Questions about intimate partner violence should be part of contraceptive counselling: findings from a community-based longitudinal study in Nicaragua

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Abstract

Background and methodology The study aim was to examine whether exposure to intimate partner violence (IPV) was associated with reversible contraceptive use in ever-pregnant partnered women. The authors conducted a longitudinal panel study in León municipality, Nicaragua. At baseline (2002–2003), 478 pregnant women were interviewed and 398 were available for questioning about contraceptive use 40–47 months after childbirth. IPV was assessed at baseline and follow-up, with women classified as never abused, ending abuse, continued abuse or new abuse. Reversible contraceptive use was defined as women using any form of contraception apart from sterilisation. Adjusted odds ratios (AORs) were used to assess the association between reversible contraceptive use, IPV patterns and IPV exposures at follow-up.

Results Eighty percent of the women were not pregnant and with a partner at follow-up. Half were using reversible contraceptives and 28% were sterilised. Women exposed to a continued abuse pattern (AOR 2.50, 95% CI 1.04–5.99), and those exposed to emotional (AOR 2.80, 95% CI 1.32–5.95), physical (AOR 3.60, 95% CI 1.15–11.10) or any IPV at follow-up (AOR 2.59, 95% CI 1.24–5.40) had higher odds of reversible contraceptive use than those not exposed, even after adjusting for demographic factors. No significant differences in the type of reversible contraceptive used were found between women exposed or not to IPV.

Discussion and conclusions IPV exposure was associated with more reversible contraceptive use. Abuse inquiring at health facilities providing contraceptives should be implemented to identify women exposed to IPV and provide adequate support.

Key message points

- Women exposed to a continued pattern of intimate partner violence (IPV) have higher odds of using reversible contraceptives than those never abused.
- Women exposed to emotional, physical or any IPV at follow-up have higher odds of reversible contraceptive use than those not exposed.

Introduction

Control of their own fertility is a key issue for women, since early pregnancies[1] and multi-parity[2 3] have been associated with poor women's health and higher mortality. Recent evidence has shown that women are frequently exposed to intimate partner violence (IPV)[4] and that those exposed to a continuous pattern of IPV have significantly higher parity than those ending abuse or never abused.[5] Women exposed to IPV are also less likely to have control over their own fertility[6–8] and could remain several years in a violent relationship before abuse cessation or final separation.[5 9]

Unintended pregnancies and abortions are important indicators of diminished control over fertility in abused women. Cross-sectional studies in clinical settings in Peru[6] and the USA[7] have found a positive association between physical and sexual IPV and unintended pregnancies. In addition, recent evidence from one community-based study in a national sample of Bangladeshi women found that women exposed to physical IPV had 1.54 times higher odds of having an unwanted pregnancy in the past 5 years than those

not exposed.[8] Not surprisingly, the same study also found a significant association between physical IPV and pregnancy loss (spontaneous abortion, induced abortion or stillbirth).

Induced abortions have been associated with reproductive control exerted by a violent partner. One study in the USA found that men who had acknowledged their physical abuse of their female partner were more often involved in induced abortions than non-abusive men, either promoting or restricting their partner's use of abortion services.[10] Furthermore, a recent multi-country study found that women ever exposed to physical or sexual IPV had a 2.4 times higher odds of having experienced an induced abortion than women not exposed.[4]

Although, as stated above, women exposed to IPV have a higher frequency of unwanted pregnancy and induced abortion, they also seem to use more contraception. Population-based studies in sub-Saharan Africa[11 12] and New Zealand[13] found that women's exposure to different forms of IPV (emotional, physical and sexual in sub-Saharan Africa and physical/sexual in New Zealand) were associated with higher contraceptive use. This complex relationship between IPV, contraceptive use and negative reproductive outcomes might be explained by the fact that women's consistent and effective contraceptive use can be undermined by a partner's sabotage of birth control methods,[14 15] by unprotected forced sex,[15] diminished use of the woman's preferred birth control method,[16] or condom use at last intercourse.[17]

In Nicaragua, the percentage of women using some form of contraception has been rising consistently since 1990, while the gap between urban and rural access to contraception has diminished rapidly.[18] Public health services offering contraceptives are widely accessed, meaning that there is a significant percentage (72%) of women of reproductive age using contraception.[18] Nicaraguan women also are frequently exposed to IPV. The lifetime prevalence of physical IPV among ever-married women is around 52%,[19] and three out of ten pregnant women have experienced some form of IPV during their current pregnancy.[20] Nicaraguan women may also experience different temporal patterns of IPV exposure.[5] The aim of the present study was to examine whether exposure to IPV is associated with reversible contraceptive use in ever-pregnant partnered Nicaraguan women. In addition, we examined whether the type of contraceptive used varied by residency and IPV exposure.

Methods

Study design

We conducted a longitudinal panel study in León municipality, Nicaragua. At baseline (2002–2003), 478 pregnant women were interviewed about their IPV experiences during pregnancy and 398 were available for questioning 40–47 months after childbirth. Participants were selected from a Health and Demographic Surveillance System that includes 54 647 persons living in 50 randomly chosen urban and rural clusters.[21] The selection process has been described elsewhere.[20] No significant differences in age, education, residency, parity, controlling behaviour by partner or emotional, physical and sexual IPV during pregnancy were found between women contacted or not contacted at follow-up ($p>0.05$) (data not shown).

Measurements

We measured emotional, physical and sexual IPV, controlling behaviour by partner and contraceptive use using a modified version of the questionnaire from the World Health Organization (WHO) Multi-Country Study on Women's Health and Domestic Violence.[4] The section measuring IPV was constructed as a Conflict Tactics Scale,[22] describing different actions that a violent man can do to his female partner. These actions were later categorised as emotional IPV (yelling, humiliation, intimidation and threats), physical IPV (slaps, pushes, punches, kicks, strangulation and use of weapons) and sexual IPV (use of force, threats or intimidation to have sexual relations with the woman).[4] In our study, all IPV scales showed good reliability with high Cronbach's alpha (α) values for emotional (0.83), physical (0.89) and sexual IPV (0.82).

At baseline, we measured whether IPV exposure had occurred during the woman's lifetime and during pregnancy. At follow-up, we measured whether IPV had occurred in the 12 months prior to interview. With these exposures we constructed a new variable describing four IPV patterns: never abused (not abused at baseline and not abused at follow-up), ending abuse (abused at baseline but not at follow-up), continued abuse (abused at baseline and at follow-up) and new abuse (abused only at follow-up).

To measure controlling behaviour by a woman's partner at baseline and follow-up we used a seven-item scale describing the following partner actions: if he restricted her contact with friends, if he restricted her contact with family, if he insisted on knowing her whereabouts at all times, if he ignored her and treated her indifferently, if he became angry if she spoke to another man, if he was constantly suspicious that she was unfaithful, and if he expected her to ask his permission to seek health care for herself. Items in the scale were then dichotomised into no controlling behaviours or between one and seven controlling behaviours.

We asked women contacted at follow-up whether they were currently using some form of contraception. We considered the most common methods used in Nicaragua [oral contraceptive, injectable contraceptive, intrauterine device (IUD), condom, calendar-rhythm method, withdrawal and female sterilisation] and asked about other methods. However, none were reported. In Nicaragua, permanent contraceptive methods, such

as sterilisation, are frequently used by women with higher parity and after delivery, thus they are less likely to represent women's response to partner abuse, whereas reversible contraceptive methods could represent more accurately women's response. We defined reversible contraceptive use as women currently using any form of contraception apart from female sterilisation. Furthermore, we explored whether the woman's partner agreed to her contraceptive use and, if he did not, in what way he expressed his disagreement.

In addition, we collected information on the women's age (in years), residency (urban, rural), education (≤3rd grade, >3rd grade), parity (1, ≥2), marital status (alone, partner) and socioeconomic status (poor, non-poor).

We assessed socioeconomic status using the Unsatisfied Basic Needs Assessment method, which has been validated in Nicaragua.[23] The index measured four indicators of family socioeconomic conditions: inadequate housing (if the family home had a dirt floor or walls constructed of materials other than cement), low school enrolment (if there was a child of school age in the household but not in education), highly dependent economy (if the ratio between non-working and working persons in the household was higher than one) and inadequate sanitary conditions (no piped water inside the house or no flush toilet). A household was considered poor if it had two or more of these indicators. The data were collected by two trained female interviewers. All questionnaires were reviewed in the field and returned to the field for rectification if they had any inconsistencies.

Analysis

We used the Statistical Package for Social Sciences Version 15 (SPSS Inc., Chicago, IL, USA) to analyse the data. The women's ages were not normally distributed (Kolmogorov-Smirnov test $p<0.05$); therefore we used the median value and interquartile range (IQR) to describe this, and the Mann-Whitney *U* test to compare median values between groups. Chi-square (χ^2) and Fisher's exact tests were used to compare proportions between groups.

We used logistic regression to obtain odds ratios (ORs) and 95% confidence intervals (CIs) for the association between IPV patterns, IPV exposures at follow-up and reversible contraceptive use adjusted by women's residency, educational level, parity, socioeconomic status and age. Controlling behaviour by a partner was considered an intermediate factor and

Table 1 Comparison of women's characteristics and intimate partner violence exposure, stratified by marital and pregnancy status (not pregnant with partner vs not pregnant without partner and pregnant) (*n*=398)

	All women (*n*=398)					
	Not pregnant with partner (*n*=317)		Not pregnant without partner (*n*=50)		Pregnant at follow-up (*n*=31)	
Characteristic	***n***	**%**	***n***	**%**	***n***	**%**
Mother's age in years [median (IQR)]	27.0	(23–32)	25.5	(23–31)	27.0	(24–29)
Residency: Rural	101	32	18	36	7	23
Mother's education: ≤3rd grade	144	45	21	42	15	48
Parity: ≥2	202	64	25	50	19	61
Socioeconomic status: Poor	180	57	32	64	18	58
Any IPV previous pregnancy:* Yes	108	34	14	28	6	19
Emotional IPV previous pregnancy: Yes	107	34	14	28	6	19
Physical IPV previous pregnancy: Yes	42	13	4	8	1	3
Sexual IPV previous pregnancy: Yes	22	7	4	8	1	3
Controlling behaviour by partner previous pregnancy: Yes	173	55	26	52	19	61
Any IPV at follow-up:* Yes	103	32	9	18†	10	32
Emotional IPV at follow-up: Yes	98	31	9	18	10	32
Physical IPV at follow-up: Yes	50	16	3	6	5	16
Sexual IPV at follow-up: Yes	28	9	3	6	1	3
Controlling behaviour by partner at follow-up: Yes	160	50	1	2†	11	35
IPV pattern						
Never abused	108	34	21	42	12	38
Ending abuse	106	33	20	40	9	29
Continued abused	81	26	6	12	7	23
New abuse	22	7	3	6	3	10

*Any emotional, physical or sexual IPV.
†Chi-square (χ^2) or Fisher's exact test, $p<0.05$.
IPV, intimate partner violence; IQR, interquartile range.

thus not included in the models. All analyses were considered significant if $p<0.05$.

Ethical considerations

The study protocol was approved by the Ethics Research Committee of León University. In data collection and analysis, we followed WHO ethical guidelines for research on domestic violence.[24] We trained the interviewers to obtain written informed consent, to treat women with empathy, and to listen without expressing judgment. In addition, we had weekly debriefings with the interviewers to relieve stress. A leaflet was provided to all women detailing different locations where they could obtain legal and psychological help free of charge.

Results

Characteristics of the women

The median age of the women was 27 (IQR 23–31) years. Some 32% (126/398) lived in a rural area, 45% (180/398) had less than 3 years of education, 62% (246/398) had more than one child and 58% (230/398) were classified as poor.

Exposure to IPV was common. At baseline, 54% (217/398) reported any lifetime IPV, with 53% (212/398) exposed to emotional IPV, 31% (123/398) to physical IPV and 15% (59/398) to sexual IPV. IPV during pregnancy was also common at baseline. Thirty-two percent (128/398) reported some kind of IPV during pregnancy, with 32% (128/398) emotional, 13% (52/398) physical and 7% (27/398) sexual. At follow-up, 31% (122 /398) reported some kind of IPV in the previous 12 months: 29% (117/398) emotional, 15% (58/398) physical and 8% (32/398) sexual.

The participants presented different marital and pregnancy statuses at follow-up, with 80% (317/398) of the women not pregnant and with a current partner. Twelve percent (50/398) were not pregnant and without a partner and 8% (31/398) were pregnant. Of the women not pregnant and with a partner, 91% (290/317) had the same partner at baseline and follow-up, with a similar outcome reported by currently pregnant women (26/31).

Nineteen of the 31 currently pregnant women wished to be pregnant; seven wanted to be pregnant but not at that time, and five did not want to be

Table 2 Women's characteristics and intimate partner violence exposure: comparison between partnered women not using any form of contraception, partnered women using reversible contraceptives and sterilised partnered women (not using vs using and sterilised women) (n=317)

	Forms of contraception among partnered non-pregnant mothers (n=317)					
	None (n=63)		Reversible contraceptives* (n=164)		Sterilisation (n=90)	
Characteristic	***n***	**%**	***n***	**%**	***n***	**%**
Mother's age in years [median (IQR)]	26.0	(23–31)	25.0	(22– 29)	31.0†	(27–34)
Residency: Rural	15	24	64	39‡	22	24
Mother's education: ≤3rd grade	26	41	79	48	39	43
Parity: ≥2	32	51	85	52	85	94‡
Socioeconomic status: Poor	37	59	93	57	50	56
Any IPV previous pregnancy:§ Yes	19	30	62	38	27	30
Emotional IPV previous pregnancy: Yes	19	30	62	38	26	29
Physical IPV previous pregnancy: Yes	9	14	29	18	9	10
Sexual IPV previous pregnancy: Yes	3	5	12	7	7	8
Controlling behaviour by partner previous pregnancy: Yes	33	52	96	59	44	49
Any IPV at follow-up:§ Yes	12	19	61	37‡	30	33
Emotional IPV at follow-up: Yes	11	17	60	36‡	27	30
Physical IPV at follow-up: Yes	4	6	30	18‡	16	18‡
Sexual IPV at follow-up: Yes	3	5	15	9	10	11
Controlling behaviour by partner at follow-up: Yes	24	38	87	53‡	49	54‡
IPV pattern						
Never abused	29	46	53	32	26	29‡
Ending abuse	22	35	50	30	34	38
Continued abused	10	16	51	31‡	20	22
New abuse	2	3	10	7	10	11

*Any method apart from female sterilisation.
†Mann-Whitney U test, $p<0.05$.
‡Chi-square (χ^2) or Fisher's exact test, $p<0.05$.
§Any emotional, physical or sexual IPV.
IPV, intimate partner violence; IQR, interquartile range.

Table 3 Type of reversible contraceptive use* among women not pregnant and with a partner stratified by residency (n=164)

	Women not pregnant and with a partner (n=164)				
	Rural (n= 64)		Urban (n=100)		
Type of reversible contraceptive use	***n***	**%**	***n***	**%**	***p*†**
Oral contraceptive	19	30	28	28	0.81
Injectable contraceptive	35	54	31	31	<0.001
Intrauterine device	1	2	20	20	<0.001
Condom	7	11	14	14	0.56
Calendar-rhythm method	2	3	2	2	0.67
Withdrawal	–	–	5	5	–
Total	64	100	100	100	

*Any method apart from female sterilisation.
†Chi-square (χ^2) test or Fisher's exact test.

pregnant. Twenty-two of the 31 currently pregnant women reported that their partners also wished them to be pregnant.

When we compared the demographic characteristics and IPV exposures of the women not pregnant with a current partner with the other groups we found few significant differences. Women not pregnant without a partner reported less controlling behaviour by their partners and less exposure to any IPV at follow-up than those not pregnant and with a partner ($p<0.05$) (Table 1). Currently pregnant women reported less exposure to emotional, physical and sexual IPV during their previous pregnancy; however, when we compared these differences with women with a current partner and not pregnant they were not significant ($p>0.05$) (Table 1).

Contraception

Among partnered non-pregnant women, 52% (164/317) were using reversible contraceptives, 28% (90/317) were sterilised and 20% (63/317) were not using any form of contraception. When we compared the characteristics of women not using any form of contraception with those using reversible contraceptives and those sterilised, we found a higher percentage of rural women among those using reversible contraceptives than among those not using any method ($p<0.05$) (Table 2). In addition, follow-up exposure to emotional IPV, physical IPV, controlling behaviour by a partner, any IPV at follow-up and continued abuse pattern was higher among those using reversible contraceptives than those not using any form of contraception ($p<0.05$) (Table 2). Women who were sterilised were older and had higher parity than those not using any form of contraception ($p<0.05$). In addition, they experienced higher exposure to physical IPV and controlling behaviour by partner at follow-up than those not using any form of contraception (Table 2).

The percentages for all forms of reversible contraception were as follows: 40% (66/164) used injectable contraceptives, 29% (47/164) reported using oral contraceptives, 13% (21/164) IUD, 13% (21/164) condom, 2% (4/164) calendar-rhythm method and 3% (5/164) withdrawal. Rural women used more injectable contraceptives and fewer IUDs than urban women ($p<0.05$) (Table 3). Almost all women using reversible contraceptives (161/164) reported that their partners agreed to their contraceptive use. Two women reported that their partner prohibited them from using contraceptives, and one reported that her partner destroyed the contraceptive. Of these three women, two were exposed to a continued pattern of abuse.

Women who had never been abused used more oral contraceptives and fewer injectable contraceptives than those ending abuse or those with a continued pattern of abuse, however these differences were not significant ($p>0.05$) (Table 4). Of the few women reporting being abused only at follow-up and using reversible contraceptives (10), four used an IUD ($p<0.05$) (Table 4). In addition, 53% (16/30) of the women exposed to physical IPV at follow-up used injectable contraceptives compared to 37% (50/134) of those not exposed, however this difference was not significant ($p>0.05$) (data not shown).

Association between IPV and contraceptive use

Crude ORs showed increasing odds of reversible contraceptive use among women reporting ending abuse, continued abuse and new abuse. After adjusting for age, residency, educational level, parity and socioeconomic status, women who presented a continued pattern of abuse had higher odds of reversible contraceptive use than those never abused [adjusted odds ratio (AOR) 2.50, 95% CI 1.04–5.99] (Table 5). The IPV patterns suggested that present rather than previous IPV was associated with higher odds of reversible contraceptive use. When we explored these

Table 4 Type of reversible contraceptive use* among partnered non-pregnant women by intimate partner violence exposure patterns (*n*=164)

	Never abused		Ending abuse		Continued abuse		New abuse	
Type of reversible contraceptive use	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**
Oral contraceptive	18	34	13	26	13	25	3	30
Injectable contraceptive	18	34	22	44	24	47	2	20
Intrauterine device	8	15	5	10	4	8	4	40
Condom	6	11	10	20	4	8	1	10
Calendar-rhythm method	–	–	–	–	4	8	–	–
Withdrawal	3	6	–	–	2	4	–	–
Total	53	100	50	100	51	100	10	100

*Any method apart from female sterilisation.
†Chi-square (χ^2) or Fisher's exact test, $p<0.05$.

Table 5 Association between intimate partner violence exposures and reversible contraceptive use among non-pregnant partnered women (*n*=227)

IPV exposure	**Crude OR (95% CI)**	**Adjusted OR (95% CI)**
IPV pattern*		
Never abused	1.0	1.0
Ending abuse	1.24 (0.63–2.44)	0.95 (0.44–2.04)
Continued abuse	2.79 (1.23–6.30)	2.50 (1.04–5.99)
New abuse	2.73 (0.56–13.3)	2.65 (0.53–13.20)
Any IPV at follow-up*†		
No	1.0	1.0
Yes	2.51 (1.24–5.06)	2.59 (1.24–5.40)
Emotional IPV at follow-up*		
No	1.0	1.0
Yes	2.72 (1.32–5.62)	2.80 (1.32–5.95)
Physical IPV at follow-up*		
No	1.0	1.0
Yes	3.30 (1.11–9.79)	3.60 (1.15–11.10)
Sexual IPV at follow-up*		
No	1.0	1.0
Yes	2.01 (0.56–7.20)	2.12 (0.56–8.44)

*Adjusted for residency (urban, rural), women's education (≤3rd grade, >3rd grade), parity (1, ≥2), socioeconomic status (poor, non-poor) and woman's age (in years).
†Any emotional, physical or sexual IPV.
CI, confidence interval; IPV, intimate partner violence; OR, odds ratio.

associations, we found that the odds of using reversible contraceptives were higher among women exposed to emotional IPV (AOR 2.80, 95% CI 1.32–5.95), physical IPV (AOR 3.60, 95% CI 1.15–11.10) and any IPV at follow-up (AOR 2.59, 95% CI 1.24–5.40) than those not exposed (Table 5).

Discussion

Our main findings showed that women who presented with a continued abuse pattern and those exposed to emotional, physical or any IPV at follow-up had higher odds of reversible contraceptive use than those not exposed, even after adjusting for demographic factors. We found no significant differences in the type of reversible contraceptive used by women with different IPV patterns.

The external validity of our results is strengthened by the population-based design of our study and because there were no differences between women lost and found to follow-up. To reduce underreporting of IPV, the instrument was validated and field workers were trained extensively in how to collect data on IPV with sensitivity and empathy. The 12-month IPV prevalence at follow-up in our study is higher than figures reported for this setting in the last national survey,[18] thus underreporting of partner abuse is unlikely.

Measuring emotional IPV is challenging. Acts considered emotional violence are more diverse than those considered physical IPV; also, they can vary between different cultures.[4 25] Nevertheless, emotional abuse has been described as an important determinant of women's health,[25] thus we decided to include this exposure in our analysis. In addition, the emotional abuse variable used in our study showed good reliability (Cronbach's α 0.83).

Women often experience IPV as a process[26] and use several strategies to end the abuse.[27] In this context of partner abuse, a woman's right to control her fertility is often challenged by pregnancy coercion,[7] which can lead to unintended pregnancies.[6–8] Our results suggest that higher odds of reversible contraceptive use among abused women represent women's attempts to regain control over their own fertility in a context of violence and control by their partner. Contraceptive use might play an important part in the process of ending abuse because pregnancy increases women's vulnerability and can impair their response to IPV, forcing them withstand the violence and remain in the abusive relationship in order to protect the fetus.[28] In addition, higher fertility might contribute to decrease

women's financial and personal autonomy, which can make the process of ending abuse more difficult.[29] Our results are in line with population-based cross-sectional studies in Africa and New Zealand, which report higher contraceptive use among women experiencing different forms of IPV.[11–13]

Women in our study used predominantly female-controlled contraceptives, which is in line with the overall pattern of contraceptive use among Nicaraguan women.[18] The limited use by rural women of IUDs might reflect reduced access to health facilities with skilled staff who can provide this service.

We found that women never abused used more oral contraception and less injectable contraception than those with a continued pattern of abuse or those ending abuse, however these associations were not significant ($p<0.05$). A possible explanation of this finding is the small sample size of our study that limits its statistical power to assess significant differences between the types of reversible contraceptive used among the different IPV patterns. The power was low for all comparisons described in Table 4 and the maximum power obtained from all comparisons was 29.9% (comparing injectable contraceptive use between women never abused and women with a continued pattern of abuse).

In conclusion, the greater odds of reversible contraceptive use among women suffering abuse might reflect their attempts to control their fertility in a context of gender inequality, partner control and abuse. Health care can play an important role in the ending of abuse process by identifying women exposed to IPV. Thus, in order to identify women exposed to IPV and provide adequate support and referral, it is imperative that a policy of abuse inquiring at services providing contraceptives are formulated and implemented. These interventions are more likely to reach women in need in countries such as Nicaragua, where public health services offering reproductive counselling are widely used.

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