Gender-based Violence and Modern Contraceptive Use in the Democratic Republic of Congo: the Influence of Community-level Factors

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ABSTRACT

Intimate partner violence (IPV) has been found to be negatively associated with contraceptive use, but evidence from Africa, which has the highest levels of IPV globally, is mixed. Further, existing studies have not investigated this relationship in a conflict setting, where restricted access to family planning may be exacerbated through collapse of formal health systems and levels of gender-based violence are often high. Using nationally representative data from Democratic Republic of Congo, we examined the relationship between individual- and community-level IPV and modern contraceptive use. Overall, 59% of women reported experiencing IPV, and current modern contraceptive use was low (4.5%). In multivariate models, individual experience of IPV was not associated with increased use of modern contraceptives overall or in the conflict region sub-sample, but community-level IPV was associated with lower odds of current contraceptive use in non-conflict regions (OR=0.25; 95%CI 0.07, 0.87). Results suggest improved access to family planning should be a priority for programming in DRC, and programs should target woman at risk for IPV.

INTRODUCTION

The highest rates of intimate partner violence (IPV) globally are found in Central Africa, where 66% of ever-partnered women report experiencing IPV (1). Negative health consequences of IPV include sexually transmitted infections, chronic pain, physical disability, psychological sequelae, and substance abuse (2-7). Additionally, IPV is a risk factor for mistimed and unwanted pregnancy (8-12), largely through its influence on contraceptive use (13).

The application of this finding in African settings has, however, been challenged (14). Moreover, we know of no study that examines the interplay between IPV and family planning in conflict areas. This is a critical oversight: women in conflict settings have less access to family planning and experience greater levels of IPV – a dangerous combination. This paper seeks to remedy this gap by investigating the relationship between IPV, both at the individual and at the community level, and contraceptive use in a conflict setting. In the following sections, we review the theoretical underpinnings to our approach; review the existing literature on IPV, family planning and conflict; and finally present the paper's key hypotheses.

1. IPV and Family Planning

There is an extensive and consistent literature documenting the relationship between intimate partner violence and poor reproductive health outcomes in the developed world, with much of this literature focused on contraceptive use (13). Far fewer studies have focused on developing country contexts, despite the far higher prevalence of IPV in these regions (1), and studies that have examined this relationship report conflicting findings. A prospective study in urban areas of South Africa and Zimbabwe confirmed the negative relationship between IPV and contraceptive use observed in more developed countries (15). Two other studies, however, challenge the applicability of these findings to the African context. In South African study, women with a history of domestic violence were *more* likely to ask their partners to use a condom (16). Similarly a cross-sectional study pooled data from six African countries and found IPV was associated with *greater* use of modern and traditional contraception (14). Possible explanations

posed by the authors include a desire to avoid pregnancy in unfavorable circumstances, a desire to protect against HIV with violent partners, and finally, that contraceptive use incited IPV (reverse causation) (14). Relatedly, studies have shown that women may fear raising the issue of contraception, lest their partner react violently (5, 17-19). A similar mechanism may be at work at the community level: women living in communities in which IPV is highly prevalent may fear reprisals if they suggest contraceptive use, regardless of prior personal experiences with IPV (20, 21). Their fear may not be unfounded: McQuestion (22) found that women living in Colombian communities characterized by high IPV were 64% more likely to experience IPV themselves, independent of individual risk factors. In a related investigation, Hung et al. (20) found that community prevalence of IPV had a similar and independent impact on birth spacing (the primary reason for contraceptive use in sub-Saharan Africa (23)). Further, Pallitto and O'Campo (2005) demonstrated the association of community-level measures of patriarchal control with the risk of unintended pregnancy (12, 22), a common correlate of IPV. Thus, there is evidence that community IPV rates influence reproductive outcomes, though studies have yet to explicitly examine contraceptive use.

2. IPV, Family Planning and Conflict

Ensuring a woman's access to family planning is all the more difficult in times of prolonged conflict or war. This is in part due to restricted supply of family planning services (e.g., health systems collapse, human resources flee) (24). Furthermore, prolonged conflict where sexual violence is widespread may have an impact on levels of violence in the community and norms surrounding gender-based violence. Living amidst armed conflict has been shown to increase IPV though multiple pathways. Even when not sanctioned, sexual violence may be a common byproduct of conflict for reasons such. Sexual violence may become 'normalized' in situations of conflict; thus increasing civilian rape and intimate partner sexual violence (IPSV) (for a review of conflict and IPV, see (25)). Finally, women who experience trauma related to the war and who

continue to experience symptoms are more likely to become a victim of IPV (26). The learned behavior of returning soldiers and civilians may likewise continue to perpetuate the epidemic of IPV even after the conflict has ended. Despite the increased risk of IPV and lowered access to family planning that accompanies violence and the ensuing disruption of health delivery systems, we know of no studies examining the relationship between the two in a conflict zone.

In the current study, we expand on the limited body of literature by testing the relationship between IPV and contraceptive use in a new country context, by considering the role of community-level IPV rates in women's modern contraceptive use, and by examining how each of these relationships may vary by conflict setting. Using nationally-representative data from the DRC, we examined the relationship between individual- and community-level IPV and modern contraceptive use. We hypothesized that (1) women with a personal history of IPV would be less likely to use contraceptives and (2) women who had not experienced IPV themselves but who lived in communities with high rates of IPV would be less likely to use modern contraceptives.

Study setting: the Democratic Republic of Congo

Our study focuses on the Democratic Republic of Congo (DRC), which may unique from other African contexts because of the role of conflict. Understanding the link between IPV and contraceptive use in the DRC is imperative because the country has one of the highest total fertility rates globally (6.3) and an estimated 36% percent of all pregnancies in the region are unplanned (27, 28). Underlying these statistics are extremely low levels of contraceptive use (7%) (29). Isolating the characteristics associated with of low contraceptive use is the first step towards designing effective interventions.

As the above review suggests, IPV may be a strong predictor. In the DRC, rates of intimate partner sexual violence (IPSV) are high (30). Rape, perpetrated by both military and civilians (UN Security Council, 2009), is also all too common: based on a 2007 survey, it was estimated

that 1.69 to 1.80 million women nationally, or between 642,000 and 704,000 in conflict-affected areas of Eastern DRC had been raped in their lifetime (30).

The DRC also provides a natural experiment for studying the role of conflict in exacerbating the relationship between IPV and contraceptive use. The country has been in a virtually continuous state of conflict since 1996, despite two peace agreements. While no region is totally removed from the consequences of this conflict, the violence has largely concentrated in the eastern region of the country, specifically in Province Orientale, Maniema, North Kivu, and South Kivu. Thus, the other regions provide a natural comparison. Existing evidence of higher IPV rates in some conflict zones (*e.g.*, North Kivu) suggests this dynamic between IPV and contraceptive use may play out more strongly in the DRC.

METHODS

Sample

Data used in this study come from the 2007 DRC Demographic and Health Survey (DHS), which was implemented by the Ministry of Planning with support from the Ministry of Health between January and August of 2007. The DHS are population-level household surveys administered by host country governments with technical assistance from ICF Macro and funding from USAID. They have been implemented in over 90 countries and routinely collect information on population, health, HIV and nutrition (www.measuredhs.com). The 2007 DRC-DHS is a multi-stage stratified cluster sample of 8,886 households. Within these households 10,338 women between the ages of 15 and 49 were interviewed regarding a range of reproductive health and child health topics. Additionally, one randomly selected woman from every other household was administered a module on domestic violence, and the analysis for the current study focuses on the domestic violence sub-sample. For the security of the interviewee, these domestic violence interviews were only conducted if privacy could be assured. Questionnaires were translated into

the four major languages spoken in DRC, namely Kikongo, Lingala, Swahili, and Tshiluba, and all interviews were conducted either in one of these four languages or in French (31).

Measures

The primary outcome for this analysis was current use of a modern contraceptive method. In the DHS, women were first asked to list contraceptive methods that they had heard about, and then asked whether they had used each method. For methods not spontaneously mentioned, women were prompted, "Have you ever heard of [Method]." Local terms with short explanations were used for the various methods, including "morning after pill" [*pilule du lendemain*] for emergency contraceptive pills. Women were not asked about use of a method if they had not previously heard of that method.

Our two main independent variables were individual-level experience of IPV and community-level means of IPV (the latter was operationalized as non-self clustered means). Women were asked whether their partner had ever done the following to them: push, shake, throw something at her; slap her, twist her arm; punch her with his fist or something that could hurt her; kick, drag or beat her up; try to choke or burn her on purpose, threaten or attaché her with a knife, gun or other weapon; forced them to have sex or perform other sexual acts. These questions were based on a modified version of the Conflict Tactics Scales (32). Additional controls included individual-level characteristics (age, education level, marital status), household-level characteristics (wealth and distance to a health facility), and community-level characteristics (urban/rural residence and region). Marital status was categorized as currently married or in union (reference), never married, and formerly married (widowed, divorced, or separated). Age was modeled as continuous in years. Education was classified as no education or incomplete primary education (reference), complete primary education, and some secondary or higher education. Household wealth was categorized into quintiles (poorest, poorer, middle, richer, richest), where poorest served as the reference category. Distance to a health facility was a

dummy variable indicating whether the woman reported she considered the distance to be a "big problem."

Statistical analyses

We ran logistic regressions with the outcome current modern contraceptive use, controlling for the aforementioned individual-, household-, and community level characteristics. In the first set of models, we examined this relationship in the full sample and then in models 2 and 3, we stratified the sample by conflict (defined as living in the following provinces of DRC: Orientale, North Kivu, South Kivu, and Maniema) and non-conflict regions.

All analyses were performed using Stata Version 11 (College Station, TX) and accounted for complex survey design and sample weights. Multi-level modeling was not necessary since the clustering occurred at only one level (i.e, the cluster/community which is the same level at which we created community-level means of IPV), and standard errors were adjusted accordingly.

PRELIMINARY RESULTS

Overall, 59% of the women surveyed reported experiencing at least one form of IPV (i.e., sexual or physical abuse by her partner; Table 1). While most of these women reported physical violence, sexual violence was also highly prevalent (reported by 32% of total women). While 78% of women knew of at least one method of modern contraception, actual use of such was low: only one fifth of women had ever used a modern contraceptive and only 4.5% were currently using one (results not shown). Use was lower among women living in communities classified as high IPV.

Multivariate logistic models testing the association between IPV and lifetime modern contractive use in the full sample are presented in Table 2. In multivariate models, individual experience of IPV was not associated with increased use of modern contraceptives overall or in the conflict region sub-sample, but community-level IPV was associated with lower odds of current contraceptive use in non-conflict regions (OR=0.25; 95%CI 0.07, 0.87).

DISCUSSION

In developing countries, there is a consistent relationship between IPV and *reduced* contraceptive use. This applicability of this relationship to the African context has been challenged (14). In contrast to this later body of work, we find evidence that IPV is associated with *decreased* contraceptive use in the DRC. The mechanisms underlying this phenomenon are not immediately clear, and we urge further exploration of this possibility using longitudinal data. We hypothesized that conflict would be an important contextual modifier of the relationship and found this to be evident; however our a priori expectations were that the relationship would play out more strongly in conflict regions. In fact, our results demonstrated that IPV was a more powerful predictor of contraceptive use among women living in non-conflict areas.

Regardless of the directionality, our findings emphasize the incredibly low access to family planning in the DRC. It is plausible that IPV may be less influential in contexts where family planning is all but non-existent. This may limit the applicability of our findings to countries with more functional health infrastructure.

Despite the above limitations, this paper makes notable contributions to the field. Evidence linking IPV to reproductive outcomes in developing countries is scant; the only existing papers on contraceptive use in sub-Saharan Africa are in conflict with each other, as well as with evidence from more developed countries. Further, to our knowledge no other study has gone beyond individual-level relationships to examine the role of community IPV norms in shaping women's contraceptive use in sub-Saharan Africa. Finally, our findings extend previous work to high-conflict areas characterized by sexual violence. By utilizing a natural experiment, we demonstrate differences in the relationship between conflict and non-conflict regions.

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Table 1. Weighted sample characteristics, Democratic Republic of Congo, 2007 (n=2855)

	Sample Distribution	
	%	SE
Total	100.0	0.0
Age		
15-24 years	28.0	1.6
25-34 years	37.1	1.7
35-49 years	34.8	1.5
Marital status		
Currently Married	87.8	1.0
Formerly Married	13.2	1.0
Education		
None/Incomplete Primary	56.7	2.6
Complete Primary Education	7.6	0.1
Some Secondary or Higher Education	35.7	2.4
Wealth		
Poorest	19.6	2.1
Poorer	23.1	2.0
Middle	20.4	1.7
Richer	18.7	2.1
Richest	18.3	2.5
Residence		
Rural	59.4	4.1
Urban	40.6	4.1
Distance to health facility		
Big problem	40.4	3.1
Not a big problem	0.6	0.0
Conflict zone		
Conflict region	24.8	3.7
Non-conflict region	75.2	3.8
Province		
Bandundu	14.0	3.7
Bas-Congo	4.1	1.0
Equateur	13.1	3.0
Kasaï Occidental	9.7	2.4
Kasaï Oriental	17.2	2.9
Katanga	10.3	2.2
Maniema	3.3	0.8
North Kivu	3.5	1.1
Province Orientale	13.5	3.5
South Kivu	4.5	1.6

Table 2. Logistic regression of current contraceptive use and intimate partner violence, Democratic Republic of Congo, 2007 (n=2855)

	(1)	(2)	(3)
	All (n=2855)	Conflict (n=968)	Non-conflict (n=1887)
Ever experienced any IPV	1.08	1.40	0.96
	(0.64 - 1.80)	(0.62 - 3.16)	(0.51 - 1.83)
Community-level mean of IPV (continuous)	0.46	2.96	0.25*
	(0.17 - 1.22)	(0.52 - 16.77)	(0.07 - 0.87)
Marital status (ref = Currently Married)			
Formerly Married	0.96	0.66	1.11
	(0.49 - 1.89)	(0.17 - 2.59)	(0.52 - 2.34)
Age	1.01	1.01	1.02
	(0.99 - 1.04)	(0.99 - 1.04)	(0.98 - 1.05)
Education (ref = None/Incomplete Primary)			
Complete Primary Education	1.61	0.42	2.18
	(0.68 - 3.83)	(0.11 - 1.58)	(0.76 - 6.22)
Some Secondary or Higher Education	2.63**	1.93	3.00***
	(1.44 - 4.80)	(0.79 - 4.69)	(1.58 - 5.71)
Wealth (ref = Poorest)			
Poorer	0.99	0.23	2.10
	(0.33 - 2.97)	(0.04 - 1.25)	(0.59 - 7.44)
Middle	1.40	0.92	2.03
	(0.57 - 3.46)	(0.26 - 3.23)	(0.64 - 6.40)
Richer	1.45	1.27	1.47
	(0.41 - 5.19)	(0.35 - 4.58)	(0.26 - 8.46)
Richest	3.38	4.22	2.51
	(0.82 - 13.95)	(0.99 - 17.92)	(0.45 - 13.84)
Urban	1.38	1.00	1.55
	(0.56 - 3.43)	(0.42 - 2.36)	(0.36 - 6.61)
Distance to health facility=big problem	0.94	0.98	1.02
	(0.57 - 1.53)	(0.43 - 2.21)	(0.58 - 1.80)
Province (ref=Kinshasa)			
Bandundu	1.93		
	(0.55 - 6.83)		
Bas-Congo	2.09*		
	(1.14 - 3.85)		
Equateur	2.84*		
	(1.02 - 7.90)		
Kasaï Occidental	0.77		
	(0.17 - 3.56)		
Kasaï Oriental	0.38		
	(0.11 - 1.28)		
Katanga	1.31		
	(0.60 - 2.88)		
Maniema	3.21**		
	(1.37 - 7.49)		
North Kivu	7.59***		
	(2.79 - 20.64)		
Province Orientale	1.62		
	(0.59 - 4.46)		
South Kivu	4.33**		
	(1.55 - 12.11)		

*** p<0.001, ** p<0.01, * p<0.05; 95% Confidence Intervals in parenthesis