR=1.9, 95% CI 1.4-2.5).

Multivariate Analysis

As shown in Table 3 in Model 1, we found the association between partner's approval of couples using family planning and modern method use drops from 3.9 (unadjusted) to 2.1 but remains significant (95% CI 2.3-3.8), after controlling for sociodemographic variables and recent spousal communication. Most control variables, such as age, education, the number children ever born, and recent couple communication, were significantly associated with use of modern methods, after adjustment. However, marital status and wealth quintile, significantly associated with modern method use in bivariate analysis, lost their significance in the adjusted model. We tested replacing couple communication with couple agreement on the desired family size in Model 1 but reported concordance on ideal family size was not significant so it was dropped from the analysis.

Model 2 shows, after controlling for potential mediating variables, contraceptive accessibility and contraceptive self-efficacy, the association between perceived husband's/partner's approval and modern method use drops further to 1.7 times the odds but retains its significance (95% CI 1.7-2.3). In the fully adjusted model, women aged 20-24 years old are twice as likely to use modern methods as their younger counterparts but women who are aged 25 years or older are no longer significantly more likely to do so. Increasing educational attainment (AOR=2.3-2.8 95% CI 1.4-4.6) and recent couple communication (AOR=2.6 95% CI 1.8-3.7) remained associated with currently using modern contraception. The number of children ever born remains significantly associated with current modern method use for the highest parity women only (CEB≤5: AOR=2.8, 95% CI 1.4- 5.3). After controlling for mediators, women who had discussed family planning with their husbands recently were twice as likely (AOR=1.9-2.0 95% CI 1.4-2.9) to use of modern methods. A woman's perceived accessibility of contraception more than triples her odds of using a modern method (AOR=3.6 95% CI 2.7-4.7) and for each unit increase in her self-efficacy score her odds of using modern contraceptive methods more than doubles (AOR=3.6 95% CI 2.7-4.7). Additional models, investigating potential interactions between partner's approval and each mediator, found the association between each interaction term non-significant (not shown).

In relation to husband/partner's encouragement of family planning use (Table 3, Model 1), after controlling for sample characteristics, we found that although previously significant, the unadjusted association between husband/partner encouragement to use contraception and modern method use dropped below significance. Sociodemographic control variables show a similar pattern of association with the contraceptive use outcome in the husband/partner encouragement model as found in the husband/partner approval model. However, the odds of current modern contraceptive use associated with recent couple communication, although smaller, remain positive and significant in the adjusted

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model. In Model 1, women who had discussed family planning with their husbands were three times as likely to currently use modern contraception (AOR=3.3 95% CI 2.4-4.5). Model 2 presents the association between husband/partner encouragement and current modern method use, further adjusted for mediators. Both perceived accessibility and self-efficacy are significantly associated with modern use and controlling for these mediators improved the fit of the model. After adjusting for mediators, sociodemographic variables again show a similar pattern of association as found in the approval model. In contrast, while recent couple communication remains significant the odds are much more reduced after these adjustments in the encouragement model than they were in the approval model. Recent couple communication more than doubled the odds of current modern method use (AOR=2.3-2.5 95% CI 1.6-3.6). Again, when we included concordance on the ideal family size instead of couple communication in Model 1, we found a non-significant association and dropped it from the model since it did not add explanatory value.

Discussion and Conclusion

Our study examines the relationship between two aspects of gender dynamics and current modern contraceptive use independent of known factors and potential mediators. Results demonstrate between these two forms of husband/partner support assessed in this study, perceived husband's/partner's approval, separate from a woman's sense of self-efficacy and the perceived accessibility of contraceptives, is the one variable strongly and positively associated with current modern contraceptive use. We also found the effect of perceived approval is further mediated by perceptions of accessibility of contraception and self-efficacy but found no evidence of interaction between approval and mediating factors. The association between husband's/partner's encouragement of family planning and current modern contraceptive use lost its significance when adjusted for sociodemographic variables and couple communication. We found mediating factors, perceived accessibility, and self-efficacy were significantly associated with encouragement and increased the explanatory power of the analysis. In investigating both forms of husband/partner support, several control variables, including most notably and unsurprisingly, couple communication were significant factors in the relationship between both husband/partner support variables and current modern methods use. Other research has pointed to the importance of spousal agreement on the desired family size, but our analysis found that concordance on ideal family size was not significant in multivariate analysis.

While our study relies on women's perception of their husband's/partner's approval, our results are consistent with other quantitative and qualitative studies which have found actual husband's/partner's approval wields significant influence on contraceptive use. (Eliason et al., 2013; Esber et al., 2014; Mubita-Ngoma & Kadantu, 2010) Furthermore, women's perception of their husband's/partner's approval strongly influences their family planning behavior, so that unless approval is explicitly communicated, incorrect perceptions of disapproval can pose a barrier to contraceptive use. (Bankole & Singh, 1998; Lasee & Becker, 1997)

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We found considerable ambiguity about husband/partner support for family planning and agreement on desired family size along with a substantial lack of recent couple communication. Just as some women might not adopt family planning due to incorrect perceptions of partners approval, women who are unsure of their partner's opinions might decide not to use contraception (preemptively without discussion) due to fear of partner's opposition. In our analysis, we collapsed the category of women who did not know their partner's opinion about couples using family planning with women perceived their husbands/partners as disapproving of the practice. Our approach is consistent with a study of men's approval of family planning in Bangladesh, which validated collapsing disapproval and uncertainty into a single category based on the characteristics of indecisive respondents but also recommended further study. (Islam, Padmadas, & Smith, 2006) Thus, the meaning of the "don't know" response might merit some consideration. In our study most of the women in the "disapprove/don't know" fell under "don't know".

Poor communication likely fuels the uncertainty or indifference many women reported regarding perceived husband's/partner's approval or encouragement and concordance on ideal family size. Inter-spousal communication about family planning is often limited in many low-resource settings. Some researchers caution that frequent spousal communication should not be assumed to be associated with approval of contraceptive use. (Dodoo, Ezeh, & Owuor, 2001) Others research notes the lack of communication might not denote disapproval. (Berhane et al., 2011) Qualitative research with Nigerian men found high male approval and ever use widespread but low current use and poor spousal communication regarding family planning. (Ijadunola et al., 2010) Nevertheless, multiple studies suggest improving dialogue between couples in this regard may help women to more accurately identify husband's/partner's attitudes towards family planning (Araoye, 2006; DeRose et al., 2004), and increase contraceptive use. (Bawah, 2002; Ogunjuyigbe, 2002; Shattuck et al., 2011)

Overall, it is clear from this data from Angola, men's attitudes towards contraception, or at least women's perception of them, are predictive of women's contraceptive use. Male approval of family planning has been associated with increased male involvement. (Kassa, Abajobir, & Gedefaw, 2014) Male involvement has been promoted in many quarters as a key to increasing contraceptive prevalence and has been called into question by others. (Ezeh, 1993; Hartmann, Gilles, Shattuck, Kerner, & Guest, 2012; Sternberg & Hubley, 2004; Vouking, Evina, & Tadenfok, 2014)

Our study had some limitations. First, as mentioned, we relied on women's report of their husbands'/partners' views. Matched couple data might be ideal but there are challenges to gathering data from dyads. Indeed, some research has found wives' perception of their husband's family planning attitudes might not reflect the husband's views. (Diro & Afework, 2013) Ultimately, as we have also noted, husband's actual approval might be interesting to know but, in some settings, it is possible that his wife's perception of his approval, accurate or not, might have more bearing on her family planning behavior. (Lasee & Becker, 1997; Yue et al., 2010) Second, given differences seen in the results, there is a need to better understand what "approval" and "encouragement" really mean to women. For

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example, as with perceived approval, women's reports of husband/partner encouragement reflect subjective feelings, and likely more nuanced and based on multiple overt actions or inaction. Husband's/partner's approval can be ascertained based on his disclosure of approval. However, encouragement would likely involve a pattern of behavior or actions, which might evolve throughout the relationship. In addition, approval of couples in general using contraception could be interpreted as philosophical or policy matter whereas husband's/partner's encouragement of a woman in the relationship could be taken as interpersonal and situational. Partner encouragement may depend on many unknown factors including motivation, emotions, and relationship dynamics. For example, women may not respond to encouragement to limit fertility if she and her partner do not agree on family size or birth spacing. Moreover, the lack of association in our study between concordance on desired fertility as perceived by the woman and modern method use found in our analysis contrasts with other studies which found a significant positive association for actual concordance from couple data. (Tilahun et al., 2014) Additional qualitative work could be essential to understand this distinction and related nuances.

Nevertheless, our results have implications for future IEC campaigns designed to involve men in a campaign to increase family planning use in Luanda, Angola. Existing largely qualitative research regarding men's actual attitudes points to some potential explanations. Several studies note the reasons men actually report for opposing contraception include concerns about side effects and potential promiscuity or infidelity. (Kabagenyi et al., 2014; Kassa et al., 2014; Ochako et al., 2015; Odu, Ijadunola, Komolafe, & Adebimpe, 2006) It is possible that men who approve contraceptive use for couples in general but do not encourage their partners to use them. (Berhane et al., 2011) Furthermore, some men participating in focus group discussions often report viewing family planning as a women's domain. (Kabagenyi et al., 2014) Male involvement in family planning IEC could address misperceptions, myths, gender attitudes, and health concerns which make men more likely oppose family planning and less likely to communicate their approval or voice encouragement, even if they approve.

Research suggests that the social networks and larger cultural context shape family planning norms and behaviors. (Avogo & Agadjanian, 2008; Dynes, Stephenson, Rubardt, & Bartel, 2012; Eliason et al., 2013; Kaggwa, Diop, & Storey, 2008; Ochako et al., 2015) Husbands/partners are pivotal figures the sexual and reproductive lives of women and contribute to the culture in which women live. With these influences in mind, family planning programs in Angola should consider targeting males in IEC campaigns to increase awareness and promote male involvement in helping to create a more supportive environment for women to adopt modern contraceptive methods.

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Table 1: Background characteristics among women of reproductive age by current modern method use

Variable	Current Use of Modern Methods				
	Users		Unadjusted Odds Ratio		Total**
	%	N=746	OR	95% CI	N=1346
All	55.4	746			1346
Age*					
15-19	34.2	150	-	Reference	439
20-24	65.6	214	3.68	2.72-4.98 *	326
25+	66.0	381	3.75	2.88-4.87 *	577
Current marital status*					
Not married/cohabiting	50.5	495	-	Reference	981
Married/cohabiting	68.8	251	2.16	1.68-2.79 *	365
Education*					
No education/grades 1-6	42.6	63	-	Reference	148
Grades 7-9	49.3	217	1.31	0.90-1.91	440
Grades 10-13/University or more	61.5	466	2.15	1.51-3.08 *	758
Wealth quintile*					
1st (poorest)	49.2	128	-	Reference	260
2nd	49.8	133	1.02	0.73-1.44	267
3rd	57.2	155	1.38	0.98-1.94	271
4th	56.9	152	1.36	0.97-1.92	267
5th (wealthiest)	62.8	172	1.74	1.23-2.46	274
Total number of children ever born*					
0	45.0	330	-	Reference	733
1-2	64.0	203	2.17	1.66-2.85 *	317
3-4	74.2	132	3.50	2.43-5.05 *	178
5+	68.6	81	2.67	1.76-4.05 *	118
Number of times have talked to husband/ partner about family planning in the past year*					
Never	35.2	213	-	Reference	605
Once or twice	70.9	248	4.47	3.37-5.95 *	350
More often	72.9	285	4.95	3.74-6.54 *	391
Perceives contraception as accessible*					
No	29.3	135	-	Reference	460
Yes	69.0	611	5.35	4.18-6.84 *	886
PCA Self Efficacy Scores*					
Scores 0 - <3	27.8	47	-	Reference	169
Scores 3 - <4	56.3	517	3.34	2.33-4.49 *	919
Scores 4-5	70.5	182	6.22	4.04-9.56 *	258

* Chi(2) or OR p-value ≤ 0.05

** Row % add to 100%

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Table 2: Family planning beliefs and communication about family planning by current modern method use

Variable	Current Use of Modern Methods				
	Users		Unadjusted Odds Ratio		Total**
	%	N=746	OR	95% CI	N=1346
Husband's/partner's opinion of couples using family planning to avoid pregnancy*					
Approves	71.4	486	-	Reference	681
Disapproves/Don't know			3.88	3.1-4.88	
Disapproves	60.0	66			110
Don't know	35.0	194			555
My husband encourages me to use family planning*					
Completely Disagree/Disagree	49.1	137	-	Reference	279
Indifferent (neither agreed nor disagreed)	44.0	170	0.82	0.60-1.11	386
Agree/Completely Agree	64.5	439	1.88	1.42-2.50	681
Husband/partner wants/wanted same number of children as respondent*					
Same number	66.5	222	-	Reference	334
More children	71.7	119	1.28	0.85-1.92	166
Fewer children	56.1	74	0.64	0.43-0.97	132
Unsure	46.4	331	0.64	0.33-0.57	714

* $Chi(2)$ or OR p -value ≤ 0.05

** Row % add to 100%

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Table 3: Logistic regression: odds ratio between (A) husband’s/partner’s approval & (B) husband’s/partner’s encouragement of family planning and current modern contraceptive use

Variable	Husband approves of couples using family planning (A)				Husband encourages me to use family planning (B)			
	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
	Model 1: Sociodemographic variables		Model 2: Add self-efficacy (PCA) scale & perceived contraceptive accessibility		Model 1: Sociodemographic variables		Model 2: Add self-efficacy (PCA) scale & perceived contraceptive accessibility	
Thinks husband/partner approves of family planning								
No/don't know	-	Reference	-	Reference	-	-	-	-
Yes	2.08	1.57-2.73 ***	1.73	1.30-2.31 ***	-	-	-	-
Husband encourages her to use family planning								
Strongly Disagree/Disagree	-	-	-	-	-	Reference	-	Reference
Indifferent	-	-	-	-	0.97	0.69-1.38	0.91	0.63-1.32
Agree/Strongly Agree	-	-	-	-	1.26	0.92-1.73	0.96	0.67-1.36
Age								
15-19	-	Reference	-	Reference	-	Reference	-	Reference
20-24	2.08	1.47-2.96 ***	2.13	1.47-3.08 ***	2.05	1.45-2.89 ***	2.14	0.91-2.14 ***
25+	1.54	1.03-2.31 **	1.42	0.93-2.18	1.49	1.00-2.22 *	1.40	1.33-3.56
Current Marital Status								
Not married/cohabiting	-	Reference	-	Reference	-	Reference	-	Reference
Married/cohabiting	0.79	0.55-1.13	0.79	.548-1.14	0.84	0.59-1.19	0.84	0.58-1.21
Education								
No education/grades 1-6	-	Reference	-	Reference	-	Reference	-	Reference
Grades 7-9	2.53	1.58-4.02 ***	2.29	1.39-3.75 ***	2.28	1.44-3.62 ***	2.18	1.33-3.56 ***
Grades 10-13/University or more	3.37	2.09-5.43 ***	2.76	1.66-4.57 ***	3.21	2.00-5.14 ***	2.73	1.65-4.52 ***
Wealth Quintile								
1st (poorest)	-	Reference	-	Reference	-	Reference	-	Reference
2nd	0.89	0.60-1.32	0.82	0.54-1.24	0.92	0.62-1.35	0.83	0.55-1.25
3rd	1.18	0.79-1.77	1.13	0.74-1.73	1.25	0.85-1.86	1.18	0.77-1.80
4th	1.07	0.71-1.61	0.97	0.63-1.49	1.12	0.75-1.68	0.99	0.65-1.53
5th (wealthiest)	1.34	0.88-2.02	1.11	0.72-1.73	1.39	0.92-2.10	1.15	0.74-1.77
Children Ever Born								
0	-	Reference	-	Reference	-	Reference	-	Reference
1-2	1.21	0.83-1.77	1.05	0.71-1.57	1.28	0.88-1.86	1.10	0.74-1.62
3-4	2.02	1.19-3.41 ***	1.60	0.92-2.77 *	2.18	1.29-3.67 ***	1.72	1.00-2.97 *
5+	2.64	1.42-4.93 ***	2.75	1.42-5.34 ***	2.58	1.39-4.78 ***	2.76	1.43-5.34 ***
Number of times have talked to husband/partner about family planning in the								
Never	-	Reference	-	Reference	-	Reference	-	Reference
Once or twice	2.63	1.86-3.68 ***	1.94	1.36-2.77 ***	3.27	2.37-4.52 **	2.29	1.63-3.24 ***
More often	2.55	1.81-3.59 ***	2.02	1.41-2.90 ***	3.39	2.46-4.68 **	2.52	1.79-3.55 ***
Perceives contraceptive as accessible								
No	-	-	-	Reference	-	-	-	Reference
Yes	-	-	3.58	2.71-4.73 ***	-	-	3.73	2.83-4.92 ***
One unit increase in composite score on self-efficacy scale (1-5)	-	-	2.13	1.65-2.75 ***	-	-	2.20	1.69-2.87 ***

*p≤.10 **p≤.05 ***p≤.01

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Appendix Table A: Self Efficacy Scale Items by current modern method use

Variable	Current Use of Modern Methods				Total	
	Users		Non users		Mean	(SD)
	Mean	(SD)	Mean	(SD)		
	N=746		N=600	N=1346		
I am capable of using a modern contraceptive method to prevent pregnancy	3.9	(0.7)	3.4	(0.9)	3.7	(0.8)
I am able to correctly use:						
The oral contraceptive pill	3.4	(1.0)	3.1	(1.0)	3.3	(1.0)
Injectables	3.4	(1.0)	3.0	(1.0)	3.2	(1.1)
Condom	3.9	(0.8)	3.4	(1.0)	3.7	(0.9)
Female condom	3.2	(1.0)	3.0	(1.0)	3.1	(1.0)
Emergency contraception	3.3	(1.0)	2.9	(1.0)	3.1	(1.0)
Medical abortion	2.6	(1.0)	2.6	(1.0)	2.6	(1.0)
I am able to consistently use [method of interest]	3.9	(0.7)	3.3	(0.9)	3.6	(0.8)
I feel confident that I can obtain an effective birth spacing method	3.8	(0.7)	3.4	(0.9)	3.6	(0.8)
I can talk to my partner about using modern contraceptives to prevent pregnancy	3.8	(0.8)	3.4	(0.9)	3.6	(0.8)
I feel comfortable talking with a health care provider about birth space methods	3.9	(0.7)	3.4	(0.9)	3.7	(0.8)
I am capable of convincing my partner to use family planning	3.7	(0.8)	3.4	(0.9)	3.6	(0.9)
I am capable of using family planning even if my partner disagrees	3.6	(1.0)	3.3	(1.0)	3.5	(1.0)

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