

Background:

Assessing women's control over contraceptive decision-making is fundamental to understanding women's agency and gender equity in family planning. Correspondingly, gender transformative programming designed to increase women's agency is gaining greater recognition in the field of global reproductive health [1]. Despite progress on including women's agency in family planning interventions [2], we are less clear how best we can measure contraceptive decision-making to understand their relationships with gender transformative family planning outcomes. Existing measures of decision-making have proven to be significantly associated with contraceptive outcomes [3-10], but these measures are not clearly indicative of women's agency and may not capture women's engagement in decision-making dynamics and couple communication on contraceptive use [11]. Interpreting the nature of gendered decision-making and its impact on contraceptive use requires the study of complex marital and cultural dynamics across contexts, as contraceptive uptake is impeded by numerous social determinants, even if contraceptives are available [12]. Hence, we conducted a review of peer-reviewed publications on contraceptive decision-making measures and their association with contraceptive use to illuminate the state of the field, allowing us to advise better on best evidence measures of contraceptive decision-making that include agency assessment and are associated with contraceptive use.

Purpose: (1) To understand measurement of contraceptive decision-making, (2) to determine how measures of contraceptive decision-making assess women's agency versus women's inclusion in decision-making, and (3) to assess whether decision-making is associated with contraceptive use across country contexts.

Methods:

From June to August 2021, a review of peer-reviewed published literature on quantitative measures of decision-making was conducted using the following databases: PubMed, Google Scholar, and Embase to ensure comprehensive findings. Additionally, five international family planning research experts provided their recommendations of papers in this field. Only papers published in peer-reviewed journals from January 2011 to June 2021 were reviewed. All papers were in English and had a minimum of 200 participants in the study. Specific outputs by database were as follows:

- Our search with PubMed used the following terms: (((("decision-making") and ("family planning")) or ("contracep")) and (survey)). This yielded 261 abstracts published in the past 10 years. Of these, 53 articles met our inclusion criteria.
- Our search with Google Scholar used the following terms: "decision-making" and "family planning" or "contracep" and "survey". This search yielded 16,900 hits. From these, we identified 12 abstracts that met study criteria. Of these, 8 papers overlapped with the PubMed search results, yielding 4 new papers from this search.
- Our search with Embase used the following search terms: (('decision-making'/exp or 'decision-making'

and ('family planning'/exp or 'family planning') OR 'contracep') and ('survey'/exp or 'survey'). This yielded 341 abstracts. Of these, 46 were found in the previous two database searches. Hence, this search contributed 3 new papers.

- Our recommendations for additional papers from experts yielded 17 papers not otherwise identified via our searches.

For this brief, we focused on measures of women's contraceptive decision-making, which made 26 papers. These papers were reviewed to characterize the papers by: sample and sampling, the decision-making measures and variable construction, the nature of the contraceptive decision-making variable (including measures of contraceptive decision-making, measures of contraceptive and household decision-making, or measures of female contraceptive agency in decision-making), measures of contraceptive outcomes and demonstrated associations between contraceptive decision-making and contraceptive use. In our assessment of the contraceptive decision-making variables, we define female engagement and male engagement as indicating their involvement in decision-making, and female agency as indicating final or greater decision-making control inclusive of covert use, satisfaction with decision-making involvement, and/or equity in decision-making.

Results:

Of the 26 identified papers, 19 of these (73%) were published in the past 3 years (2019-2021), highlighting the increasing focus on improving measurement of women's decision-making in contraception in the field. Notably, despite no limitations on country inclusion in our search, all papers involved data from low- and middle-income countries

- 1) Measures of contraceptive decision-making (n=12; 46%),
- 2) Measures of contraceptive and household decision-making (n=8; 31%),
- 3) Measures of female contraceptive agency in decision-making (n=6; 23%).

(LMICs) representing mostly Africa and South Asia. Based on our review, we were able to categorize papers into one of three mutually exclusive categories:

Measures of Contraceptive Decision-Making

Of the 12 papers that included measures of contraceptive decision-making, 5 relied on a single-item measure: the standard DHS Contraceptive Decision-Making measure [13]. The other 7 papers utilized new measures similar to the DHS measure (5) or single-item contraceptive decision-making measures nearly identical to that of the DHS measure (2). All of these measures assessed “who” is the decision-maker for contraceptive use, with response options identifying women only, men only, women and men jointly, and other. Variable constructions included:

- joint decision-making vs. other types of decision-making (1 DHS paper [5]; 2 non-DHS papers [14, 15]),
- joint decision-making vs. mostly unilateral female decision-making vs. mostly unilateral male decision-making, occasionally combined with other decision-making types (4 DHS papers [3, 4, 6, 7]; 4 Non-DHS papers [16-19]), or
- female engagement in decision-making vs. no female engagement (1 non-DHS paper [20]).

The non-DHS measures were exceptionally similar to the DHS measure, with only slight variations.

Joint decision-making via these measures was consistently associated with increased contraceptive use and lower contraceptive discontinuation. Women in Ethiopia making joint contraceptive decisions reported a decreased likelihood of contraceptive discontinuation [4]. In Zambia, women making joint decisions were more likely to use injectable, long acting and permanent methods (ILAPMs) than women whose spouses were uninvolved in contraceptive decision-making [5]. Broadly across sub-Saharan Africa, contraceptive decisions made jointly were associated with increased uptake of female permanent contraception [6, 7].

Unilateral decision-making yielded less consistent results. Female unilateral decision-making was associated with an increased likelihood of contraceptive use in one Nigerian study and decreased likelihood of contraceptive discontinuation in an Ethiopian study [4, 18]. Women in Pakistan whose husbands made contraceptive decisions unilaterally, rather than jointly, were more likely to have an unmet need for family planning [3]. However, in sub-

Saharan Africa, unilateral decisions by males were associated with increased uptake of female permanent contraception [6, 7]. A similar measure applied in Ethiopia found no significant associations between any form of marital decision-making and LARC use [16].

Measures of Contraceptive and Household Decision-Making

Of the 8 papers that included combined measures of household and contraceptive decision-making, 3 used DHS data [8-10], while 5 employed unique measures [21-25]. All these measures assessed “who” was the decision-maker for contraceptive use. For the 3 DHS measures, household decisions included health care, freedom of movement, and financial decision-making, alongside contraceptive decision-making [8-10]. These measures assessed women's engagement in decision-making as joint or unilateral. Regarding the non-DHS measures, household decision-making included the domains of health care, child health and/or education, financial decision-making, freedom of movement, and sexual and fertility behaviors [21-25]. None of these papers used the same measure, but they all focused on female engagement (joint or unilateral) vs. lack of female engagement.

Female engagement of any extent in the form of joint or unilateral decision-making in household and contraceptive decisions was often, but not always, associated with increased contraceptive use and positive family planning outcomes. In India, a study found that joint contraceptive decision-making and partial or full female participation in household decision-making were associated with greater likelihood of spousal agreement on contraceptive use [8]. On the other hand, a combined measure of contraceptive, fertility, and household decision-making in Lao PDR identified female involvement of any extent in decisions as well as frequency of discussions on fertility and contraception with a partner yielded significant associations with decreased likelihood of contraceptive use among women not involved in financial decisions or discussions on contraception [21]. In Kenya and Eastern Ethiopia, summed scales for women's independent and joint decision-making across contraceptive, sex, and household decisions found that women's decision-making

involvement was not significantly associated with contraceptive use in Kenya but was associated with decreased likelihood of unmet need for contraception in Ethiopia [22, 23].

Female unilateral decision-making in household and contraceptive or fertility decisions yielded varied contraceptive outcomes across contexts. In Tanzania, a measure identifying female's independent decision-making on fertility and household decisions found that women involved in independent decision-making in these domains were significantly more likely to report use of condoms and other (non-specified) modern contraceptives [24]. Via DHS data in northern Nigeria, women making more autonomous household and contraceptive decisions were also at greater likelihood of using a modern contraceptive [9]. However, in Pakistan, findings suggest that joint decision-making was significantly associated with increased contraceptive uptake in this setting, while female-only decision-making was not [25].

Measures of Female Agency in Contraceptive Decision-Making

6 papers used measures focused on female contraceptive agency in decision-making, none of which were DHS measures and with no overlap. These measures focused on final, greater or equitable control over decision-making and satisfaction with level of control over decision-making.

Women's final or greater control over contraceptive and fertility decision-making was not consistently associated with contraceptive use, while the only measure of equitable fertility decision-making was. In urban Ghana, an index measure of contraceptive and fertility decision-making was constructed based on a woman's agreement with statements on using a contraceptive method, timing of pregnancy and what would happen in case of an unplanned pregnancy [26]. This study found that women who had the most say in contraceptive and reproductive decisions, were associated with significantly greater likelihood of having used contraceptives at last sex [26].

One study in Ethiopia constructing its contraceptive decision-making measure around who has the *final* say in deciding upon a family planning method, with responses categorized as self or joint decisions, did not find significant associations between any form of marital decision-making and contraceptive use [27]. Meanwhile, a similar measure applied in rural Ethiopia individually assessed contraceptive associations with 1) who makes the final decision on using family planning, 2) if there was a discussion between the spouses on family planning, and 3) if the wife can use family planning without the husband's consent, demonstrated no significant associations between a husband's control over decision-making nor wife's ability to use family planning without a husband's consent and contraceptive use. However, discussion with a spouse on contraception remained significantly associated with contraceptive use [28].

Similarly, the Contraceptive Final Decision-Maker measure applied in rural India asked married women who would make the final decision to use contraceptives if their husband disagreed with them on the matter, and found that women reporting that they themselves would make the final decision did not have an increased likelihood of using contraceptives in general, though they were more likely to use oral contraceptive pills specifically [29]. In another study in India, it was shown that perceived equity in fertility decision-making was significantly associated with increased likelihood of using contraceptives [30].

Women's final control and satisfaction with involvement in decision-making showed associations with fertility goals but not contraceptive uptake. The Reproductive Decision-Making Agency measure, applied in Nepal, found that women with high agency were significantly more likely to feel that they could achieve or had already achieved their fertility desires, and demonstrated a trend, without statistical significance, toward having met contraceptive need [31]

Discussion:

Contraceptive decision-making is an area of increasing interest in the field of global reproductive health, as indicated by the recent increase in peer-reviewed literature on the topic. However, the field largely continues to rely on DHS measures, which reflect gendered engagement more than agency in decision-making. Newer measures of agency also have seen little replicability, again, limiting our understanding of this issue. Further, developing knowledge is restricted to LMICs as many national and regional contexts are missing from existing literature. Nonetheless, the growth in analysis and development of measures on this topic offers important insights regarding how we measure decision-making and whether decision-making is associated with contraceptive behaviors.

We find that there are three key ways decision-making measures are being utilized: via measurement of male engagement in joint contraceptive decision-making, measurement of female engagement in contraceptive and household decision-making, and measurement of female agency in contraceptive decision-making. Each of these distinct aspects of decision-making are yielding differential findings regarding associations with contraceptive use and understanding this will not only enable optimization of measures but also targets for family planning intervention.

Contraceptive decision-making measures constructed around joint decision-making produce consistent associations with contraceptive use across LMICs, which is likely why they continue to be the standard measure used in the field. Notably, these measures seeking to identify joint decision-making may truly be revealing of supportive male engagement in LMIC contexts [32]. However, our understanding of the extent to which each partner is involved in the joint decision is not addressed by measures of this nature [11].

Similarly, the combined measures of household and contraceptive decision-making all sought to identify female engagement in decisions, and often demonstrated association with increased contraceptive use when the measure construction was inclusive of joint decision-making. The addition of household decision-making components to the measures highlights that there is an association between female household decision-making involvement and contraceptive use outcomes, with an emphasis on the importance of involvement in financial decision-making in one of our evaluated studies [21].

Measures of agency across LMICs demonstrated that agency, even inclusive of female final decision-making control, satisfaction with involvement, and self-efficacy for covert use, was not as frequently associated with increased contraceptive uptake in many contexts as was male engagement in joint decision-making. Hence, although these measures of agency provide more insight into the nature of gendered engagement and dynamics in the decision-making process than the measures identifying male or female involvement in decisions, they were less often prognostic of contraceptive use.

Taken together, these findings support the field of knowledge suggesting that joint decision-making, an indicator of male engagement in a joint capacity in LMICs, is the key driver of desirable contraceptive use outcomes [33-36]. When spouses decide upon contraceptive use together, this is more indicative of equitable and non-traditional gender roles that are more amenable to contraceptive uptake, highlighting the known importance of spousal communication and joint engagement [33-37]. Our findings that decision-making unilaterally or with greater influence by women does not consistently predict increased contraceptive use across contexts may be indicative of negative impacts arising from lack of males' support or approval of contraceptive use, which have been found to be significant determinants of family planning outcomes [22, 35, 38]. Additionally, contraceptive and household decision-making measures indicate the value of household decision-making in conjunction with contraceptive and fertility decision-making as predictive of contraceptive use, as their observed outcomes are not entirely unique from those of joint decision-making on contraceptive use alone [39]. As such, intervention programs should consider integrating both contraceptive and household decision-making, with some indication for emphasis on financial decision-making in our analysis and healthcare and mobility decisions in other analyses [43]. Lastly, regarding agency measures, although female final decision-making control does not seem to be as meaningful in producing contraceptive uptake, there is promise for addressing women's fertility goals, an important outcome in support of women's reproductive autonomy [31].

Conclusions:

Striking a balance between desirable public health outcomes – met contraceptive need – and women's personal reproductive desires is a challenging, yet necessary endeavor which can be informed by high quality measures and enabled by intervention. Thus, male engagement in joint decision-making should be the key target of family planning intervention programs, but promoting male engagement in joint decisions to increase contraceptive use without supporting female agency or involvement would be dangerous to gender equity and female autonomy [42, 44, 45]. Our current standard measures of decision-making are not inclusive of female agency, therefore there is a need to better understand the nature of this by providing more comprehensive measures to become a standard of the field.

Correspondingly, development of broader measures of female agency and male engagement are also pertinent to understanding and improving family planning outcomes [44, 46]. Measurement of agency can subsequently characterize women's self-efficacy and actions involving communication initiation, assertive communication, seeking out of family planning counseling, and resistance against fertility pressures, such as covert seeking of contraceptive counseling or use [44]. This body of work reinforces the need for the field to focus on building female agency and respectful male engagement, without compromising either. Our findings therefore suggest that approaches to intervention and measure development may benefit from a combination of targets including male engagement, female agency, and female household or economic positioning and autonomy.

References:

1. Kågesten A, Chandra-Mouli V: Gender-transformative programmes: implications for research and action. *The Lancet Global Health* 2020, 8(2):e159-e160.
2. Prata N, Fraser A, Huchko MJ, Gipson JD, Withers M, Lewis S, Ciaraldi EJ, Upadhyay UD: Women's Empowerment and Family Planning: A Review of the Literature. *J Biosoc Sci* 2017, 49(6):713-743.
3. Asif MF, Pervaiz Z, Afridi JR, Abid G, Lassi ZS: Role of husband's attitude towards the usage of contraceptives for unmet need of family planning among married women of reproductive age in Pakistan. *BMC Women's Health* 2021, 21(1):163.
4. Mekonnen BD, Wubneh CA: Prevalence and associated factors of contraceptive discontinuation among reproductive-age women in Ethiopia: using 2016 Nationwide Survey Data. *Reprod Health* 2020, 17(1):175.
5. Mutombo N, Bakibinga P: The effect of joint contraceptive decisions on the use of Injectables, Long-Acting and Permanent Methods (ILAPMs) among married female (15-49) contraceptive users in Zambia: a cross-sectional study. *Reprod Health* 2014, 11:51.
6. Olakunde BO, Pharr JR, Chien LC, Benfield RD, Sy FS: Individual- and country-level correlates of female permanent contraception use in sub-Saharan Africa. *PLoS One* 2020, 15(12):e0243316.
7. Anita P, Nzabona A, Tuyiragize R: Determinants of female sterilization method uptake among women of reproductive age group in Uganda. *Contracept Reprod Med* 2020, 5:25.
8. Govil D, Khosla N: Concordance in spousal reports of current contraceptive use in India. *J Biosoc Sci* 2021, 53(4):606-622.
9. Alabi O, Odimegwu CO, De-Wet N, Akinyemi JO: Does Female Autonomy Affect Contraceptive Use among Women in Northern Nigeria? *Afr J Reprod Health* 2019, 23(2):92-100.
10. Haque R, Alam K, Rahman SM, Keramat SA, Al-Hanawi MK: Women's empowerment and fertility decision-making in 53 low and middle resource countries: a pooled analysis of demographic and health surveys. *BMJ Open* 2021, 11(6):e045952.
11. Peterman GSaA: Context and measurement: An analysis of the relationship between intrahousehold decision making and autonomy. *World Development* 2018, 111:97-112.
12. Ndayizigiye M, Fawzi MC, Lively CT, Ware NC: Understanding low uptake of contraceptives in resource-limited settings: a mixed-methods study in rural Burundi. *BMC Health Serv Res* 2017, 17(1):209.
13. ICF: DHS Model Questionnaire - Phase 8 (English, French). In: *Funded by USAID*. DHS Program Website.; 2020.
14. Etokidem AJ, Ndifon W, Etowa J, Asuquo EF: Family planning practices of rural community dwellers in cross River State, Nigeria. *Niger J Clin Pract* 2017, 20(6):707-715.
15. Aziz MM, Elgibaly O, Mohammed HM: Family planning perspectives and practices of married adolescent girls in rural Upper Egypt. *Eur J Contracept Reprod Health Care* 2021, 26(3):214-220.
16. Gashaye KT, Tsegaye AT, Abebe SM, Woldetsadik MA, Ayele TA, Gashaw ZM: Determinants of long acting reversible contraception utilization in Northwest Ethiopia: An institution-based case control study. *PLoS One* 2020, 15(10):e0240816.
17. Komasawa M, Yuasa M, Shirayama Y, Sato M, Komasawa Y, Alouri M: Demand for family planning satisfied with modern methods and its associated factors among married women of reproductive age in rural Jordan: A cross-sectional study. *PLoS One* 2020, 15(3):e0230421.
18. Iiyasu Z, Galadanci HS, Zubair KA, Abdullahi HM, Jalo RI, Aliyu MH: Fertility desire concordance and contraceptive use among couples living with HIV in northern Nigeria. *Eur J Contracept Reprod Health Care* 2020, 25(5):372-380.
19. Sekoni OO, Owoaje ET: Factors associated with family planning uptake among women in south west Nigeria. *Contraception* 2013, 88(2):315-316.
20. Kalra N, Ayankola J, Babalola S: Healthcare provider interaction and other predictors of long-acting reversible contraception adoption among women in Nigeria. *Int J Gynaecol Obstet* 2019, 144(2):153-160.
21. Chanthakoumane K, Maguet C, Essink D: Married couples' dynamics, gender attitudes and contraception use in Savannakhet Province, Lao PDR. *Glob Health Action* 2020, 13(sup2):1777713.
22. Wegs C, Creanga AA, Galavotti C, Wamalwa E: Community Dialogue to Shift Social Norms and Enable Family Planning: An Evaluation of the Family Planning Results Initiative in Kenya. *PLoS One* 2016, 11(4):e0153907.
23. Dingeta T, Oljira L, Worku A, Berhane Y: Unmet Need for Contraception Among Young Married Women in Eastern Ethiopia. *Open Access J Contracept* 2019, 10:89-101.
24. Garrison-Desany HM, Wilson E, Munos M, Sawadogo-Lewis T, Maïga A, Ako O, Mkuwa S, Hobbs AJ, Morgan R: The role of gender power relations on women's health outcomes: evidence from a maternal health coverage survey in Simiyu region, Tanzania. *BMC Public Health* 2021, 21(1):909.
25. Hameed W, Azmat SK, Ali M, Sheikh MI, Abbas G, Temmerman M, Avan BI: Women's empowerment and contraceptive use: the role of independent versus couples' decision-making, from a lower middle income country perspective. *PLoS One* 2014, 9(8):e104633.
26. Loll D, Fleming PJ, Manu A, Morhe E, Stephenson R, King EJ, Hall KS: Reproductive Autonomy and Modern Contraceptive Use at Last Sex Among Young Women in Ghana. *Int Perspect Sex Reprod Health* 2019, 45:1-12.
27. Tadele A, Abebaw D, Ali R: Predictors of unmet need for family planning among all women of reproductive age in Ethiopia. *Contracept Reprod Med* 2019, 4:6.
28. Tilahun T, Coene G, Temmerman M, Degomme O: Spousal discordance on fertility preference and its effect on contraceptive practice among married couples in Jimma zone, Ethiopia. *Reprod Health* 2014, 11:27.
29. Nazarbegian M, Averbach S, Johns NE, Ghule M, Silverman J, Lundgren R, Battala M, Begum S, Raj A: Associations between contraceptive decision-making and marital contraceptive communication and use in rural Maharashtra, India. Unpublished manuscript, 2021.
30. Shakya HB, Dasgupta A, Ghule M, Battala M, Saggurti N, Donta B, Nair S, Silverman J, Raj A: Spousal discordance on reports of contraceptive communication, contraceptive use, and ideal family size in rural India: a cross-sectional study. *BMC Womens Health* 2018, 18(1):147.

31. Hinson L, Edmeades J, Murithi L, Puri M: Developing and testing measures of reproductive decision-making agency in Nepal. *SSM Popul Health* 2019, 9:100473.
32. Bankole A, Singh S: Couples' Fertility and Contraceptive Decision-Making in Developing Countries: Hearing the Man's Voice. *International Family Planning Perspectives* 1998, 24(1):15-24.
33. Ezeanolue EE, Iwelunmor J, Asaolu I, Obiefune MC, Ezeanolue CO, Osuji A, Ogidi AG, Hunt AT, Patel D, Yang W *et al*: Impact of male partner's awareness and support for contraceptives on female intent to use contraceptives in southeast Nigeria. *BMC Public Health* 2015, 15:879.
34. Lee T, Lee H, Ahn HM, Jang Y, Shin H, Kim MS: Perceptions about family planning and contraceptive practice in a marital dyad. *J Clin Nurs* 2014, 23(7-8):1086-1094.
35. Prata N, Bell S, Fraser A, Carvalho A, Neves I, Nieto-Andrade B: Partner Support for Family Planning and Modern Contraceptive Use in Luanda, Angola. *Afr J Reprod Health* 2017, 21(2):35-48.
36. Truong S, Villar de Onis J, Lindley A, Bazúa R, Reyes A, Montaña M, Marcotrigiano L, Molina RL: Gender-Informed Family Planning Perceptions and Decision-Making in Rural Chiapas, Mexico: A Mixed-Methods Study. *Int J Reprod Med* 2020, 2020:1929143.
37. Fleming PJ, Silverman J, Ghule M, Ritter J, Battala M, Velhal G, Nair S, Dasgupta A, Donta B, Saggurti N *et al*: Can a Gender Equity and Family Planning Intervention for Men Change Their Gender Ideology? Results from the CHARM Intervention in Rural India. *Stud Fam Plann* 2018, 49(1):41-56.
38. Edietah EE, Njotang PN, Ajong AB, Essi MJ, Yakum MN, Mbu ER: Contraceptive use and determinants of unmet need for family planning; a cross sectional survey in the North West Region, Cameroon. *BMC Womens Health* 2018, 18(1):171.
39. Islam AZ, Mostofa MG, Islam MA: Factors affecting unmet need for contraception among currently married fecund young women in Bangladesh. *Eur J Contracept Reprod Health Care* 2016, 21(6):443-448.
40. Adokiya MN, Boah M, Adampah T: Women's autonomy and modern contraceptive use in Ghana: a secondary analysis of data from the 2014 Ghana Demographic and Health Survey. *Eur J Contracept Reprod Health Care* 2021:1-7.
41. Osuafor GN, Maputle SM, Ayiga N: Factors related to married or cohabiting women's decision to use modern contraceptive methods in Mahikeng, South Africa. *Afr J Prim Health Care Fam Med* 2018, 10(1):e1-e7.
42. Blackstone SR: Women's Empowerment, Household Status and Contraception Use in Ghana. *J Biosoc Sci* 2017, 49(4):423-434.
43. Islam AZ: Factors affecting modern contraceptive use among fecund young women in Bangladesh: does couples' joint participation in household decision making matter? *Reprod Health* 2018, 15(1):112.
44. Bhan N, Raj A: From choice to agency in family planning services. *The Lancet* 2021, 398(10295):99-101.
45. Harrington EK, Dworkin S, Withers M, Onono M, Kwena Z, Newmann SJ: Gendered power dynamics and women's negotiation of family planning in a high HIV prevalence setting: a qualitative study of couples in western Kenya. *Cult Health Sex* 2016, 18(4):453-469.
46. Galle A, Griffin S, Roelens K, Degomme O: Towards a global framework for assessing male involvement in maternal health : results of an international Delphi study. *BMJ Open* 2021.



Center on Gender Equity and Health
9500 Gilman Drive
La Jolla, CA 92093-0507
Phone: +1 858)246-0066



geh@ucsd.edu
edwin.gehindia@gmail.com



@GEH_UCSD
@EMERGE_GEH

Acknowledgements: Funding support from the Bill and Melinda Gates Foundation Grant No. INV-002967 (EMERGE-FP).

For **resources** on measuring gender equity in FP: <https://emerge.ucsd.edu/gem-fp/>

Suggested Citation: Nazarbegian, M., Averbach, S., Bhan, N., Thomas, E. E., & Raj, A. (2022, March). *EMERGE Report: Measurement of Contraceptive Decision-Making and Contraceptive Use*. Center on Gender Equity and Health (GEH), UC San Diego.

Table 1. Measures of Contraceptive Decision-Making

Citation	Sample, Sampling, Regions, Year of Data Collection	Decision-Making Measures and Variable Construction	Measures of Contraceptive Outcomes	Demonstrated Associations Between Contraceptive Decision-Making and Contraceptive Use
<p>Mekonnen BD, Wubneh CA: Prevalence and associated factors of contraceptive discontinuation among reproductive-age women in Ethiopia: using 2016 Nationwide Survey Data. <i>Reprod Health</i> 2020, 17(1):175.</p>	<p>Year of Data Collection: 2016 Region: Ethiopia (Rural and Urban regions) Sample: (n=10,871) Women aged 15-49 years Recruitment: Household, DHS dual-stage stratified sampling</p>	<p>DHS Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together? - <i>Mainly respondent, Mainly husband/partner, Joint decision, Other</i></p> <p>Construction: Same as response options. [Reference = Other]</p>	<p>Variable: Contraceptive Discontinuation</p> <p>Survey Questions and Response Options: Have you used a contraceptive method in the past 12 months, but are not using a contraceptive method currently? <i>Yes/No</i></p> <p>Construction: Yes / No</p>	<p>Outcome: Contraceptive Discontinuation</p> <p>Association with DM: <i>Mainly respondent</i> - [AOR=0.54, 95% CI (0.38,0.77), p=0.000] <i>Jointly</i> - [AOR=0.38, 95% CI (0.29,0.48), p=0.001] Mainly Husband not significantly associated.</p> <p>Key Finding: Compared to contraceptive decisions made by others, contraceptive decision-making by women themselves or jointly with their spouses was associated with decreased odds of contraceptive discontinuation, with joint decision-making having the lowest odds.</p>
<p>Mutombo N, Bakibinga P: The effect of joint contraceptive decisions on the use of Injectables, Long-Acting and Permanent Methods (ILAPMs) among married female (15-49) contraceptive users in Zambia: a cross-sectional study. <i>Reprod Health</i> 2014, 11:51.</p>	<p>Year of Data Collection: 2007 Region: Zambia (Rural and Urban regions) Sample: (n=1,630) Married women, aged 15-49 Recruitment: Household, DHS stratified dual-stage sampling</p>	<p>DHS Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together? - <i>Mainly respondent, Mainly husband/partner, Joint decision, Other</i></p> <p>Construction: Joint / Other (Contraceptive decision made solely by Respondent, Partner/husband, or Someone else)</p>	<p>Variable: Type of Contraceptive Method (Use of ILAPM)</p> <p>Survey Questions and Response Options: Which (contraceptive) method are you using? - <i>Female sterilization, Male sterilization, Pill, IUD, Injectables, Implants, Condom, Female Condom, Diaphragm, Foam/Jelly, LAM, Rhythm, Withdrawal, Other</i></p> <p>Construction: Short-acting methods / ILAPMs (injectables, implants, IUDs, and permanent methods)</p>	<p>Outcome: Type of Contraceptive Method (Use of ILAPM)</p> <p>Association with DM: <i>Other</i> - [OR = 0.709, p<0.010]</p> <p>Key Finding: Women who made joint contraceptive decisions were more likely to use ILAPMs than women whose spouses were uninvolved in contraceptive decision-making.</p>
<p>Olakunde BO, Pharr JR, Chien LC, Benfield RD, Sy FS: Individual- and country-level correlates of female permanent contraception use in sub-Saharan Africa. <i>PLoS One</i> 2020, 15(12):e0243316.</p>	<p>Year of Data Collection: 2010-2018 Region: Sub-Saharan Africa - Angola, Benin, Burkina Faso, Burundi, Cameroon, Chad, Comoros, Congo, Congo DR, Cote d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Liberia, Malawi, Mali, Mozambique, Namibia, Niger, Nigeria, Rwanda, Senegal, Sierra Leone, South Africa, Togo, Uganda, Zambia, Zimbabwe (Rural and Urban regions in each country) Sample: (n=29,777) Married or in-union women, aged 15-49 years Recruitment: Household, DHS stratified dual-stage sampling</p>	<p>DHS Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together? - <i>Mainly respondent, Mainly husband/partner, Joint decision, Other</i></p> <p>Construction: Mainly respondent [reference] (0), Joint decision (1), Mainly husband/partner or Others (2)</p>	<p>Variable: Modern Contraceptive Use (Use of Female Permanent Contraception)</p> <p>Survey Questions and Response Options: Not specified</p> <p>Construction: (1) Use of FPC (Female Permanent Contraception) / (0) Use of other modern contraceptives</p>	<p>Outcome: Modern Contraceptive Use (Use of Female Permanent Contraception)</p> <p>Association with DM: <i>Mainly husband/partner or Others</i> - [OR = 2.46, 95% CI (1.97, 3.07), p<0.0001] <i>Joint decision</i> - [OR = 1.68, 95% CI (1.43, 1.99), p<0.0001]</p> <p>Key Finding: Husband-only and joint contraceptive decisions resulted in higher uptake of female permanent contraception than female-only decisions.</p>

<p>Anita P, Nzabona A, Tuyiragize R: Determinants of female sterilization method uptake among women of reproductive age group in Uganda. <i>Contracept Reprod Med</i> 2020, 5:25.</p>	<p>Year of Data Collection: 2016 Region: Uganda (Rural and Urban regions) Sample: (n=18,506) Women aged 15-49 years Recruitment: Household, DHS stratified dual-stage sampling</p>	<p>DHS Contraceptive and Economic Decision-Making</p> <p>Survey Questions and Response Options: 1) Who usually decides how the money you earn will be used? - <i>Respondent, Husband/partner, Respondent and husband/partner jointly, Other</i> 2) Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together? - <i>Mainly respondent, Mainly husband/partner, Joint decision, Other</i></p> <p>Construction: Respondent [Reference] / Husband or Partner / Joint Decision</p>	<p>Variable: Sterilization Status</p> <p>Survey Questions and Response Options: 1) Are you currently doing something or using any method to delay or avoid getting pregnant? - <i>Yes/No</i> 2) (If using current method of contraception) Which method are you using? - <i>Female sterilization, Male sterilization, IUDs, Injectables, Implants, Pill, Condom, Female Condom, Diaphragm, Foam/Jelly, LAM, Rhythm, Withdrawal, Other</i></p> <p>Construction: Sterilized / Not Sterilized</p>	<p>Outcome: Sterilization Status (Female Sterilization Uptake)</p> <p>Association with DM: <u>Contraceptive Decision-Making</u> <i>Husband/Partner</i> - [OR=2.42, 95% CI (1.55, 3.78), p<0.001] <i>Joint Decision</i> - [OR=1.38, 95% CI (1.02, 1.86), p=0.034]</p> <p><u>Financial Decision-Making</u> was not significantly associated with sterilization.</p> <p>Key Finding: Contraceptive decisions made by a husband/partner or jointly between spouses was associated with an increased odds of female sterilization.</p>
<p>Asif MF, Pervaiz Z, Afridi JR, Abid G, Lassi ZS: Role of husband's attitude towards the usage of contraceptives for unmet need of family planning among married women of reproductive age in Pakistan. <i>BMC Women's Health</i> 2021, 21(1):163.</p>	<p>Year of Data Collection: 2017-2018 Region: Pakistan (Rural and Urban regions) Sample: (n=12,113) Married women aged 15-49 Recruitment: Household, DHS dual-stage stratified sampling</p>	<p>DHS Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Would you say that not using contraception is mainly your decision, mainly your husband's/partner's decision? - <i>Mainly respondent, Mainly husband/partner, Joint decision, Other</i></p> <p>Construction: Women's Decision [reference] / Husband's Decision</p>	<p>Variable: Unmet Need for Family Planning (UMNFP)</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: Having UMNFP / Not Having UMNFP</p>	<p>Outcome: Unmet Need for Family Planning (UMNFP)</p> <p>Association with DM: <i>Husband's Decision</i> - [OR = 1.336; 95% CI (1.215, 1.469), p=0.000]</p> <p>Key Finding: Women whose husbands alone made the decision to not use family planning had a higher likelihood of having unmet need for family planning.</p>
<p>Sekoni OO, Owoaje ET: Factors associated with family planning uptake among women in south west Nigeria. <i>Contraception</i> 2013, 88(2):315-316.</p>	<p>Year of Data Collection: 2008-2009 Region: South West Nigeria Sample: (n=254) Women aged 15-49 years Recruitment: Not specified.</p>	<p>Family Planning Decision-Maker</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: Not specified.</p>	<p>Variable: Contraceptive Use</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: Use / Non-Use</p>	<p>Outcome: Contraceptive Use</p> <p>Association with DM: <i>Joint Decision-Making on FP</i> - Significant association with use of any method [p<0.05].</p> <p>Key Finding: Joint decision-making on family planning was significantly associated with using any contraceptive method.</p>

<p>Kalra N, Ayankola J, Babalola S: Healthcare provider interaction and other predictors of long-acting reversible contraception adoption among women in Nigeria. <i>Int J Gynaecol Obstet</i> 2019, 144(2):153-160.</p>	<p>Year of Data Collection: 2014 Region: Nigeria (Urban) Sample: (n=576) Women aged 18-49 years Recruitment: Clinic, Recruited women attending appointments at any of 42 selected family planning sites with family planning counselors</p>	<p>Contraceptive Decision-Making and Communication</p> <p>Survey Questions and Response Options: 1) Decision regarding family planning - <i>Individually, Partner, Other, Jointly</i> 2) Discussed family planning with partner in last 6 months - <i>Yes/No</i></p> <p>Construction: 1) Jointly / Individually, Partner, Other; 2) Yes / No</p>	<p>Variable: Type of Contraceptive Method Adopted after Consultation with Provider</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: LARC / Short-Term Method</p>	<p>Outcome: Type of Contraceptive Method Adopted after Consultation with Provider (LARC Adoption)</p> <p>Association with DM: <i>[Decision] Jointly</i> - [AOR=1.51, 95% CI (1.04, 2.20), p=0.039] <i>[Discussion] No</i> - [AOR=0.78, 95% CI (0.54, 1.86), p=0.419] - Not significant.</p> <p>Key Finding: Joint decision-making on family planning was associated with an increased odds of LARC adoption after consultation with a provider, while discussion with a spouse was not.</p>
<p>Etokidem AJ, Ndifon W, Etowa J, Asuquo EF: Family planning practices of rural community dwellers in cross River State, Nigeria. <i>Niger J Clin Pract</i> 2017, 20(6):707-715.</p>	<p>Year of Data Collection: Not Specified. Region: Cross River State of Nigeria (Rural) Sample: (n=290) Women in rural LGAs (Local Government Areas) Recruitment: Women assembled in a community hall to complete the questionnaire, Convenience sampling</p>	<p>Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Who makes decision regarding family planning? - <i>Wife, Husband, Both of us, Others</i></p> <p>Construction: Decision-Maker Alone / Joint</p>	<p>Variable 1: Use of Family Planning at Some Point in Time</p> <p>Survey Questions and Response Options: Have you ever used any family planning method? - <i>Yes/No</i></p> <p>Construction: Yes / No</p>	<p>Outcome: Use of Family Planning at Some Point in Time</p> <p>Association with DM: <i>Decision-Maker Alone</i> - [OR = 0.567, 95% CI (0.391,0.821)]</p> <p>Key Finding: Decisions made alone by spouses or other entities demonstrated a decreased likelihood of family planning use. There is a greater likelihood of using family planning at any point in time when contraceptive decisions are made jointly.</p>
<p>Aziz MM, Elgibaly O, Mohammed HM: Family planning perspectives and practices of married adolescent girls in rural Upper Egypt. <i>Eur J Contracept Reprod Health Care</i> 2021, 26(3):214-220.</p>	<p>Year of Data Collection: Not Specified. Region: Upper Egypt (23 Villages of 2 Governorates, Rural) Sample: (n=729) Married adolescent girls under age 20 Recruitment: Household, Recruitment via community outreach</p>	<p>Contraceptive Method Decision-Maker</p> <p>Survey Questions and Response Options: Identification of contraceptive method decision-maker. - <i>Shared Husband-Wife Decision / Other</i></p> <p>Construction: Shared Husband-Wife Contraceptive Decision / Not Shared Decision</p>	<p>Variable: Ever Use of Contraception</p> <p>Survey Questions and Response Options: Not Specified.</p> <p>Construction: Ever Used Contraception / Never Used</p>	<p>Outcome: Ever Use of Contraception</p> <p>Association with DM: <i>Shared Contraceptive Decision</i> - [B=0.55, SE 0.25; OR = 1.74, 95% CI (1.05, 2.88), p<0.05]</p> <p>Key Finding: Women participating in shared contraceptive decision-making had a higher likelihood of ever having used contraceptives.</p>
<p>Iliyasu Z, Galadanci HS, Zubair KA, Abdullahi HM, Jalo RI, Aliyu MH: Fertility desire concordance and contraceptive use among couples living with HIV in northern Nigeria. <i>Eur J Contracept Reprod Health Care</i> 2020, 25(5):372-380.</p>	<p>Year of Data Collection: Not specified. Region: Nigeria (S.S. Wali Antiretroviral Treatment Clinic, Aminu Kano Teaching Hospital, Kano, Nigeria) Sample: (n=205) Married men, aged 18 years and over, and (n=194) women, aged 15-49 years, receiving ART at specified clinic Recruitment: ART Clinic, Systematic sampling; Patients enrolled during follow-up healthcare visits</p>	<p>Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Not specified. Identification of <u>the contraceptive decision-maker</u>.</p> <p>Construction: (1)Male partner [reference], (2) Female partner, (3) Joint decision</p>	<p>Variable: Current Contraceptive Use</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: Currently using / Not currently using</p>	<p>Outcome: Current Contraceptive Use</p> <p>Association with DM: <i>Joint decision</i> - [OR=2.96; 95% CI (1.82, 4.80), P=0.026] <i>Female partner decides</i> - [OR=3.55; 95% CI (1.32, 9.56), P=0.021]</p> <p>Key Finding: Contraceptive use was significantly higher in couples making joint decisions and female-only decisions.</p>

<p>Komasawa M, Yuasa M, Shirayama Y, Sato M, Komasawa Y, Alouri M: Demand for family planning satisfied with modern methods and its associated factors among married women of reproductive age in rural Jordan: A cross-sectional study. <i>PLoS One</i> 2020, 15(3):e0230421.</p>	<p>Year of Data Collection: 2016 Region: Jordan (Rural) Sample: (n=1,019) Married women aged 15-49 years Recruitment: Household, Two-stage stratified sampling (random sampling at household stage)</p>	<p>Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Main decision-maker for contraceptive use - <i>Wife only, Wife and Husband, Husband only, Other</i></p> <p>Construction: Wife Only / Wife and Husband / Other</p>	<p>Variable: Demand for Family Planning with Modern Contraceptive Methods (mDFPS)</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: Met / Unmet mDFPS</p> <p>mDFPS as defined by WHO - Numerator consists of married women identified as using any modern contraceptives in the month prior to the time of the study. Denominator consists of all married women identified as having need for modern contraceptive methods.</p>	<p>Outcome 1: mDFPS</p> <p>Association with DM: <i>Wife and Husband</i> - 84.3% <i>Wife Only</i> - 7.8% <i>Other</i> - 7.8%</p> <p>Outcome 2: Unmet mDFPS</p> <p>Association with DM: <i>Wife and Husband</i> - 92.1% <i>Wife Only</i> - 6.7% <i>Other</i> - 1.2%</p> <p>p<0.001</p> <p>Key Finding: Male participation with wife in contraceptive decision-making affects mDFPS.</p>
<p>Gashaye KT, Tsegaye AT, Abebe SM, Woldetsadik MA, Ayele TA, Gashaw ZM: Determinants of long acting reversible contraception utilization in Northwest Ethiopia: An institution-based case control study. <i>PLoS One</i> 2020, 15(10):e0240816.</p>	<p>Year of Data Collection: 2016 Region: Amhara Regional State, Northwest Ethiopia (Rural and Urban) Sample: (n=1,167) Women using LARCs and SARCs who obtain care at NGO healthcare facilities Recruitment: Clinic, Participants recruited via exit interview at healthcare visits for family planning, Systematic random sampling</p>	<p>Contraceptive Decision-Maker</p> <p>Survey Questions and Response Options: Who decided to use the current contraceptive method? - <i>Self, Mainly husband/partner, Joint decision, Healthcare provider advise</i></p> <p>Construction: Same as response options.</p>	<p>Variable: LARC Use</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: LARC Use / Other Modern Contraceptive Use</p>	<p>Outcome: LARC Use</p> <p>Association with DM: <i>Healthcare provider advise</i> - [AOR=10.7, 95% CI (3.3, 34.9), p<0.05] Self, Husband/Partner, and Joint Decisions were not significantly associated with LARC use vs. other modern contraceptive use.</p> <p>Key Finding: Women using LARCs were more likely to have chosen LARCs due to healthcare provider advice than users of other modern contraceptives.</p>

Table 2. Measures of Contraceptive and Household Decision-Making

Citation	Sample, Sampling, Regions, Year of Data Collection	Decision-Making Measures and Variable Construction	Measures of Contraceptive Outcomes	Demonstrated Associations Between Contraceptive Decision-Making and Contraceptive Use
<p>Govil D, Khosla N: Concordance in spousal reports of current contraceptive use in India. <i>J Biosoc Sci</i> 2021, 53(4):606-622.</p>	<p>Year of Data Collection: 2015-2016 Region: India (Rural and Urban regions) Sample: (n=63,060) Married couples, Women aged 15-49 years and men aged 15-54 years Recruitment: Household, DHS stratified dual-stage sampling</p>	<p>DHS Contraceptive and Household (Healthcare, Freedom of Movement, Financial) Decision-Making (Combined Index)</p> <p>Survey Questions and Response Options: <u>Household:</u> 1) Who usually makes decisions about healthcare for yourself? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Other</i> 2) Who usually makes decisions about making major household purchases? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Someone else, Other</i> 3) Who usually makes decisions about visits to your family or relatives? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Someone else, Other</i> 4) Who usually decides how your husband/partner's earnings will be used? - <i>Respondent, Husband/partner, Respondent and husband/partner jointly, Husband/partner has no earnings, Other</i> <u>Contraceptive:</u> Who makes decisions on contraceptive use? - <i>Only wife, Jointly with husband, Other</i></p> <p>Construction: Household Decision-Making index score calculated by adding 1 point for all Wife alone or Joint Decisions, and 0 to any other response.</p>	<p>Variable: Agreement Between Spouses on Contraceptive Use</p> <p>Survey Questions and Response Options: Men: The last time you had sex, did you or your partner use any contraceptive? If yes, which method you or your partner used? Women: Are you or your partner currently using any contraceptive method to avoid pregnancy?</p> <p>Construction: 1) Husband and wife reported the same method, 2) Husband and wife reported contraceptive use but different methods, 3) Husband said no, and wife said yes to contraceptive use; 4) Husband said yes and wife said no to contraceptive use, and 5) Both reported no contraceptive use</p> <p>Agreements classified as: Exact agreement on contraceptive use, Agreement on specific method, or Agreement on use of limiting method</p>	<p>Outcome: Agreement Between Spouses on Contraceptive Use (Exact Agreement)</p> <p>Association with DM: <u>Household:</u> <i>Partial</i> - [OR=1.188, 95% CI (1.078, 1.310), p<0.001] <i>Full</i> - [OR=1.202, 95% CI (1.097, 1.317), p<0.001] <u>Contraceptive:</u> <i>Joint</i> - [OR=1.116, 95% CI (1.007, 1.236), p<0.05]</p> <p>Key Finding: Household decision-making partially or fully involving wives, as well as joint contraceptive decision-making, were associated with greater likelihood of exact agreement between spouses on contraceptive use.</p>

<p>Haque R, Alam K, Rahman SM, Keramat SA, Al-Hanawi MK: Women's empowerment and fertility decision-making in 53 low and middle resource countries: a pooled analysis of demographic and health surveys. <i>BMJ Open</i> 2021, 11(6):e045952.</p>	<p>Year of Data Collection: 2006-2018 Region: 53 LMRCs (Rural and Urban regions) Sample: (n=91,070) Married women aged 35 years and above Recruitment: Household, DHS stratified dual-stage sampling</p>	<p>DHS Contraceptive and Household (Healthcare, Freedom of Movement, Financial) Decision-Making (Combined Index)</p> <p>Survey Questions and Response Options: <u>Household:</u> 1) Who usually makes decisions about healthcare for yourself? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Other</i> 2) Who usually makes decisions about making major household purchases? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Someone else, Other</i> 3) Who usually makes decisions about visits to your family or relatives? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Someone else, Other</i></p> <p><u>Contraceptive:</u> Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together? - <i>Mainly respondent, Mainly husband/partner, Joint decision, Other</i></p> <p>Construction: Household - Any Voice of Woman in Decision / No Voice Contraceptive - At Least Any Decision (Wife) / No Decision [Reference]</p>	<p>Variable: Ability to Achieve Fertility Desire</p> <p>Survey Questions and Response Options: Survey assessed couples' desired number of children.</p> <p>Construction: Continuous</p>	<p>Outcome: Ability to Achieve Fertility Desire</p> <p>Association with DM: <u>Household:</u> <i>Any Voice of Woman</i> - [AOR=1.12, 95% CI (1.08, 1.16), p<0.001] <u>Contraceptive:</u> <i>At Least Any Decision (Wife)</i> - [AOR=1.16, 95% CI (1.10, 1.23), p<0.001]</p> <p>Key Finding: Women having a voice in household decisions and contraceptive decisions were more likely to be able to achieve their fertility desires.</p>
<p>Chanthakoumane K, Maguet C, Essink D: Married couples' dynamics, gender attitudes and contraception use in Savannakhet Province, Lao PDR. <i>Glob Health Action</i> 2020, 13(sup2):177713.</p>	<p>Year of Data Collection: 2019 Region: Lao PDR (10 villages in Savannakhet province, including both Rural and Urban regions) Sample: (n=400) Couples aged 15-49 years Recruitment: Household, Random selection in districts with unmet contraceptive needs</p>	<p>Contraceptive, Fertility, and Household (Financial and Freedom of Movement) Decision-Making and Communication on Contraceptives and Fertility</p> <p>Survey Questions and Response Options: Not specified. Decision-Making on: 1) Financial issues - <i>Woman involved/Not involved</i> 2) Women's freedom to go outside - <i>Low/High/No Freedom</i> 3) The number of children to have - <i>Woman involved/Not involved</i> 4) Contraceptive use - <i>Woman only/Couple or other</i></p> <p>Spousal Communication on: 1) Desired number of children - <i>Often discussed/Not very often discussed/ Never discussed</i> 2) Birth control - <i>Often discussed/Not very often discussed/ Never discussed</i></p> <p>Construction: Same as response categories.</p>	<p>Variable: Contraceptive Use</p> <p>Survey Questions and Response Options: Contraceptive use within couple - <i>Yes/No</i></p> <p>Construction: Yes / No</p>	<p>Outcome: Contraceptive Use</p> <p>Association with DM: <i>Woman not involved in financial decisions</i> - [OR=0.41; 95% CI (0.17, 0.98), p<0.05] <i>Never discussed birth control</i> - [OR=0.21; 95% CI (0.11, 0.40), P=0.000]</p> <p>Key Finding: Lack of women's involvement in financial decision-making and lack of contraceptive communication both resulted in lower odds of contraceptive use.</p>

<p>Wegs C, Creanga AA, Galavotti C, Wamalwa E: Community Dialogue to Shift Social Norms and Enable Family Planning: An Evaluation of the Family Planning Results Initiative in Kenya. PLoS One 2016, 11(4):e0153907.</p>	<p>Year of Data Collection: 2012 Region: Siaya County, Nyanza Province, Kenya Sample: (n=617 women, 317 men) Married men, aged 20-49 years, and women, aged 18-45 years Recruitment: Households, Two-stage cluster sampling approach</p>	<p>Sex, Contraceptive, and Household (Healthcare, Freedom of Movement, Financial) Decision-Making (Combined Index)</p> <p>Survey Questions and Response Options: Who usually makes decisions about 1) Your health care, 2) Large household purchases, 3) Household purchases for daily needs, 4) When you will visit family/relatives/friends, 5) When the whole household will visit family/relatives/friends, 6) How to use the money you bring into the household, 7) How to use the money your spouse brings into the household, 8) When to sell a large asset (e.g. cow), 9) When to sell a small asset (e.g. chicken), 10) Whether you can work to earn money, 11) When you and your husband have sex, and 12) Whether you and your husband use family planning? - <i>Wife alone, Wife and husband together, Husband alone, Mother- or Father-in-law, Someone else, and Mother or father</i></p> <p>Construction: Scale created such that - <i>Wife alone and Wife and husband together</i> were assigned a score of 2. All other responses assigned a score of 1. Higher scale score indicated higher female-perceived decision-making power.</p>	<p>Variable 1: Current Contraceptive Use</p> <p>Variable 2: Current Modern Contraceptive Use</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: Current Use / Not Currently Using</p>	<p>Outcome 1: Current Contraceptive Use</p> <p>Association with DM: No significant association.</p> <p>Outcome 2: Current LARC Use</p> <p>Association with DM: No significant association.</p> <p>Key Finding: Female-perceived decision-making power was not significantly associated with contraceptive use.</p>
<p>Dingeta T, Oljira L, Worku A, Berhane Y: Unmet Need for Contraception Among Young Married Women in Eastern Ethiopia. Open Access J Contracept 2019, 10:89-101.</p>	<p>Year of Data Collection: Not Specified. Region: Kersa District, Eastern Ethiopia (21 Rural and 3 Urban kebeles) Sample: (n=2,933) Young married women <25 years of age Recruitment: Women identified and contacted via the Kersa Health and Demographic Surveillance System Database</p>	<p>Sex, Contraceptive, and Household (Healthcare, Freedom of Movement, Financial) Decision-Making (Combined Index)</p> <p>Survey Questions and Response Options: Who usually makes decisions about 1) How to use money in the household, 2) Large household purchases, 3) Household purchases for daily needs, 4) When to sell a large asset (e.g.cow), 5) When to sell mall asset (e.g. chicken), 6) When to visit family/relatives, 7) Self healthcare, 8) Children's healthcare, 9) When to have sex, and 10) When to use FP? - <i>Wife alone, Wife and husband together, Husband alone, Respondent and other person, and Someone else</i></p> <p>Construction: Scale (Women's Household Decision-Making Autonomy Score) created such that - <i>Wife alone</i> or <i>Wife and husband together</i> were assigned a score of 2. All other responses assigned a score of 1.</p>	<p>Variable: Unmet Need for Modern Contraception</p> <p>Survey Questions and Response Options: Not Specified.</p> <p>Construction: Unmet Need for Spacing / Unmet Need for Limiting Birth Overall prevalence of unmet need for modern contraception was comprised of the sum of unmet needs for spacing and limiting.</p>	<p>Outcome: Unmet Need for Modern Contraception</p> <p>Association with DM: <i>Women's Household Decision-Making Autonomy Score (One point increase)</i> - [APR= 0. 76, 95% CI (0.62, 0.95)]</p> <p>Key Finding: Women with greater perceived involvement in decision-making (household, contraceptive, sex) were less likely to have unmet need for modern contraception.</p>

<p>Garrison-Desany HM, Wilson E, Munos M, Sawadogo-Lewis T, Maïga A, Ako O, Mkuwa S, Hobbs AJ, Morgan R: The role of gender power relations on women's health outcomes: evidence from a maternal health coverage survey in Simiyu region, Tanzania. <i>BMC Public Health</i> 2021, 21(1):909.</p>	<p>Year of Data Collection: 2012 Region: Tanzania (Urban, Rural, and Mixed regions) Sample: (n=2,528) Women and (n=1000) men aged 15-49 years Recruitment: Households, Multi-stage cluster sampling, stratified into urban, rural, or mixed geographical regions</p>	<p>Fertility and Household (Healthcare, Freedom of Movement, Financial) Decision-Making</p> <p>[Gender power domains: (1) Autonomy and Decision-Making, (2) Labor Sharing and Partner Involvement, (3) Access to Resources, and (4) Norms and Beliefs.]</p> <p>Survey Questions and Response Options: 1) Women are able to leave the house, 2) Women can make own decisions about health, 3) Women can make major purchase decisions, 4) Women can make decisions to visit friends/family, 5) Women/both can make daily purchases, 6) Women/both sell poultry, 7) Women/both sell livestock, 8) Women/both decide how many children to have, 9) Women decide how to use their own money -<i>Yes/No</i></p> <p>Construction: Woman makes decision / Other</p>	<p>Variable 1: Currently Using Condoms with Partner Variable 2: Currently Using Contraception with Partner</p> <p>Survey Questions and Response Options: 1) Condom use during a woman's last sexual encounter -<i>Yes/No</i> 2) Whether woman and her partner were currently using contraception -<i>Yes/No</i></p> <p>Construction: Same as response options.</p>	<p>Outcome 1: Currently Using Condoms with Partner</p> <p>Association with DM: <i>Woman makes own decisions about health</i> - [OR=1.42; 95% CI (1.004, 2.00), P=0.048] <i>Woman makes major purchase decisions</i> - [OR=1.31; 95% CI (0.93, 1.83), P=0.12] <i>Woman makes daily purchase decisions</i> - [OR=1.43; 95% CI (1.04, 2.04), P=0.030]</p> <p>Outcome 2: Currently Using Contraception with Partner</p> <p>Association with DM: <i>Woman makes own decisions about health</i> - [OR=1.41; 95% CI (1.08, 1.84), P=0.013] <i>Woman makes major purchase decisions</i> - [OR=1.50; 95% CI (1.1, 1.95), P=0.0022] <i>Both decide how many children</i> - [OR=1.52; 95% CI (1.12, 2.05), P=0.007] <i>Woman makes daily purchase decisions</i> - [OR=1.26; 95% CI (0.97, 1.62), P=0.080]</p> <p>Key Finding: Women involved in independent household decisions had a greater likelihood of condom and other contraceptive use.</p>
<p>Alabi O, Odimegwu CO, De-Wet N, Akinyemi JO: Does Female Autonomy Affect Contraceptive Use among Women in Northern Nigeria? <i>Afr J Reprod Health</i> 2019, 23(2):92-100.</p>	<p>Year of Data Collection: 2013 Region: The three geopolitical zones of Northern Nigeria (Rural and Urban regions) Sample: (n=18,534) Married women aged 15-49 years Recruitment: Household, DHS stratified dual-stage sampling</p>	<p>DHS Contraceptive and Household (Healthcare, Freedom of Movement, Financial) Decision-Making (Combined Index)</p> <p>Survey Questions and Response Options: 1) <u>Health Autonomy</u> - a) Contraceptive decision-making: Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together? - <i>Mainly respondent, Mainly husband/partner, Joint decision, Other</i>; b) Healthcare: Who usually makes decisions about healthcare for yourself (Respondent's healthcare)? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Other</i> 2) <u>Movement Autonomy</u> - Who usually makes decisions about visits to your family or relatives? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Someone else, Other</i> 3) <u>Economic Autonomy</u> - Who usually makes decisions about making large household purchases? - <i>Respondent, Husband/Partner, Respondent and Husband/partner jointly, Someone else, Other</i></p> <p>Construction: 1) Binary - Not Autonomous (0) / Autonomous (1) Decision-Making 2) Combined Female Autonomy Measure: Females reporting autonomous decision-making in all categories coded as (1) and those without autonomy were coded as (0).</p>	<p>Variable: Current Modern Contraceptive Use</p> <p>Survey Questions and Response Options: (Not specified.) 1) Are you currently doing something or using any method to delay or avoid getting pregnant? - <i>Yes/No</i> 2) (If using current method of contraception) Which method are you using? - <i>Female sterilization, Male sterilization, IUDs, Injectables, Implants, Pill, Condom, Female Condom, Diaphragm, Foam/Jelly, LAM, Rhythm, Withdrawal, Other</i></p> <p>Construction: Binary - Not currently using modern contraceptive method (0) / Currently using modern contraceptive method (1)</p>	<p>Outcome: Current Modern Contraceptive Use</p> <p>Association with DM: <u>Health Autonomy:</u> <i>Autonomous</i> - [$\chi^2 = 335.52, p = 0.000$] <u>Movement Autonomy:</u> <i>Autonomous</i> - [$\chi^2 = 253.12 p = 0.000$] <u>Economic Autonomy:</u> <i>Autonomous</i> - [$\chi^2 = 413.50 p = 0.000$]</p> <p><u>Combined Female Autonomy:</u> <i>Autonomous</i> - [Exp(B) = 4.99, 95% CI (4.14, 6.01), p < 0.001]</p> <p>Key Finding: Autonomous females had an increased likelihood of using a modern contraceptive method.</p>

<p>Hameed W, Azmat SK, Ali M, Sheikh MI, Abbas G, Temmerman M, Avan BI: Women's empowerment and contraceptive use: the role of independent versus couples' decision-making, from a lower middle income country perspective. <i>PLoS One</i> 2014, 9(8):e104633.</p>	<p>Year of Data Collection: 2012 Region: Pakistan (Chakwal, Mianwali, and Bhakkar districts of Pubjab; 24 Rural and 17 Urban areas) Sample: (n=2,133) Married women aged 15-49 years, youngest eligible woman in household; (n=41 primary healthcare facilities) Recruitment: Households within 4-7 km of selected primary healthcare facilities</p>	<p>Fertility and Household (Financial, Freedom of Movement, Healthcare, Child Healthcare and Education) Decision-Making (Combined Index)</p> <p>Survey Questions and Response Options: Who makes the following decisions? 1) Economic Decision-Making: (1) Buying or selling of property, (2) Small household expenditures, (3) Major household expenditures, (4) Expenditures on woman's clothes, cosmetics, jewelry etc., (5) Purchase of medicines, and (6) Children's clothes 2) Household Decision-Making: (1) Where to go outside for medical care in the event of the woman's illness, (2) Where to take the child in the event of illness, (3) Children's education, and (4) When to plan pregnancy 3) Physical Mobility: (1) Visiting relatives, (2) Woman's employment outside the home, and (3) Woman going out of the house alone for medical help</p> <p>Construction: <u>Independent decision-making</u> - (+1) Women's independent decision / (0) Other <u>Couples' decision-making</u> - (+1) Joint / (0) Other</p> <p>Composite score summed, giving additional weight to Household Decision-Making and Physical Mobility (Scored 0-18).</p>	<p>Variable: Current Contraceptive Use</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: 0 = Non-users 1 = Female-only methods (Pill, Injection, IUD, Implant, and Female sterilization) 2 = Couple methods (Condom, Withdrawal, Periodic abstinence)</p>	<p>Outcome 1a: Current Contraceptive Use - Female-controlled methods</p> <p>Association with DM: <i>Joint (Couples' decision-making)</i> - [OR=1.03; 95% CI (1.00, 1.05), p<0.05]</p> <p>Outcome 1b: Current Contraceptive Use - Couple methods</p> <p>Association with DM: <i>Joint (Couples' decision-making)</i> - [OR=1.06; 95% CI (1.03, 1.09), p<0.0001]</p> <p>Independent/Female-only decision-making was not associated with uptake of any contraceptive method.</p> <p>Key Finding: Joint decision-making in couples had a greater association with contraceptive uptake than women who made decisions alone.</p>
---	--	---	--	--

Table 3. Measures of Female Agency in Contraceptive Decision-Making

<p>Hinson L, Edmeades J, Murithi L, Puri M: Developing and testing measures of reproductive decision-making agency in Nepal. <i>SSM Popul Health</i> 2019, 9:100473.</p>	<p>Year of Data Collection: 2017 Region: Nepal (Morang and Kaski, rural districts with urban centers) Sample: (n=1000) Married women aged 18-45 years, currently living with partners Recruitment: Households, Selection of desired districts and socioeconomic characteristics, division into segments from which random participant selection took place</p>	<p>Reproductive Decision-Making Agency (Combined Index)</p> <p>Survey Questions and Response Options: For the 3 reproductive health domains a) When to have children, b) Whether to use family planning, and c) Which family planning method to use: 1) Did you share your opinion? - <i>Shared, Didn't share, Had same opinion as husband (or didn't care)</i> 2) Did you think your opinion was valued? - <i>Not valued or unsure/ Valued</i> 3) Who had the final say? - <i>Husband or other, Participant, Joint</i> 4) Did you want more influence in the decision? - <i>No (satisfied or wanted less), Yes (wanted more)</i></p> <p>Construction: (1) High Agency: Shared opinion, felt it was valued, was the joint or final decision-maker, and was satisfied with the final decision, (2) Low Agency: Did not share opinion, was not involved in final decision, and wanted more influence, or (3) Medium Agency:</p>	<p>Variable 1: Met Contraceptive Need Variable 2: Feelings of Reproductive Control</p> <p>Survey Questions and Response Options: Reproductive Control: 1) How hopeful are you about your ability to have control over how many children you have and when? 2) How hopeful are you about your ability to control fertility using a method of contraception if and when you want to? 3) Have you felt able to achieve your desires about when to have children up to this point in your life, including when to stop having children?</p> <p>Construction: Not specified.</p>	<p>Outcome 1: Met Contraceptive Need</p> <p>Association with DM: <i>High Agency</i> - Trend toward met contraceptive needs (no statistical significance).</p> <p>Outcome 2: Feelings of Reproductive Control</p> <p>Association with DM: <i>High Agency</i> - 2-fold higher odds of being hopeful one could achieve her fertility desires [AOR=2.88; 95% CI: (1.45, 5.74); P = 0.002], 5-fold higher odds of perceiving that their fertility desires had already been achieved [AOR=4.98; 95% CI: (2.52, 9.83); P <0.001]</p> <p>Key Finding: High agency was associated with feelings of reproductive control, and had a positive effect on met contraceptive needs.</p>
--	--	--	---	---

		Those not falling into the high or low agency categories.		
Loll D, Fleming PJ, Manu A, Morhe E, Stephenson R, King EJ, Hall KS: Reproductive Autonomy and Modern Contraceptive Use at Last Sex Among Young Women in Ghana. <i>Int Perspect Sex Reprod Health</i> 2019, 45 :1-12.	Year of Data Collection: 2015 Region: Ghana (Urban) Sample: (n=325) Women aged 15-24 years Recruitment: Participants recruited via clinics and schools in Kumasi and Accra, Ghana.	Contraceptive and Fertility Decision-Making (Combined Index) Survey Questions and Response Options: 1) You, not your partner, has the most say about whether you would use a method to prevent pregnancy, 2) You, not your partner, has the most say about when you have a baby in your life, 3) If you became pregnant but it was unplanned, you, not your partner, would have the most say about whether you would raise the child, seek adoptive parents, or have an abortion - <i>Strongly disagree, Disagree, Agree, Strongly Agree</i> Construction: 4 point scale for each response to the three decision-making items (For a composite Reproductive Autonomy Decision-Making Score ranging from 3-12), where strongly disagree is assigned a score of 1, and strongly agree is assigned a score of 4.	Variable: Modern Contraceptive Use at Last Sex Survey Questions and Response Options: (If ever used modern contraceptives) Did you use the pill, IUD, injectables, implants, condoms, emergency contraception, or sterilization at last sex? - <i>Yes/No/Don't Know</i> Construction: Yes / No or Don't Know	Outcome: Modern Contraceptive Use at Last Sex Association with DM: <i>Reproductive Autonomy Decision-Making Score</i> - [OR=1.12, 95% CI (1.01,1.24), p<0.05] Key Finding: Women with greater autonomy in contraceptive and fertility decision-making were more likely to have used contraceptives at last sex.
Tadele A, Abebaw D, Ali R: Predictors of unmet need for family planning among all women of reproductive age in Ethiopia. <i>Contracept Reprod Med</i> 2019, 4 :6.	Year of Data Collection: 2016 Region: Ethiopia (Urban and Rural regions) Sample: (n=7,494) Women aged 15-49 years Recruitment: Household, PMA2020 - Two-stage cluster sampling design	Contraceptive Decision-Maker Survey Questions and Response Options: Who had the final say in deciding upon the family planning method? - <i>You alone, Provider, Partner, You and Provider, You and Partner</i> Construction: Method Chosen by Self / Method Chosen Jointly with Partner or Provider	Variable: Unmet Need for Family Planning Survey Questions and Response Options: Not specified. Construction: Includes unmet need for limiting and spacing.	Outcome: Unmet Need for Family Planning Association with DM: <i>You (Female) and Provider</i> - [AOR=0.04, 95% CI (0.01, 0.26), p<0.001] No significant association with joint partner decision-making or single-entity decision-making. Key Finding: Women making family planning decisions jointly with their healthcare provider had a lower odds of having unmet need for family planning.

<p>Shakya HB, Dasgupta A, Ghule M, Battala M, Saggurti N, Donta B, Nair S, Silverman J, Raj A: Spousal discordance on reports of contraceptive communication, contraceptive use, and ideal family size in rural India: a cross-sectional study. <i>BMC Womens Health</i> 2018, 18(1):147.</p>	<p>Year of Data Collection: 2012-2013 Region: India (Thane District of Maharashtra) Sample: (n=867) Married, non-pregnant couples aged 18-30 years Recruitment: Households, Sample taken from CHARM (Counseling Husbands to Achieve Reproductive Health and Marital Equity Study) baseline data</p>	<p>Perceived Equity in Fertility Decision-Making and Household (Financial and Freedom of Movement) Decision-Making</p> <p>Survey Questions and Response Options: 1) Who makes decisions on the following: a) Household needs, b) Major household purchases, and c) The wife's visits to relatives? - <i>Husband, Wife, Husband/Wife together, Other</i> 2) Did the wife feel that she had an equal right as her spouse to choose how many children she would have? - <i>Yes/No</i></p> <p>Construction: 1) Female Autonomy scale (in Decision-Making) Scored 0-3; Wife or joint (1) / Otherwise (0) 2) Equality in fertility decision-making / Not equal</p>	<p>Variable 1: Contraceptive Communication Variable 2: Contraceptive Use</p> <p>Survey Questions and Response Options: 1) Was there any communication with their spouse regarding contraceptives in the past three months? - <i>Yes/No</i> 2) Currently using contraceptives with spouse - <i>Yes/No</i></p> <p>Construction: Yes / No</p>	<p>Outcome 1: Contraceptive Communication (concordant report)</p> <p>Association with DM: <i>Female Autonomy (increase by 1 point)</i> - [AOR = 1.58; 95% CI (1.25, 2.00), p<0.001]</p> <p>Outcome 2: Contraceptive Use (concordant report)</p> <p>Association with DM: <i>Equality in fertility decision-making</i> - [AOR = 2.14; 95% CI (1.33, 3.44), p<0.001]</p> <p>Key Finding: Equality in fertility decision-making was associated with increased contraceptive use. Greater female household autonomy was associated with spousal communication on contraceptives.</p>
<p>Tilahun T, Coene G, Temmerman M, Degomme O: Spousal discordance on fertility preference and its effect on contraceptive practice among married couples in Jimma zone, Ethiopia. <i>Reprod Health</i> 2014, 11:27.</p>	<p>Year of Data Collection: 2010 Region: Jimma Zone, Ethiopia (Rural) Sample: (n=811) Married couples, with women aged 15-49 years Recruitment: Households, Multistage sampling by districts and localities (kebeles)</p>	<p>Contraceptive Decision-Making, Communication, and Self-Efficacy</p> <p>Survey Questions and Response Options: 1) Who makes the final decision on using family planning methods? 2) Was family planning previously discussed within the couple? - <i>Yes/No (reported separately by both spouses)</i> 3) Can the wife use a family planning method without the husband's consent? - <i>Yes/No (reported separately by both spouses)</i></p> <p>Construction: 1) Husband is responsible for family planning decisions / Other 2) and 3) Yes / No</p>	<p>Variable: Contraceptive Use</p> <p>Survey Questions and Response Options: Not specified.</p> <p>Construction: Use / Non-Use</p>	<p>Outcome: Contraceptive Use</p> <p>Association with DM: <i>Family planning was previously discussed (reported by wife)</i>- [OR= 5.37, 95% CI (3.56,8.21), p<0.001] <i>Family planning was previously discussed (reported by husband)</i>- [OR= 2.39, 95% CI (1.5,3.82), p<0.001] Husband is responsible for family planning decisions - Not significantly associated. Wife can use family planning method without husband's consent - Not significantly associated.</p> <p>Key Finding: Discussion of family planning between couples, affirmatively reported by either spouse, was associated with an increased odds of contraceptive use. Meanwhile, wives' ability to use family planning without husbands' consent and husband-directed family planning decision-making was not associated with contraceptive use.</p>

<p>Nazarbегian M, Averbach S, Johns NE, Ghule M, Silverman J, Lundgren R, Battala M, Begum S, Raj A: Associations between contraceptive decision-making and marital communication and use in rural Maharashtra, India. Unpublished manuscript, 2021.</p>	<p>Year of Data Collection: 2020 Region: Maharashtra, India (Rural) Sample: (n=1088) Married women Recruitment: Households, Sample taken from CHARM2 (Counseling Husbands to Achieve Reproductive Health and Marital Equity 2 Study)</p>	<p>Contraceptive Final Decision-Maker</p> <p>Survey Questions and Response Options: When there is disagreement about using contraception, who usually makes the final decision? - <i>Respondent, Husband, Respondent's mother, Mother-in-law, Other head of household, Respondent's siblings, Husband's siblings</i></p> <p>Construction: Female Respondent / Other</p>	<p>Variable 1: Contraceptive Use in Past 3 Months Variable 2: Contraceptive Use by Type in Past 3 months</p> <p>Survey Questions and Response Options: 1) Did you do something or use any method to delay or avoid getting pregnant in the past 3 months? – <i>Yes/No</i> 2) What were all the methods that you have used in the past 3 months to delay or avoid pregnancy? – <i>Pills, IUD, Injectable, Male Condom, Female Condom, Rhythm Method, Withdrawal Method, Emergency Contraceptive Pill, Female Sterilization, Male Sterilization, Lactational Amenorrhea Method (LAM)</i></p> <p>Construction: Same as response options.</p>	<p>Outcome 1: Contraceptive Use in Past 3 Months Association with DM: <i>Female Respondent (has final say)</i> – No significant association.</p> <p>Outcome 2: Contraceptive Use by Type in Past 3 months Association with DM: <i>Female Respondent (has final say)</i> – Pill use: [aRRR=2.00, 95% CI (1.14-3.52), p<0.05]</p> <p>Key Finding: Women believing they would have the final say in contraceptive decisions if there is a disagreement with their spouse on the matter did not have a significant association with increased contraceptive uptake in general but did have an association with increased pill uptake.</p>
---	---	---	--	---