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Associations between intimate partner violence and married women's condom and other contraceptive use in rural India

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Abstract

Background: The existing literature on the intersection between women's reports of spousal intimate partner violence (IPV) and contraceptive use in South Asia is conflicted; some studies from the region indicate that IPV is associated with increased contraceptive use, while others show the opposite relationship. Associations appear to vary based on method of contraception use, and form of violence (physical or sexual), and few examined the relationship between IPV and various methods of modern spacing contraceptive (MSC) use. This study examines associations between IPV and MSC use among a sample of married, not-currently-pregnant couples in rural Maharashtra, India (N=861).

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Conflict of interest

The authors involved in this study have no conflicts of interest to declare.

Methods: Multinomial logistic regression models assessed wives' physical and sexual IPV victimization (past 6-month) in relation to wives' past 3-month MSC use [categorized as condom use, other MSCs (oral pills, IUD), and no MSCs].

Results: In terms of violence, 9% (n=78) and 4% (n=34) of wives reported recent physical and sexual IPV victimization, respectively. The majority of wives (72%; n=621) did not use any MSC method in the past 3 months; 14% (n=119) reported recent condom use, and the same proportion reported other MSC use. Recent physical IPV was associated with increased likelihood of recent condom use (AOR: 2.46, 95% CI: 1.20, 5.04), and recent sexual IPV was associated with increased likelihood of recent use of other MSC (AOR: 3.27, 95% CI: 1.24, 8.56).

Conclusions: These findings reinforce the need for integration of counseling around IPV prevention and intervention programming into existing family planning services targeting married couples in rural Maharashtra, India.

Keywords

Contraception; condom use; oral pills; intimate partner violence; India

Introduction

Intimate partner violence (IPV) is a pervasive global health concern.[1] Women experiencing with IPV face a myriad of health consequences that include negative sexual and reproductive health outcomes such as unintended pregnancies [2–5] and, relatedly, challenges to contraceptive use.[4, 6–9] Married women in South Asia face unacceptably high rates of IPV; 37% of wives in India report physical or sexual spousal violence in their lifetime.[6] Studies from India document efforts by abusive husbands to interfere with wives' abilities to access family planning services,[8] thus putting wives at greater risk for having unintended pregnancies.[3–5] Despite the fact that knowledge of contraceptive methods is high among couples in India,[6] and availability and access to contraception are not perceived as barriers to family planning,[10–11] only half of women report modern contraceptive use.[6, 10] India accounts for the greatest proportion of women in the world with an unmet need for family planning (women who are fecund, and sexually active, but are not using contraception, and do not want to get pregnant),[12] with 13 percent of Indian wives reporting unmet need.[10,12] Early family planning efforts by the Indian government, starting in 1951, encouraged couples to adopt permanent methods of contraception (first male and then female sterilization).[13–14] While recent efforts have prioritized spacing contraception (i.e. non-permanent methods),[14–15] female sterilization is the most common method of modern contraception used by married women (37% of married women report female sterilization), [10] and is often the first and only method of contraception used by Indian wives.[14,16] Once the desired number and sex ratio of children are achieved, wives often undergo sterilization. [14,16,17] As a result, few wives use modern spacing methods such as condoms, pills, and IUD, which make up 14, 11 and 6 percent of use, respectively.[6,10] Low use of modern spacing contraceptive methods contribute to women's risk for short birth intervals (time between two births), which is associated with negative maternal and child health outcomes. IPV has been associated with short birth intervals, as well.[1]

Given the low levels of modern spacing contraceptive use in India, it is important to understand barriers to specific methods of contraceptive use. While numerous studies indicate that IPV is associated with lower likelihood of condom use among women in India,[20–23] few studies have tested associations between IPV and other methods of modern spacing contraception, which may not require male participation (oral pills, IUD). Findings from qualitative data in India show that wives report threats of physical violence from husbands as drivers of contraceptive non-use,[24] and that wives dealing with abusive husbands may depend on contraceptive methods that are not dependent on male-cooperation, such as oral pills, or IUD.[9] More recently, researchers have begun to further dissect the relationship of IPV to contraception use, with special consideration to types of violence perpetration (i.e. physical, sexual), and methods of contraception (i.e. condoms, oral pills). Examining national data in rural India from 2002–2003, Stephenson and colleagues[4,7,8] found that women reporting physical IPV alone were less likely to adopt modern contraceptives (inclusive of permanent and temporary methods). Similar results were seen when women reported experiences of physical and sexual IPV.[6] However, while temporary methods were included in these analyses, the majority of contraceptive users in these samples were comprised of women who underwent female sterilization.

While these findings indicate that IPV is associated with lower contraceptive use, a growing body of literature of conflicting findings is emerging as researchers examine associations between IPV and various forms of contraceptive methods. Using pooled national data from 2006–2007 from Bangladesh, Nepal and India, Raj and colleagues[25–26] found that sexual IPV was positively associated with wives' reports of modern spacing contraceptive use, and negatively associated with sterilization.[25] Further, the authors found (descriptively) that wives contending with sexual IPV were more likely to use oral pills, and less likely to report condom use, though these associations were not tested. [25]

These conflicting findings indicate a need for clarification of these complex relationships. While the existing literature provides understanding of the relationship between IPV and permanent methods of modern contraception use in India, it is imperative that the relationship between IPV and modern spacing contraceptive use be explored given the need to prioritize spacing contraception use in India. Additionally, the existing literature presents conflicting findings based on the form of violence reported (physical vs. sexual). Further, understanding if women are able to control reproductive decision-making via use of contraceptive methods not involving male partners (i.e. oral pills, IUD) is especially important for women contending with IPV. This paper seeks to fill these gaps in the literature by assessing the relationship between IPV (physical only, sexual only), and modern spacing contraceptive use (condom, other modern spacing, none) among a sample of non-sterilized married couples living in rural Maharashtra, India. These analyses present the first paper to examine quantitatively the relationship between various forms of IPV, and modern spacing contraception broken down by form of spacing contraceptive in rural Maharashtra, where use of modern spacing methods is substantially lower than in urban areas of the state.[11]

Methods

Study Population

This study involved analysis of baseline cross-sectional data from participants in a family planning promotion program (CHARM) in Maharashtra, India evaluated through a two-armed cluster randomized controlled design study. Note: details on collection of baseline data are described in full in the study protocol paper.[27] Present analyses used data from the baseline assessment of non-sterilized couples. Pregnant women (n=214) were excluded from analyses as contraception use is not applicable in the setting of pregnancy. Additionally, women using multiple methods of contraception (n=6) were excluded from analyses to allow for understanding of women's main method of modern spacing contraception, and to allow for greater generalizability since the majority of wives in India use only one method of contraception.[10] Therefore the final sample for analysis included women who were not pregnant at baseline, and who were only using one method of contraception [n=861 (n=214 pregnant women, and n=6 using multiple methods were excluded)].

Under the direction of scientific leadership in India, geographic clusters were identified for study implementation. Mapping was conducted by Masters-level research staff to identify areas that had comparable population density and geographic size. Mapping procedures also included indicating public and private health sector facilities, and community resources and business areas, to ensure clusters were somewhat comparable on these features, as well. This approach resulted in identification of 62 clusters within the study area of focus. Two clusters were randomly selected for pilot testing, and another 50 were randomly selected for inclusion in the larger evaluation study. Using computer-generated random numbers, clusters selected were randomized by our research team to either intervention or control conditions.

Between March and December 2012, trained research staff approached households to identify young married couples between 18 and 30 years of age within the selected clusters. If the couple indicated interest in participating, research staff conducted the informed consent process with the couple in a private space in the house. Eligibility criteria included husband and wife being 18–30 years of age, fluency in Marathi, residing together in the cluster area for the past three months, plans to stay in the cluster for another two years, and no sterilization for either the husband or his wife.

After couples completed informed consent and eligibility screening procedures, sex-matched research staff administered a 60 minute paper survey with husbands and wives. Survey questions were read aloud to husbands and wives separately and in private spaces in the participants' homes. Survey items covered a broad range of topics including demographics, contraception knowledge and use, substance use, sexual history, and gender equity attitudes. No monetary incentives were provided, and all study procedures were approved by the Institutional Review Boards at the University of California San Diego and the Indian Council of Medical Research.

Measures

Demographic characteristics—included age and educational attainment for husbands and wives; the husband's caste, family's monthly income, and the wife's working status.

Age was measured continuously and was kept as a continuous variable for analysis. Education was measured by a single item asking the highest standard (year) of education completed (continuous measure). Note: age and education data were based on husbands' and wives' reports of their own information. Caste and family income were based on husbands' reports.

Caste was measured based on four separate categories of "scheduled caste, scheduled tribe, other backward class, none." Individuals belonging to scheduled castes, and scheduled tribes represent the most marginalized groups, and were therefore included in one category (with those belonging to "other backward class, and none" combined into a second category for the caste variable). Caste variables were thus created with the following categories: "scheduled caste/tribe," and "backward class/none." Family monthly income was based on husbands' responses to the question "what is your household's average monthly income?" (continuous measure; Indian currency of rupees). Wives' working status was assessed based on asking if they were engaged in any income-generating activities (dichotomous yes/no).

Marital characteristics—were assessed by wives' reports of marital length, and number of births. Marital length was a continuous variable (measured in years) calculated by taking the difference between the participant's current age, and age at marriage (based on the question "how old were you when you first got married?"). Note: This variable was used descriptively in analyses (and not as a covariate). Number of births includes women's responses asking them how many living sons and daughters they delivered, the number of sons and daughters they had who had been born alive and later died, and the number of stillbirths women reported. These items were combined to create a continuous measure reflecting total number of births reported by wives.

Husbands' risky behaviors—included in the analyses were husbands' elevated alcohol use, and men's gender equity ideologies. Husbands' drinking in the past month was assessed by a single measure asking husbands how many days within the past 30 days they had 4 or more drinks on one occasion. Husbands reporting 1 or more days of drinking with 4 or more drinks on one occasion in the past month were categorized as "potentially being at elevated risk of alcohol-related problems" or "elevated alcohol use" (individuals who reported zero days were categorized as not having any days in the past month with "elevated alcohol use" or "no"). The categorization of this variable is a more stringent definition of the National Institute on Alcohol Abuse and Alcoholism's definition of "heavy drinking" (5 or more drinks on the same occasion).[28] The majority of the present sample identified as "tribal" populations, where many men primarily drink a home-brewed heavily concentrated liquor. As a result, using a more stringent measure to assess elevated drinking is most appropriate for this cultural setting.

Men's gender equity ideologies were measured using the Gender-Equitable Men (GEM) Scale,[29] which has been adapted for use in rural India.[30] GEM includes 24 items measuring male gender norms related to sexual and reproductive health, sexual relations, domestic violence, domestic responsibilities, and homophobia. Each item was scored with the least equitable response scoring 1, with the most equitable responses scoring 3 (and moderately equitable responses scoring 2), thus resulting in a possible range of 24–72 (least equitable to

most equitable). The scale was kept as a continuous measure, and had an acceptable level of internal consistency (Cronbach's alpha = 0.70) to be used for use of an attitude measure.[31]

The outcome of past 3 month contraception use was based on a single question asking *wives* what method she and her husband used to avoid getting pregnant in the past 3 months. Options included oral pills, IUD/loop, injectables, male condom, rhythm method, withdrawal method, and emergency contraception. Response options were separated into three categories: Male condom, other modern spacing contraceptives (hormonal oral pills, IUD, injectables), and no modern spacing contraceptives (rhythm method, withdrawal method, and no method).

The two independent variables were past 6-month physical intimate partner violence (IPV) victimization and sexual IPV in the same timeframe (asked only of wives). Both dichotomous variables were based on an 8-item measure asking women how frequently they experienced various forms of violence. All violence indicators were based on validated measures from NFHS-3.[10] The questions had response categories of "often," "sometimes," "not at all" (meaning not in the past 6 months), and "never in our relationship" (meaning never experiencing violence in the relationship). Physical IPV was measured by asking women whether the following forms of violence had been perpetrated by husbands in the past 6 months: 1) slapping, 2) arm twisting and pulling hair, 3) pushing, shaking, throwing something at her, 4) kicking, dragging, beating up, 5) choking, 6) trying to burn, threaten to attack with knife, gun or weapon. Items on sexual IPV measured 1) forced sexual intercourse, and 2) forced to perform sexual acts against her will. Women's endorsement of "often" or "sometimes" to any of the 6 physical IPV items were categorized as "yes" for the physical IPV variable (responses of "not at all" or "never in our relationship" were categorized as "no"). The same categories were used for responses for the sexual IPV questions. Note: physical IPV did *not* include women who *also* reported sexual IPV victimization. However, the variable constructed to understand sexual IPV did include women also reporting physical IPV victimization.

Statistical Analysis

Descriptive analyses were conducted on all demographic indicators, IPV variables, and contraceptive use indicators. Crude and adjusted multinomial logistic regression models assessed IPV in relation to modern spacing contraceptive use (condom use, other modern spacing contraception, no method [referent]). Separate regression models were conducted with each IPV variable. Adjusted analyses controlled for cluster (as a fixed effect), men and women's age and education, husband's reports of caste, family income, elevated alcohol use, and gender equity ideologies, and women's reports of working status, and number of births. Odds ratios and 95% confidence intervals were calculated to assess size and significance of associations. All analyses were conducted using SPSS version 25 (IBM Corp, Armonk, NY, USA).

Results

Wives had a mean age of 22.6 years (SD: 2.5); husbands had a mean age of 26.2 (SD: 2.7) (Table 1). The majority (72.1%, n=621) of couples belonged to scheduled caste or tribal

categories (most marginalized communities). Couples were married on average for 4 years (range: 0–14 years; SD: 2.7 years). In terms of education, fewer husbands, relative to wives, reported no formal education (9.1%, n=78 husbands; 17.3%, n=149 wives); though husbands and wives had similar ranges and mean years of highest standard of education completed [range 0–17 years for husbands and wives; mean=6.5 (SD: 4.2) for wives; mean=7.3 (SD: 3.7) for husbands]. The range for family monthly income was wide (9.3–1851.9 USD), with a mean of 123.9 USD (SD: 134.6 USD)] (converted from rupees to dollars, 2012). Most wives (76.1%; n=655) were not engaged in any income-generating activities, while almost all husbands reported engagement in income-generating activities (97.7%, n=841). Wives reported having an average of 1.4 children (SD: 1.0), with a range of 0–6 children.

Consistent with national trends,[6] the majority of wives (72.1%; n=621) reported not using any method of modern spacing contraception; among women in this category, 98.1% (n=609) reported not using any contraception, and 3.1% (n=19) reported using a traditional method. Similar proportions of women reported using condoms (13.8%; n=119), and other modern spacing contraception (14.1%; n=121). Among other modern spacing users, 83.5% (n=101) reported using pills, 16.5% (n=20) used IUDs, and 0.8% (n=1) used injectables.

Physical and/or sexual IPV was reported by 13.0% (n=112) of women in the past 6 months; 9.1% (n=78) reported physical IPV without sexual IPV, and 3.9% (n=34) reported sexual IPV (with or without physical IPV) for this timeframe. More than half (64.7%, n=22) of women reporting sexual IPV also reported physical IPV victimization. Only 4.4% (n=38) of husbands reported elevated alcohol use (22654 drinks on one occasion), in the past 30 days. Husbands had an average score of 34.3 (SD: 5.3) on the GEM scale, with a range from 24.0–56.0 (with higher scores indicated greater gender equity ideology).

Table 2 shows the results of multinomial logistic regression associations (crude and adjusted) of physical and sexual IPV, respectively, with modern spacing contraceptive use (Table 2). Crude and adjusted analyses indicate that women reporting physical IPV (past 6 months) were more likely to report condom use (past 3 months), relative to not using any method of modern spacing contraception (AOR: 2.46, 95% CI: 1.20, 5.04). No significant associations were found between physical IPV and other modern spacing contraceptive use. In both the crude and adjusted models, women reporting sexual IPV were more likely to report using other modern spacing contraception (AOR: 3.27, 95% CI: 1.24, 8.56). No significant associations were seen between women reporting sexual IPV and condom use, however.

Discussion

Among married couples in rural Maharashtra, India, our study revealed significant positive associations between women's reports of physical IPV victimization and condom use, where women reporting physical violence were more than two times more likely to report using condoms (relative to not using any method of modern spacing contraception). Women reporting sexual violence were more than three times more likely to report using other modern spacing contraception (relative to not using any method of modern spacing contraception). Further, the vast majority of this sample reported not using any contraceptive

method, which is striking and represents serious need for consideration for family planning intervention efforts.

These findings build upon the existing body of work that examines relationships between IPV and contraception use in South Asia, and in particular, draw attention for the need to test separate pathways such as those between physical and sexual violence and various forms of contraception (rather than consider all factors in aggregate). Our results depart from the main findings of Stephenson and colleagues,[4,7–8] and Kishor[6] where the authors found that women contending with IPV (Stephenson – physical IPV; Kishor – physical and sexual IPV) were *less* likely to report use of modern contraception. The majority of women included in these analyses, however, reported *sterilization* as their method of contraceptive use, whereas the current analyses focus solely on modern spacing contraceptive use. Further, Stephenson's paper focused on contraception *adoption* in their inter-survey periods of four years. Work by Raj and colleagues[25] finding that women experiencing sexual IPV were less likely to use sterilization, but more likely to use modern spacing contraception highlight the important need to differentiate between spacing and permanent methods of modern contraception use, as each type of method is associated with its own social norms and historical context within India. For example, findings that IPV is associated with lower likelihood of female sterilization simply may be indicative that couples are not finished childbearing. This is consistent with literature documenting associations between women experiencing IPV having greater number of children compared to women without IPV victimization.[6]

Our findings are consistent with those of Raj and colleagues,[25–26] in that sexual IPV is associated with increased likelihood of using modern spacing contraception. Specifically, our finding that sexual IPV is associated with increased use of modern spacing methods *other than condoms* builds on the descriptive findings from Raj and colleagues.[26] Our results add to the growing body of literature indicating that women experiencing violence (specifically sexual IPV), may rely on methods of contraception that do not require male participation (i.e. modern spacing methods other than condoms). Qualitative data from India indicate that women experiencing violence may rely on covert methods of contraception as a means to control pregnancy.[9] It is possible that women may rely on methods of contraception they may have greater control over, such as oral pills, and IUDs, when contending with sexual violence.

It is important to note the lack of association between physical IPV and use of other modern spacing contraception. Though Raj and colleagues[25–26] also did not find significant associations between physical IPV and modern spacing contraceptive use, our study is the first to test associations between IPV and various forms of modern spacing contraception. Nonetheless, this lack of association, within the presence of a significant association between sexual IPV and modern contraceptive use, indicates that the form of violence perpetrated against women does influence her contraception use.

Our study appears to be the first in this body of literature to find that physical IPV is associated with *increased* likelihood of condom use, departing from established literature indicating the opposite associations,[20–23] including a meta-analysis examining the literature

on the effect of IPV on women's contraceptive use.[32] However, many of these studies have focused on populations at high risk for HIV through unprotected sex with female sex workers in India, where sex workers may have even more limited control over contraceptive methods due to power dynamics associated within the client-sex worker context.[23] Further, most studies have considered violence without consideration of potential differences in associations based on form of violence (physical/sexual). It is conceivable that because this violence may not necessarily take place at the time of sexual intercourse, that there may be greater opportunity for conversation and use of contraception that requires male participation (i.e. condom); that while physical violence is occurring within the relationship, it may not be associated with challenges in using condoms. Social acceptability for marital violence among both husbands and wives is high within India,[6] as well as within our sample, and data indicate that justification for physical violence against wives commonly includes situations when wives challenge traditional gender roles ascribed to women (ex. neglecting domestic duties).[33]

These findings must be considered with certain limitations. Due to the study's cross-sectional design, causal relationships between IPV and modern spacing contraception use could not be inferred. While significant associations were detected in regressions, it is important to note that the overall reporting of both physical IPV and especially sexual IPV across categories of contraceptive use were quite low. Low cell sizes may have contributed to inability to detect significant differences between those reporting sexual IPV victimization and condom use, for example. As a result, null findings must be considered in light of low cell sizes. In addition, survey data are subject to both recall bias and social desirability bias, which may have resulted in under-reporting of IPV and potentially over-reporting of contraception use, as the participants were aware that they were participating in a family planning and gender equity study. These biases may have led to conservative estimates of results. Additionally, it is possible that selection bias may have played a role in selection of study subjects, as all study participants consented to participate in a family planning intervention (and were not sterilized). It is possible that participants who were interested in participating in the study were more likely to report use of modern spacing methods relative to those who did not participate in the study. Finally, these findings are specific to married couples residing in specific communities in rural Maharashtra, India, and should not be considered as representative for married couples in other parts of Maharashtra or India.

Despite these limitations, the present analyses offer new insight into the complex relationship between IPV and contraceptive use among a sample of married couples in rural Maharashtra, India; an area characterized by high fertility and low use of modern spacing contraception.[34] While others[35] have examined the relationship between IPV and modern spacing contraceptive use in Maharashtra, this research was limited to urban areas (Mumbai) of the state, which sees higher rates of modern spacing contraceptive use. These studies, though consistent with our findings in that IPV was associated with a greater likelihood of women using modern spacing methods, included physical, sexual and emotional violence collectively in the definition of IPV, and also examined all methods of modern spacing contraception together.

The present study offers the first opportunity to tease apart these nuanced differences in associations. Further research in this area should be conducted to better understand contextual factors that may contribute to the association between IPV and modern spacing contraceptive use in an effort to guide family planning and violence prevention programming in India. Specifically, qualitative data collection and analysis may prove useful in providing insight into how and why various forms of violence (physical/sexual) may influence use of various methods of spacing contraception differently. Large-scale quantitative studies examining these issues should also be prioritized, especially given general low rates of IPV victimization reporting.

India's national family planning program has evolved over the last few decades; the Government has moved away from its promotion of permanent methods of contraception (i.e. female sterilization),[36] and is now emphasizing the use of spacing contraceptive methods (specifically, IUD).[37] Integration of IPV services within the context of healthcare services builds on existing evidence showing that while women rarely seek out programming for IPV reduction directly, women's engagement with reproductive-related healthcare services is increasing, globally,[37] and often offers a unique and safe space for screening, and intervention on IPV.[39–40] Additionally, efforts should be made to intervene with men on IPV perpetration in settings where men may seek condoms, as men often provide condoms within marital relationships.[36] Present findings support the need to develop and evaluate IPV programming within healthcare services in rural Maharashtra, India where men and women seek family planning services.

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References

1. World Health Organization, WHO multi-country study on women's health and domestic violence against women: initial results on prevalence, health outcomes and women's responses. 2005, World Health Organization: Geneva, Switzerland.
2. World Health Organization, Understanding and addressing violence against women 2012, World Health Organization, Pan American Health Organization.
3. Sarkar NN, The impact of intimate partner violence on women's reproductive health and pregnancy outcome. J Obstet Gynaecol, 2008 28(3): p. 266–71. [PubMed: 18569465]
4. Stephenson R, et al., Domestic violence, contraceptive use, and unwanted pregnancy in rural India. Stud Fam Plann, 2008 39(3): p. 177–86. [PubMed: 18853639]
5. Begum S, et al., Association between domestic violence and unintended pregnancies in India: findings from the National Family Health Survey-2 data. Natl Med J India, 2010 23(4): p. 198–200. [PubMed: 21192511]
6. Kishor S and Gupta K, Gender Equality and Women's Empowerment in India: National Family Health Survey (NFHS-3), India, 2005–06. 2009, International Institute for Population Sciences: Calverton, Maryland, USA.
7. Stephenson R, Koenig MA, and Ahmed S, Domestic violence and contraceptive adoption in Uttar Pradesh, India. Stud Fam Plann, 2006 37(2): p. 75–86. [PubMed: 16832982]

8. Stephenson R, Jadhav A, and Hindin M, Physical domestic violence and subsequent contraceptive adoption among women in rural India. J Interpers Violence, 2013 28(5): p. 1020–39. [PubMed: 23008052]

9. Wilson-Williams L, et al., Domestic violence and contraceptive use in a rural Indian village. Violence Against Women, 2008 14(10): p. 1181–98. [PubMed: 18802213]

10. National Family Health Survey (NFHS-3), 2005–06: India: Volume II. 2007, International Institute for Population Sciences (IIPS) and Macro International: Mumbai.

11. National Family Health Survey (NFHS-3), India, 2005–06: Maharashtra, 2008, International Institute for Population Sciences (IIPS) and Macro International: Mumbai.

12. Sedgh G, et al., Women with an Unmet Need for Contraception in Developing Countries and Their Reasons for Not Using a Method, in Occasional Report No. 37. 2007, Guttmacher Institute: New York.

13. Zavier F and Padmadas SS, Use of a Spacing Method Before Sterilization Among Couples in Kerala, India. International Family Planning Perspectives, 2000 26(1): p. 29–35.

14. Matthews Z, et al., Does early childbearing and a sterilization-focused family planning programme in India fuel population growth? Demographic Research, 2009 20(28): p. 693–720.

15. Government of India, India's 'Vision FP 2020', Family Planning Division, Ministry of Health and Family Welfare, Editor. 2014, Government of India: New Delhi, India.

16. Singh A, et al., Sterilization regret among married women in India: implications for the Indian national family planning program. Int Perspect Sex Reprod Health, 2012 38(4): p. 187–95. [PubMed: 23318168]

17. Ghule M, et al., Barriers to use Contraceptive Methods among Rural Young Married Couples in Maharashtra, India: Qualitative Findings. Asian Journal of Research in Social Sciences and Humanities, 2015 5(6): p. 18–33. [PubMed: 29430437]

18. Conde-Agudelo A, et al., Birth spacing and risk of adverse perinatal outcomes: a meta-analysis. JAMA, 2006 295(15): p. 1809–1823. [PubMed: 16622143]

19. Conde-Agudelo A, et al., Effects of birth spacing on maternal health: a systematic review. Am J Obstet Gynecol, 2007 196 (4): p. 297–308. [PubMed: 17403398]

20. Panchanadeswaran S, et al., Intimate partner violence is as important as client violence in increasing street-based female sex workers' vulnerability to HIV in India. Int J Drug Policy, 2008 19(2): p. 106–12. [PubMed: 18187314]

21. Patel SN, et al., Individual and Interpersonal Characteristics that Influence Male-Dominated Sexual Decision-Making and Inconsistent Condom Use Among Married HIV Serodiscordant Couples in Gujarat, India: Results from the Positive Jeevan Saathi Study. AIDS Behav, 2014.

22. Deering KN, et al., Violence and HIV risk among female sex workers in Southern India. Sex Transm Dis, 2013 40(2): p. 168–74. [PubMed: 23441335]

23. Swain SN, et al., Experience of violence and adverse reproductive health outcomes, HIV risks among mobile female sex workers in India. BMC Public Health, 2011 11: p. 357. [PubMed: 21599984]

24. Khan M, et al., Sexual violence within marriage. Seminar, 1996(447): p. 32–35.

25. Raj A, et al., Associations of marital violence with different forms of contraception: Cross-sectional findings from South Asia. Int J Gynaecol Obstet, 2015 130 Suppl 3: p. E56–61. [PubMed: 25997632]

26. Raj A and McDougal L, Associations of intimate partner violence with unintended pregnancy and pre-pregnancy contraceptive use in South Asia. Contraception, 2015 91(6): p. 456–63. [PubMed: 25769441]

27. Yore J, et al., CHARM, a gender equity and family planning intervention for men and couples in rural India: protocol for the cluster randomized controlled trial evaluation. Reproductive Health, 2015 13(14).

28. Drinking Levels Defined. 2015 [cited 2017 May 3]; Available from: http://www.niaaa.nih.gov/alcohol-health/overview-alcohol-consumption/moderate-binge-drinking.

29. Pulerwitz J and Barker G, Measuring attitudes toward gender norms among young men in Brazil: Development and psychometric evaluation of the GEM Scale Men and Masculinities, 2008 10(3): p. 322–338.

30. Verma RK, et al., Challenging and changing gender attitudes among young men in Mumbai, India. Reprod Health Matters, 2006 14(28): p. 135–43. [PubMed: 17101432]
31. Streiner DL and Norman GR, Health Measurement Scales A Practical Guide to Their Development and Use. 2008, New York: Oxford University Press.
32. Maxwell L, et al., Estimating the effect of intimate partner violence on women's use of contraception: a systematic review and meta-analysis. PLoS One, 2015 18 (10): e0118234.
33. Nanda P, et al., Study on Masculinity, Intimate Partner Violence and Son Preference in India. 2014, International Center for Research on Women: New Delhi, India.
34. Goldenberg RL, et al., Epidemiology and causes of preterm birth. Lancet, 2008 371(9606): p. 75–84. [PubMed: 18177778]
35. Das S, et al., Intimate partner violence against women during and after pregnancy: a cross-sectional study in Mumbai slums. BMC Public Health, 2013 13: p. 817. [PubMed: 24015762]
36. Donta B, Begum S, and Naik DD, Acceptability of male condom: an Indian scenario. Indian J Med Res, 2014 140 Suppl: p. S152–6. [PubMed: 25673537]
37. Government of India. National Health Mission: Thrust Areas under Family Planning Programme. 2015 2/2/2015 [cited 2015 4/24/2015]; Available from: http://nrhm.gov.in/nrhm-components/rmnch-a/family-planning/background.html.
38. Chibber KS and Krishnan S, Confronting intimate partner violence: a global health priority. Mt Sinai J Med, 2011 78(3): p. 449–57. [PubMed: 21598270]
39. Miller E, et al., Intimate partner violence and health care-seeking patterns among female users of urban adolescent clinics. Matern Child Health J, 2010 14(6): p. 910–7. [PubMed: 19760162]
40. Tancredi DJ, et al., Cluster randomized controlled trial protocol: addressing reproductive coercion in health settings (ARCHES). BMC Womens Health, 2015 15: p. 57. [PubMed: 26245752]

Table 1.

Profiles of married women living in rural Maharashtra: demographic, marriage, fertility preferences, and exposure to violence (N=861)

Variable	n (%)
Demographic Variables	
Wives' age (mean, SD, range)	22.6, 2.5, 18–30
Husbands' age (mean, SD, range)	26.2, 2.7, 18–30
Wives' years of education (mean, SD, range)	6.5, 4.2, 0–17
Husbands' years of education (mean, SD, range)	7.3, 3.7, 0–17
Husbands' caste (caste)	
Scheduled caste/tribe	621 (72.1%)
Other backward class/none	240 (27.9%)
Family monthly income, USD (median, SD, range)	123.9, 134.6, 9.3–1851.9
Wives' working status	
Engaged in income-generating activities	206 (23.9%)
Not engaged in income-generating activities	655 (76.1%)
Marital length, years (mean, SD, range)	4.0, 2.7, 0–14
Marriage Characterization and Fertility Preferences	
Contraceptive use, past 3 months	
Condom use	119 (13.8%)
Other modern spacing method	121 (14.1%)
Pills	101 (83.5%)
IUD	20 (16.5%)
Injectables	1 (0.8%)
None	621 (72.1%)
No contraception use	609 (98.1%)
Traditional methods (rhythm and withdrawal)	19 (3.1%)
Number of living children (mean, SD, range)	1.4, 1.0, 0–6
Husbands' Risky Behaviors/Attitudes	
Husbands' gender equity ideologies (mean, SD, range)	34.4, 5.3, 24.0–56.0
Husbands' elevated alcohol use (4+ drinks, past 30 days)	
Yes (1+ days)	38 (4.4%)
No (0 days)	823 (95.6%)
Physical IPV (without sexual IPV), past 6 months	
Yes	78 (9.1%)
No	783 (90.9%)
Sexual IPV (with or without physical IPV), past 6 months	
Yes	34 (3.9%)
No	827 (96.1%)
Physical IPV and/or forced sex, past 6 months	
Yes	112 (13.0%)
No	749 (87.0%)

Table 2.

Unadjusted and adjusted multinomial logistic regression: associations between past 6 month physical IPV (without sexual IPV), and sexual IPV (with or without physical IPV) with modern spacing contraception use (past 3 month) (N=861)

Variable	n (%)	OR (95% CI)	AOR[a] (95% CI)
Physical IPV (no sexual IPV), past 6 months (n=78)			
Condom use, past 3 month	17 (21.8)	**1.87 (1.04, 3.37)**	**2.46 (1.20, 5.04)**[b]
Other modern contraception use, past 3 month	10 (12.8)	1.06 (0.52, 2.15)	1.19 (0.54, 2.65)
No modern contraception use	51 (65.4)	-	-
Sexual IPV (with or without physical IPV), past 6 months (n=34)			
Condom use, past 3 month	4 (11.8)	0.99 (0.34, 2.95)	1.62 (0.44, 6.02)
Other modern contraception use, past 3 month	9 (26.5)	**2.30 (1.03, 5.14)**[b]	**3.27 (1.24, 8.56)**[b]
No modern contraception use	21 (61.8)	-	-

[a]Adjusted for cluster, age, education (husbands, and wives), husbands' caste, family's monthly income, wives' working status, and number of births, husbands' gender equity ideologies, and husbands' elevated alcohol use (husband's reports).

[b]$p \leq 0.05$