

Intimate partner violence and unintended pregnancy: prevalence and associated factors

Violência pelo parceiro íntimo e gravidez não pretendida: prevalência e fatores associados

La violencia de género y los embarazos no deseados: prevalencia y factores asociados

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Abstract

This study investigated the association between unintended pregnancy and intimate partner violence before pregnancy. A cross-sectional study was carried out with 1,054 women, aged 18 to 49, in Recife, Northeastern Brazil, from July 2005 to March 2006. Non-conditional logistic regression analysis was performed with a hierarchical strategy for entering variables into the model, according to the conceptual framework defined. Unintended pregnancy was reported by 60.3% (636) women. Intimate partner violence prior to the pregnancy was associated with unintended pregnancy ($OR_{adj} = 1.57$; 95%CI: 1.17-2.11), even when adjusted for the women's sociodemographic characteristics, the partner's behaviour, and the relationship dynamic. When the association was adjusted for the use of contraception and the partner's refusal to use contraception, the association was no longer significant, suggesting that the effect of partner violence on unintended pregnancy may be mediated by these variables. The findings point to the need of screening for intimate partner violence in reproductive health services.

Violence Against Women; Spouse Abuse; Unplanned Pregnancy; Reproductive Health

Resumo

Este estudo investigou a associação entre gravidez não pretendida e violência por parceiro íntimo antes da gravidez atual. Estudo transversal foi realizado com 1.054 mulheres, com idade entre 18 e 49, residentes no Recife, Nordeste do Brasil, entre julho de 2005 e março de 2006. Utilizou-se análise de regressão logística com estratégia hierarquizada para a inserção de variáveis no modelo, de acordo com o quadro conceitual definido. Gravidez não pretendida foi relatada por 60,3% (636) das mulheres. Violência por parceiro íntimo antes da gravidez foi associada com gravidez não pretendida ($OR_{ajustado} = 1,57$; IC95%: 1,17-2,11), mesmo quando ajustada para as características demográficas e socioeconômicas das mulheres, pelo comportamento do parceiro e dinâmica da relação. Quando a associação foi ajustada pelo uso de contracepção e recusa do parceiro ao uso de contracepção, houve perda da significância estatística. Isso sugere que o efeito da violência por parceiro íntimo sobre gravidez não pretendida pode ser mediado por tais variáveis. Os achados apontam a necessidade de rastreamento da violência por parceiro íntimo nos serviços de saúde reprodutiva.

Violência Contra a Mulher; Maus-Tratos Conjugais; Gravidez Não Planejada; Saúde Reprodutiva

Introduction

Unintended pregnancy has been incorporated into the reproductive health research agenda due to its adverse outcomes for women and child's health¹. This is a difficult area of reproductive health to study, especially because the terms "unwanted", "unplanned" and "unintended" have different meanings for the women and for researchers^{2,3}. In some studies⁴, the intention to get pregnant is investigated retrospectively, when women are already pregnant, and is based on what they report about their reproductive intentions prior to becoming pregnant. In other studies^{2,3}, this term has overlapped with "planned pregnancies", using different criteria to classify a pregnancy as intended or otherwise.

While the use of contraceptives in Brazil is widespread, there is also a high proportion of unintended pregnancies. The *National Survey of Demographic and Health 2006* (PNDS 2006) estimated that, of all births occurred in Brazil between 2001 and 2006, 46% were unplanned, 28% of which being mistimed and 18% unwanted⁵.

Few studies have directly addressed the association between intimate partner violence and unintended pregnancy^{6,7,8,9,10,11}. In Latin America, studies carried out in Colombia⁸ and Peru¹⁰ revealed a higher risk of unintended pregnancy among women who had suffered physical or sexual violence by an intimate partner.

Violence by an intimate partner is highly prevalent in Brazil. The World Health Organization's (WHO) multi-country study on violence against women¹² revealed that, in the city of São Paulo, 41.8% of women reported having suffered psychological violence at least once in their lifetimes, 27.2% physical, and 10.1% sexual. In a rural area of Pernambuco, 48.9% of the violence reported was psychological, 33.7% physical, and 14.3% sexual. Violence by an intimate partner is also frequent during pregnancy¹³. A cross-sectional study¹⁴ carried out to estimate the prevalence of this kind of violence among a sample of 2,156 women, aged 15 to 49 years, users of the Family Health Program (FHP), the Brazilian primary health care program, between 2005 and 2006, showed that 52.2% of women reported at least one form of intimate partner violence (physical, sexual, or psychological) in the course of their lives. When investigated in relation to the most recent or current partner in the previous year, this prevalence increased to 70.1% for any kind of violence.

The aim of this study was to investigate the prevalence of unintended pregnancy and its association with intimate partner violence prior to the current pregnancy among women whose

pregnancy progressed to a birth. The study was also designed to estimate the prevalence of intimate partner violence in the relationship with the current or most recent partner, prior to the current pregnancy.

The theoretical framework included gender issues, which encourage men to behave violently towards their partners and undermine the social, sexual, and reproductive autonomy of women. This can reduce women's power to negotiate contraceptive use with their partners and lead to a lack of control over reproductive intentions^{15,16,17,18}.

Methods

Study area and design

A cross-sectional study was carried out using the baseline data of a cohort study designed to investigate intimate partner violence and adverse maternal and perinatal outcomes. It was conducted in Recife, the State capital of Pernambuco, northeastern Brazil, between July 2005 and March 2006. The area studied was Health District II (one of the city's six health districts), which has a population of 217,293 inhabitants, representing almost 15% of the total population of Recife. In the last Demographic Census Recife had a high proportion of low-income families¹⁹.

All pregnant women aged 18 to 49 years, living in Health District II and registered at the FHP, were eligible for inclusion in the original study. Of 1,133 women identified, 1,121 (99%) were interviewed. They were identified from prenatal care records of 42 primary care teams and from the records of community health workers in order to include those not receiving prenatal care at FHP units. In this analysis 1,054 women were included who had been in a sexual-affective relationship for at least six months, regardless of formal marriage or cohabitation, and also had complete data for all analyzed variables.

The FHP coverage is about 78% of the population of Recife¹⁹. Given that the criteria for the registration of families on the FHP are the same in all areas of the city, these results can be generalized to all women attended by the FHP in Recife.

Procedures

Face-to-face interviews using a structured questionnaire with closed questions were conducted by university-educated female interviewers. Most interviews were conducted at a healthcare unit, but some women were interviewed at home by request. Women were contacted and interviewed

in the third trimester of pregnancy, but 81 (7.9%) had already given birth at the period of the interview due to a premature birth.

Variables

The dependent variable, unintended pregnancy, was drawn from a question that asked whether the woman, before knowing that she was pregnant: (a) “was trying to get pregnant”; (b) “wanted to get pregnant”; (c) “wanted to get pregnant later” (mistimed); (d) “did not want to get pregnant” or (e) “did not care either way”. The answers classified as unintended pregnancy were the alternatives (c) and (d). The first two options were classified as intended pregnancy. For women who said that they “did not care either way” (n = 41), a detailed analysis of the questionnaires was performed, using other issues to classify pregnancies as intended or unintended (reasons for not wanting to get pregnant, her reaction to the pregnancy, contraceptive use in the period prior to pregnancy, and reproductive intention). In the same way, pregnancy intention by the partner was also classified as intended or unintended.

The intimate partner was defined as the current or former partner with whom the woman was living or had lived, irrespective of whether the relationship was a formal union or a situation of cohabitation.

Intimate partner violence, the main independent variable, was classified as physical, psychological, and sexual, based on questions from the *WHO Multi-country Study on Women's Health and Domestic Violence*¹², which was validated in Brazil²⁰. Physical violence was identified based on women's report of at least one of the following partner's behaviors: shoving, slapping, punching, kicking or beating, choking, or using a weapon such as a gun, a knife or others. Psychological violence was based on insult, humiliation, intimidation, or threat, and sexual violence was defined as being physically forced to practice sexual intercourse, practicing sexual intercourse due to fear or intimidation, or practicing sex in a manner the women considered degrading. These questions have been presented elsewhere^{13,21}. In the multivariate analysis, intimate partner violence was classified using two categories: having suffered some kind of violence or not having suffered violence by the partner. To ascertain the prevalence of intimate partner violence, all cases of psychological, physical and sexual violence were taken into consideration, both separately and with overlaps, inflicted by the current or most recent partner and occurring any time during the relationship before pregnancy.

Years of schooling were divided into three categories: 0-4 years, 5-8 years and 9 years or more. The classification of women's employment status was adapted from the classification adopted by the Brazilian Institute of Geography and Statistics (IBGE) in the 1991 Census²² and categorized as: (a) employed regardless of a formal contract, self-employed, employers; (b) housewife, retired, or unemployed, (c) students (those still attending school irrespective of having a job or otherwise). The latter were placed in a separate group, as they showed a greater probability of suffering intimate partner violence.

The use of alcohol by the partner was classified as abusive when the woman reported seeing him drunk “every day or nearly every day” or “once or twice per week” in the last 12 months. Use of drugs was classified as yes/no according to whether the woman stated that her partner used or did not use illicit drugs.

Marital status was categorized as: currently married, living with partner, dating with a sexual relationship; without a sexual-emotional partner at the time of the interview. The length of the relationship was initially categorized into four groups: less than 1 year, 1 to 4 years, 5 to 7 years, 8 or more years. In the multivariate analysis the variable was dichotomized.

Partner controlling behavior (yes/no) was present when women answered positively that he restricted her contact with friends, relatives or other men, was suspicious of infidelity, or attempted to prevent her from working or studying and her access to health services.

The use of contraceptives at conception was classified as: use/non-use of any method. Reproductive intention referred to the ratio between the number of previous live births and the number of births desired by women (higher than/less than or equal to). Partner's refusal to use contraception (yes/no) was identified when the woman reported that her partner had at any time refused, objected to, or tried to prevent her from using some contraceptive method.

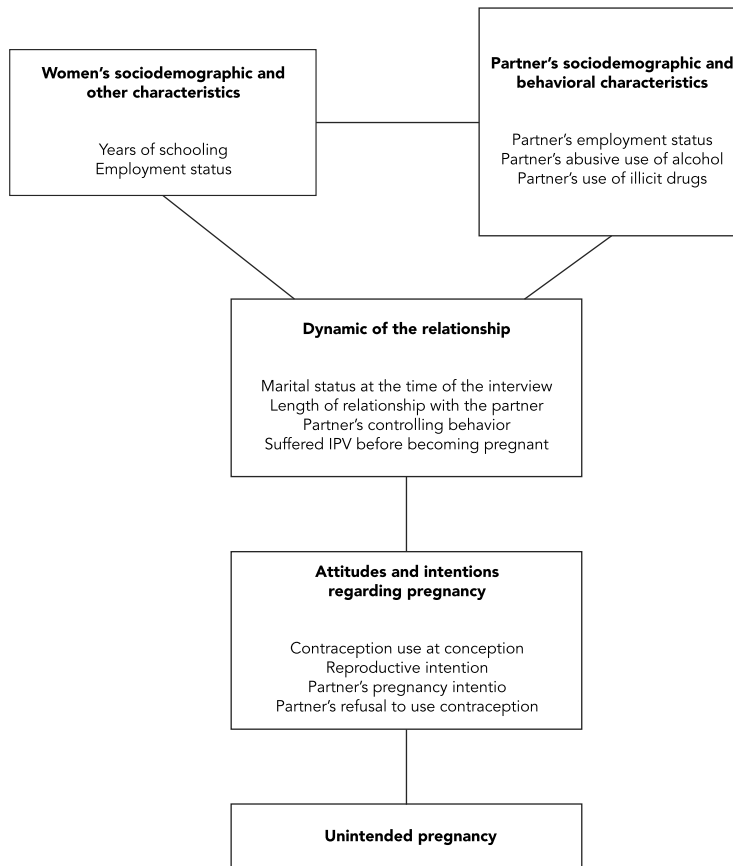
Statistical analysis

Variables were first analyzed in a bivariate manner to identify those to be included in the unconditional logistic regression. In a second step, because of the complex interrelationship between intimate partner violence and unintended pregnancy, a conceptual framework was used to describe the hierarchical relationship between risk factors (Figure 1). The framework comprised three levels, each containing several variables:

a) Level 1: socio-demographic characteristics of the women (age, years of study, and employ-

Figure 1

Framework for studying the relationship between intimate partner violence and unintended pregnancy.



ment status) and characteristics of the partner (employment status, alcohol abuse, and illicit drug use);

b) Level 2: variables relating to the dynamic of the relationship (marital status, length of relationship, partner's controlling behavior, and having suffered intimate partner violence before the current pregnancy);

c) Level 3: attitudes and intentions regarding pregnancy (use of contraceptive methods at conception, reproductive intention, partner's pregnancy intention, and partner's refusal to use contraception). Regression analysis with stepwise forward selection of variables was performed, with a hierarchical strategy for entering variables into the model, according to the conceptual framework previously defined.

In each step, a significance of p -value < 0.20 was required to enter into the logistic model.

Variables were retained in the model if they had p -value ≤ 0.05 for the likelihood ratio test, after adjustment for variables in the same level. The remaining variables were carried forward and included together with the variables in the next step of the framework. The variables that showed statistical significance at a certain level remained in the model in subsequent levels. They were considered factors associated with unintended pregnancy even if they lost statistical significance after inclusion in the set of hierarchically lower variables. According to this approach, some variables are assumed to mediate their effect through other independent variables as well as directly²³. Interaction and collinearity between variables were investigated. Statistical analysis was performed using SPSS for Windows (SPSS Inc., Chicago, USA) version 15.

Table 1

Sociodemographic and other characteristics of participants, and association of these characteristics with unintended pregnancy.

Factors	Unintended pregnancy % (n)	Crude OR	95%CI	p-value
Age (years)				
19 or less	62.2 (89)	1.22	0.78-1.93	< 0.3624
20 to 29	60.9 (423)	1.15	0.84-1.59	< 0.3653
30 or more	57.4 (124)	1.00	-	-
Years of schooling				
4 or less	64.8 (160)	1.66	1.18-2.34	0.0023
5 to 8	65.2 (268)	1.69	1.26-2.27	< 0.0002
9 or more	52.5 (208)	1.00	-	-
Employment status				
Unemployed	61.5 (464)	1.33	0.99-1.79	0.051
Still attending school	74.1 (43)	2.39	1.21-4.76	0.006
Employed	54.5 (239)	1.00	-	-
Partner's employment status				
Unemployed	69.5 (153)	1.66	1.21-2.28	0.002
Employed	57.9 (483)	1.00	-	-
Partner's abusive use of alcohol				
Weekly	65.5 (112)	1.44	1.00-2.09	0.0420
Monthly	64.6 (186)	1.39	1.03-1.87	0.0275
Never	56.8 (338)	1.00	-	-
Partner's use of illicit drugs				
Yes	79.5 (62)	2.71	1.54-4.77	< 0.0001
No	58.8 (574)	1.00	-	-
Marital status at the time of the interview				
Without sexual-emotional partner	81.8 (90)	3.75	2.21-6.42	< 0.0000
Dating with a sexual relationship	73.9 (119)	2.36	1.59-3.51	< 0.0000
Currently married/living with partner	54.5 (427)	1.00	-	-
Length of relationship with the partner (years)				
4 or less	62.4 (352)	-	-	-
5 to 7	53.0 (125)	-	-	-
8 or more	62.6 (159)	1.00	-	-
Partner's controlling behavior				
Yes	63.1 (476)	1.50	1.14-1.96	0.004
No	53.3 (160)	1.00	-	-
Suffered intimate partner violence before becoming pregnant				
Yes	69.5 (237)	1.79	1.36-2.36	0,000
No	55.9 (399)	1.00	-	-
Contraception use at conception				
Yes	89.2 (321)	9.90	6.88-14.26	0,000
No	45.4 (315)	1.00	-	-
Women's reproductive intention				
Greater than intended	85.3 (238)	6.46	4.36-9.60	< 0.0001
Equal to intended	57.5 (176)	1.51	1.12-2.04	0,006
Less than intended	47.3 (222)	1.00	-	-
Partner's pregnancy intention				
Unintended	81.9 (363)	5.62	4.20-7.51	< 0.0001
Intended	44.7 (273)	1.00	-	-
Partner's refusal to use contraception				
Yes	72.1 (132)	1.89	1.33-2.68	< 0.0001
No	57.9 (504)	1.00	-	-

OR: odds ratio; 95%CI: 95% confidence interval.

Ethical considerations

The study was approved by the Research Ethics Committee of the Center for Health Sciences at the Federal University of Pernambuco. At the beginning of the interview, each participant was given a brief account of the study, her consent was requested, and she was informed that the interview could be halted at any time. All interviewees received a guide indicating police, legal, social, psychological and medical services available in Recife for women who were victims of violence.

Results

Of the 1,054 women interviewed, 60.3% (636) reported unintended pregnancy. Rates were higher among younger (under 30 years), less educated (8 years of study or less), and unemployed women, as well as those still attending school. Most of these women's partners were unemployed, abusive users of alcohol, and users of illicit drugs.

Most of the women who did not intend to get pregnant, were not living with their partner or were separated at the time of the interview, had up to 4 years or more than 8 years of relationship, and had suffered controlling behavior by the partner.

Moreover, the number of children of women who reported unintended pregnancy was greater or equal to what they intended, they had been using contraceptive methods at conception, and their partners did not intend pregnancy and had expressed refusal, disapproval, or tried to avoid the use of contraception (Table 1).

Intimate partner violence suffered prior to the current pregnancy was reported by 32.4% ($n = 341$) of women (Table 1). Most aggressor partners (85.1%) were fathers of the child. Among those who reported intimate partner violence, 69.5% of pregnancies were unintended (crude OR = 1.79; 95%CI: 1.36-2.36). In the subgroup who reported psychological violence alone, the probability of unintended pregnancy was 1.55 (95%CI: 0.98-2.46); for those who reported physical and/or sexual violence, it was 1.75 (95%CI: 1.24-2.48); and for those who reported all forms of violence, it was 3.15 (1.37-7.52), in comparison with those that had not suffered violence.

The hierarchical analysis is presented in Table 2. In the first level, still attending school, having less education, having a partner who was unemployed, and having a partner who used illicit drugs remained associated with unintended pregnancy, even after adjustment for the variables in this level (women's years of study, wom-

en's employment status, partner's employment status, partner's abusive use of alcohol, and partner's use of illicit drugs).

At the second level, women's marital status, length of relationship with her partner, and having suffered intimate partner violence were the variables that remained associated with unintended pregnancy. After adjustment for the variables present in this level (marital status at interview, length of relationship with the partner, partner's controlling behavior) and those that remained from the previous step (women's years of study, women's employment status, partner's employment status, and partner's use of illicit drugs), intimate partner violence remained associated with unintended pregnancy (OR_{adj} = 1.57; 95%CI: 1.17-2.11; $p = 0.001$).

At the third level, using contraceptive methods at conception, having already given birth to an equal or greater number of children than intended, having a partner who did not want the pregnancy or who had expressed displeasure, disapproval, or tried to avoid the use of contraception were associated with unintended pregnancy, after adjustment for the variables in this level and those retained from the previous step (women's years of study, women's employment status, partner's employment status, partner's use of illicit drugs, marital status at interview, length of relationship with the partner). In the presence of variables related to contraceptive behavior and the reproductive intention of the women and their partners, the association between IPV and unintended pregnancy was no longer significant (OR_{adj} = 1.01; 95%CI: 0.71-1.44; $p = 0.947$).

No interaction was observed between intimate partner violence and the other independent variables, nor was there indication of collinearity between them in the adjusted models.

Discussion

As far as we are aware, this is the first population-based study to investigate the association between intimate partner violence and unintended pregnancy in Brazil and it is one of the few studies^{6,11} specifically designed to examine this association.

The prevalence of unintended pregnancy found in this study was 60.3%, which is higher than the estimates observed nationally in Brazil⁵. However, a population-based study conducted in 2007²⁴ revealed 65% of pregnancies to be unplanned in a municipality of Rio Grande do Sul²⁴. In the international literature, the prevalence ranges from 18.5 to 65.3%^{6,7,8,9,10,11,25,26,27,28,29,30,31}. Our findings may reflect

Table 2

Hierarchical analysis of variables and unintended pregnancy.

Factors	Crude OR (95%CI)	Adjusted OR (95%CI)			
		Level 1 (step 1) *	Level 1 (step 2) **	Level 2 ***	Level 3 #
Years of study					
4 or less	1.66 (1.18-2.34)	1.71 (1.21-2.42)	1.48 (1.04-2.11)	1.33 (0.93-1.91)	1.05 (0.67-1.64)
5 to 8	1.69 (1.26-2.27)	1.69 (1.25-2.27)	1.54 (1.14-2.09)	1.54 (1.14-2.08)	1.11 (0.78-1.62)
9 or more	1.00	1.00	1.00	1.00	1.00
Employment status					
Unemployed	1.33 (0.99-1.79)	1.08 (0.80-1.47)	1.07 (0.79-1.46)	1.10 (0.81-1.51)	1.01 (0.69-1.49)
Still attending school	2.39 (1.21-4.76)	2.24 (1.18-4.27)	2.14 (1.12-4.10)	2.02 (1.04-3.90)	2.86 (1.33-6.14)
Employed	1.00	1.00	1.00	1.00	1.00
Partner's employment status					
Unemployed	1.66 (1.21-2.28)		1.47 (1.06-2.04)	1.37 (0.98-1.92)	1.04 (0.70-1.55)
Employed	1.00		1.00	1.00	1.00
Partner's abusive use of alcohol					
Yes	1.41 (1.09-1.81)		1.23 (0.94-1.59)	-	-
No	1.00		1.00	-	-
Partner's use of illicit drugs					
Yes	2.71 (1.54-4.77)		2.25 (1.26-4.00)	1.84 (1.02-3.32)	1.63 (0.82-3.23)
No	1.00		1.00	1.00	1.00
Marital status at the time of the interview					
Without partner	3.28 (1.99-5.42)			2.63 (1.57-4.41)	2.14 (1.18-3.86)
Still with the partner	1.00			1.00	1.00
Length of relationship with the partner (years)					
≤ 4 or ≥ 8	1.48 (1.10-1.98)			1.47 (1.09-1.99)	1.67 (1.15-2.44)
5 to 7	1.00			1.00	1.00
Suffered intimate partner violence before becoming pregnant					
Yes	1.79 (1.36-2.36)			1.57 (1.17-2.11)	1.01 (0.71-1.44)
No	1.0			1.00	1.00
Partner's controlling behavior					
Yes	1.50 (1.14-1.96)			1.14 (0.85-1.52)	-
No	1.00			1.00	-
Contraception use at conception					
Yes	9.90 (6.88-14.26)				8.79 (5.90-13.11)
No	1.00				1.00
Reproductive intention					
Equal to or greater than intended	5.50 (3.84-7.88)				4.64 (3.06-7.04)
Less than intended	1.00				1.00
Partner's pregnancy intention					
Unintended	5,62 (4.20-7.51)				4.32 (3.09-6.04)
Intended	1.00				1.00
Partner's refusal to use contraception					
Yes	1.87 (1.33-2.68)				1.99 (1.29-3.06)
No	1.00				1.00

OR: odds ratio; 95%CI: 95% confidence interval.

* For socioeconomic and demographic factors of the women;

* For variables selected at level 1, step 1 and for variables related to socioeconomic and behavioral characteristics of the partner;

*** For variables selected at level 1 (steps 1 and 2) and for variables related to the relationship dynamic;

For variables selected at levels 1 and 2 and for variables related to attitudes and intentions regarding pregnancy (level 3).

the context of the population studied, since it consisted of women with low socioeconomic status and a considerable proportion of ineffective use of contraception. Several studies^{30,32}, including one carried out in Brazil³³, have shown that lower levels of education are associated with unintended pregnancy. Women in this condition may have less access to information and to contraceptive methods, as well as less autonomy in relation to reproductive decisions.

The comparability of our findings with other studies is difficult to establish, since the studies mentioned^{2,3,8,10,25,26,27,28,29,30,31} differ in socio-cultural context and in the definition of unintended pregnancy, as well as the fact that the population studied included non-pregnant women, women who were pregnant in the last five years, who were in postpartum, or even women who had had an abortion as the outcome of pregnancy.

Investigating pregnancy intention involves certain conceptual difficulties³. The terms unintended, unplanned, or unwanted have different meanings for the women and are influenced by unconscious factors, life circumstances, past experiences, and social representations of motherhood and procreation^{2,3}.

A prevalence of 32.4% was found for intimate partner violence. Although high, this may be underestimated because the approach to the issue of violence in the context of sexual-affective relationships has showed to be a difficult and sensitive subject to address in epidemiological research³⁴. It is possible that women underreport intimate partner violence for shame or fear of exposing this type of experience or being stigmatized^{6,34}. Physical violence may have been underreported for fear of reprisals and further aggression by the partner. Sexual violence, in turn, may have been underreported, according to the representation of sex within marriages or unions in different cultures, such as unconditional sex for men³⁵.

These findings indicate that having suffered intimate partner violence is associated with unintended pregnancy, even when adjusted for the socio-demographic characteristics of women, the socio-economic and behavioral characteristics of the partner, and the variables relating to the dynamic of the relationship. Our estimate is consistent with previous studies in Latin America that showed an association between intimate partner violence and the events studied^{8,10}.

However, when all variables at the third level, which are closer to pregnancy intention, were included in the multivariate analysis, the association was attenuated. This suggests that the effect of intimate partner violence on unintended

pregnancy may be mediated by the ineffective use of contraception, as well as the attitudes of disapproval, refusal, or partner's attempts to avoid the use of contraception. Women who reported intimate partner violence most frequently mentioned the use of contraception in the period prior to pregnancy and a higher proportion of unintended pregnancy when compared to those who did not report violence. Inconsistent use of contraceptive may express the great difficulty involved in negotiating contraception for women in violent relationships. Fanslow et al.³⁶ have pointed out that a partner's refusal to use contraception may be an indicator of violence in the context of relationships between couples, which is reiterated by Brazilian studies^{17,36,37}.

Some studies^{17,38,39,40} suggest that women in this kind of relationship may lack control over the timing of sexual intercourse and are less likely to adopt contraception, thereby increasing the likelihood of unwanted pregnancy. Another issue worth raising here is the fact that women who suffer violence by an intimate partner may have less decision-making power to interrupt an unintended pregnancy when the contraceptive method fails and is unable to exercise control over their fertility¹⁸.

Among the study's limitations, we point out that it was carried out using the baseline of a cohort of women whose pregnancy progressed to a birth. Several studies^{41,42,43} have found an association between intimate partner violence and abortion and pointed out that most pregnancies ending in induced abortion are unintended. Our study may thus have underestimated the extent of unintended pregnancy and its association with intimate partner violence. In retrospective reports of pregnancy intention, women may rationalize an unwanted pregnancy as a wanted birth shifting to a more positive response, reclassifying a child from being "unwanted" to "wanted"^{44,45,46}. In this study, the description of the pregnancy as intended or not may have been influenced by the interview having been conducted late in pregnancy⁴⁷.

The same phenomenon has occurred with the investigation of violence, because although women were asked about the history of intimate partner violence in the period prior to conception, this information was collected retrospectively, which may have resulted in some misclassification. However, any measurement error with regard to partner violence would be expected to be random and would have reduced the strength of the observed association.

Several strengths of this study need to be highlighted. The large sample with an excellent response rate provided a representative com-

munity sample of poor people in this setting. We used an internationally recognized questionnaire that takes a non-judgmental and more acceptable approach to this sensitive subject. We were also able to adjust for a large number of possible confounding variables and a conceptual framework was used to manage the complex hierarchical inter-relationship between intimate partner violence and unintended pregnancy.

Finally, the study's findings point to the need for further research into reproductive issues and violence against women, an aspect that should be focused in many studies of contraception, unintended pregnancy, and abortion. Furthermore, it shows the importance of reproductive health services addressing the relational aspect of contraception and highlights the need to enhance the quality of health care for women in order to better identify intimate partner violence and provide appropriate assistance.

Resumen

Se investigó la asociación entre el embarazo no deseado y la violencia de género antes del embarazo. Se trata de un estudio transversal con 1.054 mujeres de entre 18 y 49 años, que viven en Recife, nordeste de Brasil, entre julio de 2005 y marzo de 2006. Se utilizó el análisis de regresión logística con una estrategia jerárquica para la inserción de variables en el modelo, de acuerdo con un marco conceptual definido. El embarazo no deseado fue informado por un 60,3% (636) mujeres. La violencia de género antes del embarazo se asocia con embarazos no deseados ($OR_{aj} = 1.57$; IC95%: 1.17-2.11), incluso después de ajustarla por las características demográficas y socioeconómicas de las mujeres, comportamiento de la pareja y la dinámica de la relación. Cuando la asociación fue ajustada para el uso de anticonceptivos y la negativa del compañero para usar anticonceptivos, hubo pérdida de significación estadística. Esto sugiere que el efecto de violencia de género en el embarazo no deseado puede estar influenciado por estas variables. Los hallazgos apuntan a la necesidad de la detección de violencia de género en los servicios de salud reproductiva.

Violencia Contra la Mujer; Maltrato Conyugal; Embarazo no Planeado; Salud Reproductiva

Contributors

T. V. B. Araújo participated in the original idea, design, data analysis and interpretation, and drafting the manuscript. A. C. C. Azevêdo participated in the original idea, data analysis and interpretation, and drafting the manuscript. S. Valongueiro participated in the original idea, study design, interpretation of the results, and drafting the manuscript. A. B. Ludermir participated in the original idea, study design, interpretation of the results, and drafting the manuscript.

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