

ORIGINAL RESEARCH ARTICLE

Intimate partner violence and contraceptive discontinuation in Kenya

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Abstract

Intimate partner violence (IPV) may interfere with women's contraceptive use. This study analyzed IPV and discontinuation while still in need (DWSIN) using detailed contraceptive calendar data from the 2014 Kenya Demographic and Health Survey and measures of IPV experience in the same 12-month observation period. Using multivariable regression analysis, it examined three forms of violence separately—emotional, physical, and sexual violence—and any IPV combined among 1,437 married women age 15-49 who were using a contraceptive method twelve months prior to the interview. DWSIN varied with the form of violence assessed. Emotional violence (odds ratio (OR) = 2.13, $p < 0.01$) and any IPV (OR = 1.88, $p < 0.05$) were strongly, positively associated with higher odds of DWSIN. Sexual violence was weakly associated with higher odds of DWSIN, while there was no detected association with physical violence. Integrating IPV screening into family planning counseling may reduce DWSIN and support women to achieve their reproductive aspirations. (*Afr J Reprod Health* 2021; 25[2]: 17-27).

Keywords: Contraception, discontinuation, intimate partner violence, Kenya

Résumé

La violence exercée par les partenaires intimes (VPI) peut interférer avec l'utilisation de la contraception par les femmes. Cette étude a analysé la VPI et l'interruption de la contraception parmi les besoins non satisfaits en matière de planification familiale (DWSIN) à l'aide des données détaillées du calendrier contraceptif de l'enquête démographique et de santé au Kenya de 2014 et des mesures de l'expérience de la VPI au cours de la même période d'observation de 12 mois. À l'aide d'une analyse de régression multivariée, elle a examiné trois formes de violence séparément—violence émotionnelle, physique, et sexuelle—et toutes VPI combinées parmi 1 437 femmes mariées âgées de 15 à 49 ans qui utilisaient une méthode contraceptive douze mois avant l'entrevue. Le DWSIN variait selon la forme de violence évaluée. La violence émotionnelle (rapport de cotes (OR) = 2,13, $p < 0,01$) et toutes VPI (OR = 1,88, $p < 0,05$) étaient fortement et positivement associées à des chances plus élevées de DWSIN. La violence sexuelle était faiblement associée à une chance plus élevée de DWSIN, alors qu'il n'y avait aucune association détectée avec la violence physique. L'intégration de l'évaluation pour VPI dans les conseils autour de la planification familiale peut réduire le DWSIN et aider les femmes à réaliser leurs aspirations reproductives. (*Afr J Reprod Health* 2021; 25[2]: 17-27).

Mots-clés: Contraception, arrêt, violence entre partenaires intimes, Kenya

Introduction

Intimate partner violence (IPV) presents a substantial public health concern and violation of women's human rights. Appropriately, a substantial and growing body of literature documents the prevalence and patterns of such violence¹⁻⁶. In addition, IPV is also associated with a number of adverse sexual and reproductive health outcomes. Research has identified a relationship between IPV and higher parity, unmet need for family planning^{7,8}, adolescent pregnancy or unintended,

mistimed, or unwanted pregnancy^{2,9-11}. These findings indicate that women who experience IPV may have greater difficulty controlling their reproduction in ways that align with their fertility aspirations.

One way by which women who experience IPV may be less able to use contraception consistently may be reproductive coercion—which includes contraception sabotage, pregnancy coercion, sexual and pregnancy pressure, and attempts to control the outcome of a pregnancy by a male partner¹²⁻¹⁶.

The empirical evidence on the relationship between IPV and contraceptive use is inconclusive. Without accounting for temporality, numerous studies based on cross-sectional data find that women who experienced IPV are *more likely* to use contraception^{17,18}, with some researchers positing that women who experience IPV may be more motivated to avoid pregnancy, particularly if they can access discreet methods of contraception that can be used covertly.

Other cross-sectional research finds that women who experienced IPV are *less likely* to use contraception^{19,20}. Yet other research finds *no association* with IPV and contraceptive use^{21,22}. A multicountry study using Demographic and Health Surveys (DHS) data finds that women who have ever in their lifetime experienced IPV are more likely to have ever used modern contraception at some point in their lives than those who have not reported IPV, but among women in most of the ten developing countries studied, there was no significant association between IPV and current contraceptive use²³.

Several studies attempt to isolate the timing of violence in relation to specific contraceptive behavior. Wilson-Williams et al. suggest that contraception can lead to violence if a woman is discovered using contraception without her partner's consent²⁴. A recent systematic review and meta-analysis²⁵ reviewed longitudinal studies in which IPV preceded contraceptive use. With the exception of one study²⁶, the review found that IPV was negatively associated with use of contraception, particularly condom use, although that association varied by whether the form of IPV was physical or sexual²⁷. Few studies examine the reverse temporal order when contraceptive use precedes IPV.

The IPV literature has seldom delved beyond current contraceptive status into the dynamics of contraceptive behavior, such as consistent use, switching, or discontinuation. One exception are studies linking IPV with inconsistent condom use¹⁹, although this literature is often framed in terms of sexually risky behaviors related to disease prevention, rather than reproductive aspirations. Meanwhile an established demographic literature on contraceptive dynamics fails to examine IPV as a possible reason for discontinuation, instead looking to side

effects/health concerns, cost, or availability as explanations²⁸⁻³².

This study seeks to fill a void left by the intersection of the demographic and IPV literatures on women's contraceptive behavior by examining data from women in Kenya, where nearly half of all married women have experienced some form of IPV³³. While the modern contraceptive prevalence rate among currently married women age 15-49 is 53%, nearly three quarters of women who discontinue contraceptive use within 12 months, do so for reasons other than wanting to become pregnant³³. Such discontinuation may contribute to unmet need for family planning, which stands at 18% of currently married women.

We explore whether and to what degree women in Kenya who experience IPV have greater difficulty using contraception with continuity until a pregnancy is desired than women who do not experience various types of IPV. Specifically, this study analyzes contraceptive discontinuation while still in need of contraception (DWSIN) by experience of multiple forms of IPV (emotional, physical, sexual, or any IPV). We use time-bound measures of IPV experience and contraceptive behavior to collocate these experiences in the same 12-month window. We hypothesize that Kenyan women who experience IPV will be more prone to discontinuation while still in need of contraception and that this effect will be most pronounced among women who use short-term, non-LARC methods of contraception.

Methods

Data

This study uses data from the 2014 Kenya DHS. This survey, like all DHS surveys, is a nationally representative, population-based household survey that employs standardized questionnaires and modules and multistage, clustered area sampling techniques³³. This survey includes both the contraceptive calendar and the domestic violence module with a full complement of items assessing emotional, physical, and sexual violence. The 2014 Kenya DHS has a 96.6% overall eligible woman response rate and a violence module response rate of 99.7%. We base our analysis of DWSIN on data obtained through the contraceptive calendar. The contraceptive calendar records month-by-month,

retrospective information on episodes of contraceptive use or non-use, live births, pregnancies, and terminations for the five completed years preceding the survey. The contraceptive calendar has become the primary data source for estimating contraceptive discontinuation rates and other contraceptive dynamics^{28,30,34-36}. We convert calendar data contained in the standard women's recode file into an events data file, in which each episode of contraceptive use is one observation in the dataset.

We define our observation period as the 12 months preceding the interview. We limit analysis to episodes in which women were using modern, temporary contraception at the start of our period of observation. We do so because women who adopt contraception beyond this point would have shortened contraceptive episodes (right censored) and could not be observed for a full 12 months, possibly underestimating DWSIN in this sample. Further, by limiting our analysis to women who were using contraception at the start of 12-month period, we reduce violations of temporality whereby the exposure (IPV at any time in the last 12 months) precedes the outcome (DWSIN). Each woman contributes a single episode. For ease of interpretation, therefore, this study refers to *women* or *contraceptive users* rather than *episodes of contraceptive use* as the unit of analysis.

Fourteen thousand, seven hundred and forty 1 (14,741) women interviewed with the contraceptive calendar, of whom 5,547 were administered the violence module. We further restrict to currently married women (n=3,352) and then to the 43% of currently married women who were using a modern, temporary method of contraception 12 months before the interview. These methods include pills, intrauterine device (IUD), injectables, implants, condoms, lactational amenorrhea method (LAM), emergency contraception, and standard days method. We exclude women who/whose husbands were sterilized at the start of the observation period because these women are not at risk of discontinuation. Our final analytic sample comprises 1,437 women.

Measures

Our outcome measure, contraceptive discontinuation, is defined as the interruption of

contraceptive use for one month or longer. DWSIN refers to discontinuing for reasons other than wanting to become pregnant or no longer at risk of pregnancy. These include: health concerns/side effects, method inconvenient to use, wanted a more effective method, costs too much, lack of access/too far, or other reasons, such as husband opposition to contraception. We operationalize our outcome as a dichotomous variable, coded 1 for women who were using contraception 12 months prior to the survey, but who DWSIN before the completion of the observation period and coded 0 otherwise. Those in the 0 category include women who discontinued due to no further need (e.g. wanted to become pregnant, infrequent sex/husband away, marital dissolution/separation, difficult to get pregnant/menopausal) and those who did not discontinue.

Our independent variables of interest come from the domestic violence module, which is administered to just one randomly selected eligible respondent in each selected household, in accordance with the WHO guidelines on the ethical conduct of domestic violence research^{37,38}. This module includes measures of multiple, distinct forms of violence: emotional violence (3 items), physical violence (7 items), sexual violence (3 items), and marital control (both suspicion (3 items) and isolating controlling behaviors (3 items))^{5,39}. Prior factor analyses confirm that each of the items load robustly onto their respective form of violence (MacQuarrie, Winter, and Kishor 2013, 2014). Emotional, physical, and sexual forms of violence is captured through the use of an abbreviated version of the conflict tactics scales (CTS)^{40,42}, which refer to specific behavioral acts, regardless of whether they are understood to constitute violence in a given cultural setting⁴. For each of these items, ever-married women report whether they have ever experienced that item, whether and how frequently they have experienced it in the past 12 months.

This study focuses on emotional, physical, and sexual violence perpetrated by the current spouse. We exclude marital control (suspicion and isolation) from our analysis because these items are not time-bound. Because they do not refer specifically to the previous 12 months, we cannot place the experience of marital control within or outside of our period of observation. We create a separate dichotomous measure for each of the remaining three forms of violence. Women who

report experiencing any item of the respective form of violence in the 12 months prior to the survey are coded as 1; women who have not are coded as 0. A fourth variable, any IPV, is a composite variable in which women who have experienced one or more of emotional, physical, or sexual violence in the prior 12 months are coded as 1 and women who have not are coded as 0. By restricting our observation period to the 12 months prior to interview, we ensure that measures of IPV are co-located in the same 12-month window as observations of contraceptive discontinuation.

Analysis

Following descriptive analysis, we assess the bivariate and multivariable associations between DWSIN and the experience of IPV in separate logistic regression models corresponding to emotional, physical, and sexual violence and any IPV. Multivariable models control for the duration of contraceptive use prior to the start of the observation period, type of contraceptive method (LARC/non-LARC), age at the time of the survey, household wealth quintile, residence, religion, education, number of living children, and employment status (not employed, not employed for cash, and employed for cash). Type of contraceptive method is classified as long-acting, reversible contraceptive methods (LARCs) or non-LARC methods, i.e. shorter term methods. LARCs include IUDs and implants.

We apply sample weights (d005) that account for both sampling probability and non-response for the violence module and the complex survey commands (*svy*) in Stata to adjust for the clustered sampling design and estimate robust standard errors. We estimate robust standard errors and 95% confidence intervals and interpret $p < 0.05$ to be statistically significant. Where $p < 0.10$, we interpret the result to be borderline significant.

Results

Table 1 summarizes the background characteristics of the analytic sample. It indicates that 22.2% of the analytic sample was using a LARC and 77.8% was using a short-term, modern method at the start of the observation period. Injectables are the dominant method, used by 50.4% of the women in our sample, followed by implants (14.3%) and pills

(12.1%). Among the 1,437 contraceptive users, DWSIN was 8.8% while discontinuation due to no further need was 6.3%.

In general, most women in the sample are between 25-34 years of age (52.3%) and have at least a primary level of education (56.7%). A greater proportion of women are in the richer wealth quintiles compared with the poorer quintiles. This may reflect that contraceptive use is concentrated among wealthier quintiles in Kenya. The sample is roughly evenly divided between rural and urban areas and is predominantly Christian. Two-thirds of women are employed for cash, with equal proportions either not employed or employed but not earning cash. Very few women in the sample had no children at the time of interview, with most women having 1-2 children (48.4%), followed by 3-4 children (32.5%).

Experience of intimate partner violence

Figure 1 presents Euler-style area proportional Venn diagrams⁴³ indicating overall prevalence of each form of violence as well as their intersections. Approximately a third of the sample reports experiencing any IPV in the last 12 months. The proportion of women reporting emotional violence is 26.2%, physical violence is 23.7%, and 11.9% for sexual violence.

Associations between IPV and discontinuation while still in need

As shown in Table 2, each form of violence and any IPV demonstrates a tenuous relationship in bivariate analysis. Only the experience of emotional violence in the last 12 months approaches a significant association with DWSIN (unadjusted odds ratio (uOR) = 1.67, $p < 0.10$). However, these associations strengthen in full models that control for other factors. After controlling for contraceptive experience and socio-demographic variables, women who have experienced emotional violence in the 12-month observation period before the survey have over two times the odds of DWSIN compared to women who did not experience this type of violence (adjusted odds ratio (aOR) = 2.13, $p < 0.01$), while women who experience any IPV have 88% higher odds of DWSIN (aOR=1.88, $p < 0.05$). Women who experience sexual violence also appear to face increased odds of DWSIN, but

Table 1: Background characteristics of the analytic sample: Currently married women age 15-49 using contraception 12 months prior to interview, 2014 Kenya DHS

Characteristic	Percent
Discontinuation in preceding 12 months	
Discontinuation while still in need	8.8
Discontinuation due to no further need	6.3
Method used 12 months prior to survey	
LARC	22.2
non-LARC	77.8
Duration of use before the observation period	
1-12 months	34.7
13-36 months	32.9
37+ months	32.4
Age	
15-19	0.9
20-24	14.9
25-29	28.8
30-34	23.5
35-39	16.2
40-44	10.8
45-49	4.9
Wealth quintile	
Poorest	7.4
Poorer	17.7
Middle	20.3
Richer	25.5
Richest	29.1
Place of residence	
Urban	47.5
Rural	52.5
Religion	
Muslim	2.6
Christian	96.5
Other	0.9
Education	
No education	2.2
Primary	56.7
Secondary	31.0
Higher	10.0
Employment	
Not employed	18.0
Employed for cash	66.6
Employed not for cash	15.4
Number of living children	
0	2.6
1-2	48.4
3-4	32.5
5+	16.5
Weighted n	1,437

Notes:

LARCs include IUDs and implants. Non-LARCs include injections, pills, condoms, and LAM

these results are only borderline significant (aOR 2.01, p<0.10). There is no significant association detected between physical violence and DWSIN.

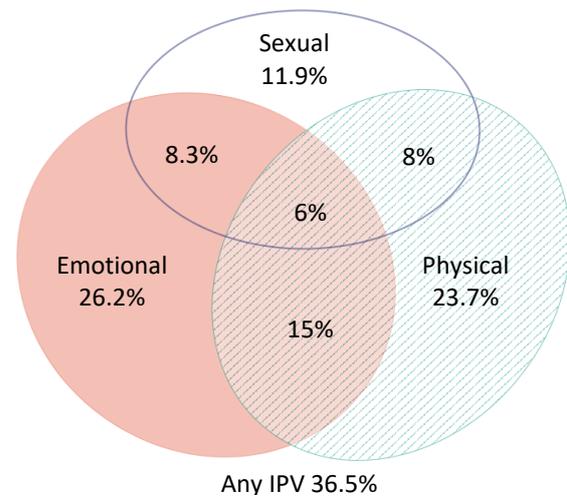


Figure 1: Proportion of currently married women age 15-49 in the analytic sample (n=1,437) experiencing each form of intimate partner violence in the 12 months prior to the survey, 2014 Kenya DHS

Among the other variables in the models, odds of DWSIN may be higher among Muslim women (compared to Christian women) and lower among women employed and earning cash, women in the richer and richest household wealth quintiles, and those with 3-4 living children. The type of contraceptive method, duration of use, place of residence, and education were not associated with DWSIN in any of the models.

Discussion

Research has shown that IPV can lead to less contraceptive use^{25,44} and reproductive coercion and controlling behaviors can interfere with contraceptive practices, potentially contributing to unintended pregnancy¹⁴⁻¹⁶. Based on this literature, we hypothesized that women who experience intimate partner violence would be more likely to experience interruptions in their contraceptive use, namely, that they would be more likely to experience discontinuation while still in need. This study takes advantage of detailed data in the contraceptive calendars⁴⁵ and psychometrically tested measures of various forms of IPV^{5,38,40,42}, which we are able to co-locate in the same 12-month observation period, to test this hypothesis. We examine three forms of violence separately—emotional violence, physical violence, and sexual

Table 2: Unadjusted and adjusted odds of discontinuing while still in need in the 12 months prior to the survey among currently married women age 15-49: Results from separate logistic regressions by type of violence: emotional violence, physical violence, sexual violence, or any intimate partner violence, 2014 Kenya DHS

	Model 0: uOR	Model 1: Emotional violence aOR	Model 2: Physical violence aOR	Model 3: Sexual violence aOR	Model 4: Any IPV aOR
Experience of intimate partner violence (ref=no violence in last 12 months)					
Emotional violence	1.67 [†]	2.13 ^{**}			
Physical violence	1.16		1.48		
Sexual violence	1.78			2.01 [†]	
Any IPV	1.44				1.88 [*]
Method used 12 months prior to survey (ref=LARC method)					
non-LARC	1.25	1.31	1.28	1.30	1.34
Duration of use before the observation period (ref=1-12 months)					
13-36 months	0.72	0.94	0.95	0.96	0.93
37+ months	0.77	1.43	1.38	1.41	1.40
Age (ref=15-24)					
25-29	0.67	0.90	0.87	0.87	0.88
30-34	0.50 [†]	0.83	0.81	0.83	0.84
35-39	0.24 ^{***}	0.38 [†]	0.40 [†]	0.40 [†]	0.39 [†]
40-44	0.19 ^{**}	0.34 [†]	0.36 [†]	0.37 [†]	0.36 [†]
45-49	0.47	0.98	0.96	0.96	0.98
Household wealth quintile (ref=poorest wealth quintile)					
Poorer	0.74	0.88	0.84	0.82	0.87
Middle	0.82	0.84	0.81	0.75	0.85
Richer	0.46 [†]	0.38 [†]	0.38 [*]	0.36 [*]	0.39 [*]
Richest	0.57	0.39 [†]	0.36 [†]	0.34 [*]	0.37 [†]
Place of residence (ref=urban)					
Rural	0.94	0.94	0.90	0.90	0.91
Religion (ref=Christian)					
Muslim	3.97 ^{**}	3.65 [†]	3.62 [*]	3.57 [†]	3.73 [†]
Other	0.18	0.31	0.28	0.29	0.28
Education (ref=primary education)					
None	0.55	0.37 [†]	0.39	0.37	0.38
Secondary	0.92	0.99	0.97	0.99	0.98
Higher	1.28	1.76	1.78	1.74	1.86
Employment (ref=not employed)					
Employed for cash	0.47 [*]	0.52 [*]	0.54 [†]	0.52 [*]	0.51 [*]
Employed not for cash	0.48 [*]	0.49 [†]	0.49 [†]	0.49 [†]	0.49 [†]
Number of living children (ref=1-2)					
0	1.71	1.32	1.38	1.30	1.32
3-4	0.34 ^{***}	0.36 ^{***}	0.36 ^{**}	0.38 ^{**}	0.36 ^{***}
5+	0.46 [*]	0.51	0.53	0.53	0.51
Weighted n	1,437	1,437	1,437	1,437	1,437

Notes:

[†] p<0.10, * p<0.05, ** p<0.01, *** p<0.001

LARCs include IUDs and implants. Non-LARCs include injections, pills, condoms, and other modern methods.

Discontinuation is defined as the interruption of contraceptive use for one month or longer.

Discontinuation while still in need is defined as discontinuing for reasons other than wanting to become pregnant or no longer at risk of becoming pregnant (e.g. health concerns/side effects, method inconvenience, wanted a more effective method, cost, lack of access, or husband opposition)

violence—and the experience of any of these forms of violence with regard to their associations with DWSIN in the preceding 12 months.

Our findings are mixed and vary with the form of violence assessed. We find a positive association between DWSIN and both emotional violence and any IPV. However, the association between DWSIN and sexual violence is borderline and there is no association with physical violence.

There are several pathways by which IPV may lead to DWSIN. IPV is a mechanism of control and the experience of IPV is associated with a lack of agency and power^{7,9,14,46}. Women experiencing IPV may have difficulty obtaining permission, lack control over money, or face constraints on their mobility, which may be necessary to access contraceptive supplies on a timely basis and maintain consistent use. Women may DWSIN to avoid further incidents of abuse if her spouse opposes her contraceptive use, particularly if she had been using contraception covertly^{24,25}.

Additionally, women who experience IPV may also experience pregnancy coercion and pressure and discontinue contraception not because of her desire to become pregnant but at his insistence^{12,14,16}. Reproductive coercion also includes contraceptive sabotage, which could take the form of hiding, disposing of, or preventing the timely refilling/re-injection of pills or injectables^{12,14,16}.

This study's findings suggest that the form of violence matters. This should encourage us to measure the experience of multiple forms of violence in our data collection efforts and to carefully consider when to examine them separately or in combination with one another. It also suggests fertile ground to develop and empirically test conceptual frameworks delineating the potential causal pathways between separate forms of violence and outcomes of interest⁴⁷.

The reasons that one form of violence should have greater influence than another form remain unexplained. It is possible that some forms of IPV—emotional and sexual violence, for example—are more likely to coincide with reproductive coercion than other forms such as physical violence. This study does not elaborate these or other specific pathways between IPV and DWSIN, in part because these data are not frequently available. For example, the Kenya DHS does not include any measures of reproductive

coercion. Nonetheless, this is a ripe area for further inquiry.

Our findings cannot be generalized to other countries, as associations between various forms of IPV and DWSIN may vary in different contexts. Contrary to the positive associations we detected in Kenya, a multicountry analysis revealed findings regarding emotional and sexual violence were inconsistent across countries⁴⁸. Such associations were sometimes negative and—more often—nonexistent. Our study found no association between women's discontinuation behavior and physical violence, consistent with other settings in the multicountry study. It is unclear why IPV and DWSIN would show such variation in direction and magnitude of the association. It could be that way IPV manifests and is used to exert control differs across settings. Alternately, it could be that any relationship between IPV and discontinuation is mediated by the methods used in these settings. While injectables are dominant in the method mix in Kenya, relationships may differ in places where LARCs dominate the method mix and discontinuation is more difficult.

Previous studies indicate that discontinuation rates vary across methods^{28,30,49,50}. Elsewhere, use of a non-LARC method was independently, positively associated with discontinuation, and the magnitude of the effect may exceed that of IPV experience⁴⁸. In contrast, the present study found no such association between use of a non-LARC method and DWSIN.

This study has several limitations to note. First, this study assessed multiple forms of violence but could not assess all forms of violence that may influence contraceptive discontinuation. Namely, we could not investigate forms of marital control (e.g. suspicion and isolation) because these measures do not permit us to place the timing of experiencing this form of violence within our 12-month observation period and we could not investigate reproductive coercion because DHS survey instruments do not contain these measures. Second, although we co-locate our measures of violence and contraceptive discontinuation or continuation in the same 12-month observation period, we cannot be sure whether the experience of violence precedes any observed discontinuation. It is possible that some women who discontinue contraceptive use within the observation period may experience IPV following, rather than before,

DWSIN. Furthermore, we cannot ascertain whether women who experience IPV during the observation period also experienced IPV prior to observation, as IPV may be an ongoing experience for some women.

Finally, the DHS contraceptive calendar may be prone to underreporting of contraceptive use, particularly when that contraceptive use is of coital-dependent methods, of short duration, and in the earliest periods of the calendar⁵¹. It is unclear if such recall errors would result in under- or overestimation of discontinuation. Nonetheless, assessments indicate reporting improves in the most recent periods of the calendar⁵¹⁻⁵³. Because this study uses the most recent 12 months of the calendar, we anticipate any implications for our findings to be minimal.

The term “violence” often conjures to mind physical beatings, yet we found that other forms of violence, not physical violence, may influence contraceptive discontinuation. Given the greater importance of emotional or sexual violence for DWSIN, it is important that family planning workers in Kenya become sensitized about, and for screening tools to include probes for, these forms of violence in addition to physical violence. Probing for all forms of violence could lead to further conversations with clients about their sexual agency, repercussion of their contraceptive use, and desirable attributes in their contraceptive method, all of which may lead to more informed contraceptive choice and less likelihood of premature discontinuation. Such screening about women’s IPV experience may form a part of a broader strategy to deliver high quality contraceptive services to all women to better support their ongoing use of contraception to successfully achieve their reproductive aspirations⁵⁴.

Ethical Approval

The Kenya DHS survey protocol, including the domestic violence module, was approved by the internal review board (IRB) at ICF and by the Ministry of Health and National AIDS Control Council in Kenya³³. This study is a secondary analysis of publicly available data from this survey (<https://dhsprogram.com/Data/>) and does not require separate ethical clearance.

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Contribution of authors

Dr. Kerry L.D. MacQuarrie conceptualized and designed the study. Lindsay Mallick contributed to the study design. MacQuarrie and Mallick jointly analyzed the data. MacQuarrie prepared the manuscript, with Mallick writing sections, revising, and editing the manuscript. Both authors approved the manuscript.

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