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Contraception, reproductive health and pregnancy outcomes among women exposed to intimate partner violence in Nigeria

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ABSTRACT

Objectives To examine the association between reproductive health practices/outcomes and exposure to intimate partner violence (IPV) among women in Nigeria. More specifically, the association between IPV and use of contraception; miscarriages, induced abortions, stillbirths, and infant mortality; and having many children, was assessed.

Methods Data on studied variables were retrieved from the Demographic and Health Surveys of Nigeria 2008, a nationally representative sample of 33,385 women of reproductive age. IPV was defined as exposure to physical, sexual or emotional abuse. The association between contraception use, pregnancy outcomes and infant mortality, and exposure to IPV was assessed using the chi-square test for unadjusted analyses. To control for potential confounding, socio-demographic variables were adjusted for using multiple logistic regression.

Results Compared with women not exposed to IPV, those who were, exhibited a higher likelihood of using modern forms of contraception; having a history of miscarriages, induced abortions, stillbirths, or infant mortality; and having many children. The aforementioned observations still stood after adjustment for potential confounders (e.g., demographic and socioeconomic factors).

Conclusion Though causal inference cannot be drawn due to the cross-sectional design, the study has important implications for incorporation of IPV detection and management in initiatives aimed at improving women's reproductive health.

KEYWORDS Intimate partner violence; Contraception; Reproductive health outcomes; Nigeria

INTRODUCTION

Background

Intimate Partner Violence (IPV) is defined as a pattern of assaultive and coercive behaviours including physical, sexual and psychological attacks as well as economic coercion that adults or adolescents use against their intimate partners[1]. IPV against women has been linked to negative health outcomes,

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including physical injury, psychosocial morbidity and adverse reproductive health[2–7].

In 2000, a set of Millennium Development Goals (MDGs) to be achieved by 2015 were adopted by leading world organisations including the World Health Organisation (WHO). Two of these MDGs focus on improving maternal and child health[8]. One of the strategies proposed to improve maternal health is the prevention of unwanted pregnancies through the use of contraception and access to safe abortion[9–11]. But data on male partners' reactions to and perceptions on the use of contraception by women are contradictory. While in some settings contraception use has been associated with a likelihood of IPV[12–14], in others the opposite has been observed (i.e., a lower likelihood of aggression directed towards women using contraception in contrast to peers not applying contraception)[15]. Other studies show a lower likelihood of contraceptive use among women exposed to IPV[16]. These findings suggest that perceptions and reactions to contraception and the latter's implication for women's safety thus vary depending on the culture, warranting investigation in each unique setting.

IPV has also been linked to negative reproductive health outcomes such as unintended pregnancies, miscarriages, induced abortions, stillbirths, poor attendance of prenatal care, infant mortality, low utilisation of family planning (FP) methods, and HIV/AIDS[17–19]. Discrepancies depending on the societal/cultural contexts were not studied. However, limited data from Sub-Saharan Africa in this regard are on record. The lifetime IPV prevalence of between 25% and 48%, adds to African women's high risk of poor reproductive health outcomes due to the low quality of reproductive healthcare[19,20–25]. In this study, the association between IPV exposure and reproductive health outcomes is assessed among women in Nigeria.

Reproductive health practices, outcomes, and beliefs in Nigeria

According to recent statistics, there is a widespread knowledge of contraceptive methods among men (90%) and women (72%) in Nigeria. About 29% of all women have used contraception at some time, with a higher proportion of modern methods having been used than of traditional methods. The total fertility rate (TFR) is 5.7 births per woman[26]. However, rural areas have a much higher TFR (6.3) than urban areas (4.7). With regard to child spacing, 8% of births are less than eighteen months apart and 24% have an interval of less than two years. This may be due in part to the culture of having many children, especially boys, for the purpose of succession and carrying on the family name. This belief in the male child is further strengthened by the breadwinner system and inheritance rights which cuts out or limits daughters' rights to inherit parents' properties[27,28].

Although causality cannot be ascertained due to the design of previous studies, their results show a possible link between IPV and cultural practices and beliefs in Nigeria[28,29]. The relationship between IPV and reproductive health outcomes in Nigeria deserves further recognition considering the current prevalence rate of 29–31%[25,29] and the fact that wife-beating is endorsed[30]. The implementation of the MDG's related to maternal and child health will most likely benefit from incorporating an understanding of the association between reproductive health practices and outcomes on the one hand and IPV on the other.

The current study investigates the association between exposure to IPV and:

- reproductive health outcomes; and
- the use of modern and traditional methods of contraception.

MATERIALS AND METHODS

Study design

This study is based on the Nigerian Demographic and Health Survey (NDHS) of 2008[26]. The NDHS covers a nationally representative sample of more than 36,000 households based on the 2006 Population and Housing Census of the Federal Republic of Nigeria. A stratified two-stage sampling design was used to select the NDHS 2008 sample which consists of 888 clusters, 286 in urban, and 602 in rural areas. Thereafter an average of 41 households was selected in each cluster, by equal probability systematic sampling. A detailed description of the sampling method is reported in the 2008 NDHS final report.

Participants

All women aged 15–49 years, including permanent residents of the households or visitors present in the

households on the night before the survey, were eligible to be interviewed. The domestic violence module was administered to a subsample of 34,596 women, made up of one randomly selected eligible woman in each household. A response rate of 96.5% was obtained, corresponding to 33,385 interviewed women.

Questionnaire

A comprehensive questionnaire, covering demographic and health issues, was administered to each eligible woman after a written informed consent had been obtained. The aspects covered included the women's background, reproductive health, access to reproductive health facilities, fertility preferences, child care and nutrition, child mortality, awareness of and precaution against sexually transmitted infections, marriage, sexual behaviour, and domestic violence. The questions on reproductive health and domestic violence are the main interest for this study.

Measures

Dependent variables

Pregnancy was assessed by asking participants whether they were currently pregnant. *Pregnancy wish* was determined by asking pregnant women if their current pregnancy was desired or if they had desired to wait until later. The *total number of births* was determined by asking how many births the participating women had ever had. *Desire for the last child* was determined by probing participants about whether the last child was desired then or later. *Infant mortality* was assessed by asking respondents if they had ever had a child who died before age one. Data on *miscarriages, induced abortions*, *and stillbirths* were obtained by probing participants on whether they had ever experienced a pregnancy that miscarried, was aborted or ended in a stillbirth. *Contraceptive use* was assessed by probing participants on usage of various contraceptives including folk, traditional (i.e., withdrawal, rhythm and lactational amenorrhoea) or modern methods (i.e., intrauterine devices, pills, male and female condoms, spermicides, and injectables). Many of these variables had dichotomous response alternatives (i.e., 'yes' or 'no' responses).

Independent variables

Exposure to IPV was determined using a modified version of the Conflict Tactic Scale (CTS)[31], which inquires whether participants have, since the age of 15 years and during the past twelve months, experienced abuse perpetrated by the current husband/partner. Experience of IPV in the past twelve months was of primary interest for this study. *Exposure to physical IPV (in the past year)* was defined as being slapped, kicked, bitten, pushed, punched, choked, burnt on purpose, or assaulted using a knife or other weapons. *Exposure to sexual IPV (in the past year)* was defined as having been physically forced to have sexual intercourse when not wanting to; degrading or humiliating sexual acts, or engaging in sexual intercourse out of fear. *Exposure to emotional IPV (in the past year)* was determined as having been exposed to verbal abuse or insults; made to feel bad about oneself; belittled in front of other people; scared or intimidated; threatened with violence or confronted with threats that loved ones would be harmed. The response alternatives for the IPV measures where dichotomous (i.e., 1 = no; 2 = yes).

Socio-demographic variables collected included (response alternatives are presented in parentheses): age; education (1 = none, 2 = primary, 3 = secondary, 4 = higher); religion (1 = Catholic, 2 = other Christian, 3 = Moslem, 4 = other); ethnicity (1 = Hausa/Fulani, 2 = Yoruba, 3 = Ibo, 4 = other); place of residence (1 = urban, 2 = rural); region (1 = north central, 2 = north east, 3 = north west, 4 = south east, 5 = south west, 6 = south).

Statistical analyses

Data input and analysis were done using the SPSS programme version 15.0. The chi-square test was used to test for associations between IPV and the independent variables in the univariate analyses. The independent association between IPV exposure and the dependent variables (after control for potential confounding) was determined using logistic regression. Direction and magnitude of the associations were expressed as adjusted odds ratio (AOR). The significance level for all tests was set at $p < 0.05$.

Ethical aspects

Approval for conducting the 2008 NDHS was granted by the Institutional Review Board of Macro International. This US institution is responsible for ethical scrutiny and providing technical assistance for conducting demographic and health surveys. Permission to use the NDHS data was granted by MEASURES DHS while ethical approval for the study was granted by the Nigerian Institute of Medical Research (NIMR).

RESULTS

The results of this study show IPV is linked to miscarriages, abortion, stillbirths, having more children, and infant mortality. Concerning their desire for the current and previous pregnancies, women exposed to violence were more likely to report that they would have preferred to stop having children or to wait till a later time. The results also show that women using modern forms of contraception are more exposed to physical IPV than those not using contraception at all or using traditional and folk methods.

Table 1 shows the total proportion of women exposed to IPV in the past year, by reproductive health indicators. Higher proportions of women who had undergone induced abortions, or had miscarriages and/or stillbirths than among those who had had no such pregnancy outcomes reported having experienced physical (20% vs. 14%), sexual (6% vs. 3%) or emotional abuse (30% vs. 22%). Also, more women using modern contraceptives than non-users and women applying traditional contraceptive methods stated they had experienced physical IPV (21% vs. 15%). There were no significant associations between using modern contraceptives and either sexual or emotional IPV.

Table 1 Reproductive health outcomes among women exposed to intimate partner violence (IPV) in Nigeria

	Physical IPV				*Sexual IPV*				*Emotional IPV*			
Variables	*N*	*n*	*%*	*p-value*	*N*	*n*	*%*	*p-value*	*N*	*n*	*%*	*p-value*
Miscarriages/ stillbirths/abortions				0.000				0.000				0.000
No	16,678	2379	14.3		16,669	522	3.1		16,674	358	21.5	
Yes	2532	514	20.3		2530	138	5.5		2532	747	29.5	
Contraceptive use				0.000				0.646				0.405
None/traditional/folk	17,760	2585	14.6		17,750	607	3.4		17,755	3990	22.5	
Modern Methods	1482	311	21.0		481	54	3.6		482	347	23.3	
Total births				0.000				0.016				0.000
0–4 children	12,232	1749	14.3		12,226	391	3.2		2,228	2519	20.6	
5 children or more	7010	1147	16.4		7005	270	3.9		7009	1818	25.9	
Wanted last child				0.000				0.000				0.000
Wanted then	12,221	1761	14.4		12,216	392	3.2		2,216	2739	22.4	
Later/not at all	1289	321	24.9		288	107	8.3		1290	403	31.2	
Pregnant now				0.016				0.824				0.082
No/not sure	16,478	2522	15.3		16,468	568	3.4		16,472	3749	22.8	
Yes	2764	374	13.5		2763	93	3.4		2765	588	21.3	
Wanted current pregnancy				0.000				0.000				0.000
Wanted then	2307	289	12.5		2306	65	2.8		2306	451	19.6	
Later/not at all	313	76	24.3		313	21	6.7		315	90	28.6	
At least one dead child				0.002				0.005				0.000
No	12,293	1776	14.4		12,287	388	3.2		12,288	2469	20.1	
Yes	6949	1120	16.1		6944	273	3.9		6949	1868	26.9	

Similarly women who had wished to have their last child later were more likely to have reported physical, sexual and emotional violence than those who had desired their last child then. Women with five or more children reported physical, sexual and emotional abuse to a higher extent than peers with at most four children. Pregnant women where less likely to have experienced physical violence during the past twelve months than women who were not pregnant or were not sure of their pregnancy status. Finally, a history of infant mortality was more common among women who reported having been physically, sexually or emotionally abused than not abused peers.

Table 2 shows the unadjusted odds ratios of IPV and reproductive health outcomes depicting a greater likelihood of poor reproductive health outcomes among women exposed to physical, sexual or emotional IPV.

As shown in Table 3, even after adjusting for socio-demographic factors (i.e., age, education, religion, ethnicity, place of residence, and region), exposure to IPV remained significantly associated with adverse reproductive health outcomes, except for the associations between emotional violence and pregnancy status; sexual violence and contraceptive use; and sexual violence and pregnancy status.

Table 2 Unadjusted odds ratios for intimate partner violence (IPV) vs. reproductive health outcomes

	Miscarriage/ abortion/stillbirth		*Contraceptive use*		*Total births*		*Wanted last child*		*Pregnant now*		*Wanted current pregnancy*		*At least one dead child*	
Variable	*c OR (CI)*	*p-value*	*c OR (CI)*	*p-value*	*c OR (CI)*	*p-value*	*c OR (CI)*	*p-value*	*c OR (CI)*	*p-value*	*c OR (CI)*	*p-value*	*c OR (CI)*	*p-value*
Physical IPV (No vs. Yes)	0.653 (0.587–0.726)	0.000	0.641 (0.562–0.732)	0.000	0.853 (0.786–0.925)	0.000	0.508 (0.443–0.582)	0.000	1.155 (1.027–1.298)	0.016	0.447 (0.335–0.595)	0.000	0.879 (0.810–0.953)	0.002
Emotional IPV (No vs. Yes)	0.654 (0.596–0.718)	0.000	0.948 (0.836–1.075)	0.405	0.741 (0.691–0.794)	0.000	0.636 (0.561–0.721)	0.000	1.091 (0.989–1.203)	0.082	0.608 (0.466–0.792)	0.000	0.684 (0.638–0.733)	0.000
Sexual IPV (No vs. Yes)	0.560 (0.462–0.679)	0.000	0.936 (0.705–1.242)	0.646	0.824 (0.704–0.965)	0.016	0.366 (0.293–0.457)	0.000	1.026 (0.821–1.282)	0.824	0.403 (0.243–0.670)	0.000	0.797 (0.681–0.933)	0.005

cOR = crude odds ratio; CI = 95% confidence interval

DISCUSSION

The study sought to investigate the association between IPV and some aspects of reproductive health practices and outcomes, foremost pregnancy outcomes and contraceptive use. There was a greater likelihood of contraceptives use among victims of IPV corroborating results of some previous studies[12–14], but not of others indicating either a lower likelihood of contraceptives use among IPV victims[15,16,21] or the absence of significant associations[32]. The discrepancy in findings likely reflects differences in society perceptions of reproductive health practices. There thus is a need for assessing in each unique societal setting prevailing views on contraception and how these may be related to IPV. This is important in order to avoid unwarranted duplication of interventions, as a successful intervention in one setting, may not necessarily yield similar results in another. The reasons why Nigerian women's use of contraception is related to an increased likelihood of IPV exposure could stem from the patriarchal nature of the society. Studies from

Table 3 Adjusted odds ratios physical intimate partner violence (IPV) vs. reproductive health outcomes

	Miscarriage/abortion/ stillbirth		*Contraceptive use*		*Total births*		*Wanted last child*		*Pregnant now*		*Wanted current pregnancy*		*At least one dead child*	
Variable	*p-value*	*OR (CI)*	*p-value*	*OR (CI)*	*p-value*	*OR (CI)*	*p-value*	*OR (CI)*	*p-value*	*OR (CI)*	*p-value*	*OR (CI)*	*p-value*	*OR (CI)*
Physical IPV	0.687	(0.785–1.322)	0.792	(0.687–0.912)	0.828	(0.742–0.923)	0.667	(0.576–0.771)	1.163	(1.027–1.316)	0.546	(0.401–0.745)	0.846	(0.771–0.928)
(No vs. Yes)	0.000		0.001		0.001		0.000		0.017		0.000		0.000	
Emotional IPV	0.702	(0.637–0.774)	0.852	(0.743–0.977)	0.799	(0.728–0.878)	0.647	(0.566–0.740)	1.090	(0.984–1.208)	0.630	(0.475–0.834)	0.755	(0.699–0.819)
(No vs. Yes)	0.000		0.022		0.000		0.000		0.099		0.001		0.000	
Sexual IPV	0.613	(0.502–1.107)	0.952	(0.708–1.282)	0.699	(0.565–0.865)	0.427	(0.337–0.541)	1.076	(0.854–1.356)	0.429	(0.250–0.736)	0.798	(0.670–0.951)
(No vs. Yes)	0.000		0.748		0.001		0.000		0.536		0.002		0.011	

Adjusting for age, education, religion, ethnicity, place of residency (i.e., urban or rural), and region. CI = 95% confidence interval

other patriarchal societies have suggested that contraception is viewed by men as an attempt by the female partner to take a more active role in sexual decisions, consequently conferring to her autonomy over decisions that are seen in such societies as being a masculine prerogative[33–36.] This attempt at emancipation may thus be countered by aggressions by the partner. However, the study designs used in this and previous surveys do not allow for causal conclusions to be drawn. Whether contraception use preceded IPV or was a consequence of IPV exposure remains elusive. Whatever the case, such data indicate the need for incorporating IPV sensitive policies in the management and improvement of women's reproductive health. One of the strategies proposed to improve maternal health consists in allowing women to prevent unwanted pregnancies, which invariably implies the use of contraception. Yet, our findings and others highlighting a link between contraception use and IPV exposure reveal dilemmas with regard to applying this strategy. Therefore, any agenda to improve the reproductive health practices and outcomes in Nigeria must incorporate a policy on managing IPV. Also, the nature, scope and eventual success of any sensitisation initiatives to manage women's reproductive health will benefit from the involvement of the male partners, being the potential perpetrators of IPV. Currently, most programmes (e.g., FP programmes) focus mainly on sensitisation of women, necessitating re-adaptation to suit both partners.

In line with previous research in the field[14,17–19], this study found strong associations between exposure to IPV in all its forms (physical, sexual and emotional) and adverse reproductive health outcomes such as stillbirths and infant mortality, again strengthening the case for adopting policies and strategies incorporating domestic violence when confronting issues pertaining to maternal and child health. In addition, the strong link between IPV and undesired pregnancy together with the lower likelihood of IPV among pregnant compared to non-pregnant respondents found in our study is a plausible indication of societal preferences among men of their desire to have children. Any interruption of the child bearing process (e.g., through induced abortion or failure to conceive), may elicit IPV as is implicated by our findings and those of others[37].

The strength of this study lies in its methodology. A considerable number of women, representative of the

Nigerian population, were carefully sampled providing a base for generalisation of the findings to that context. Secondly, the execution of the analyses allowed for measurable confounders to be controlled for. Thus, any associations observed are free of contamination by other factors known to be related both to IPV and to reproductive health outcomes. A potential shortcoming of this study lies in its design. It is difficult to explicitly or otherwise assign causality with cross-sectional data. For instance, while IPV may have been a reaction to contraception use, it is as likely that contraception use was a consequence of abuse. Likewise, it is not possible to determine whether outcomes such as miscarriages and stillbirths resulted from IPV exposure, or whether IPV exposure was a consequence of such outcome. The findings should therefore be viewed as associations with limited implications of causality.

In conclusion, our study provides important baseline data linking exposure to IPV to modern reproductive health practices and adverse reproductive health outcomes in Nigeria. Though causal inference cannot be drawn due to the cross-sectional design, the study has important implications for policy and education concerning the management of women's reproductive health. Such initiatives should acknowledge, detect and manage IPV; they may benefit from involving the male partner, the usual perpetrator of such assaults. Studies of longitudinal design are warranted to establish whether there is a causal relationship between IPV and reproductive health practices and outcomes.

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