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Poor antenatal care attendance is associated with intimate partner violence: Multivariate analysis of a pregnancy cohort

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ABSTRACT

Objective: Intimate partner violence (IPV) is a common, neglected public health problem and pregnancy is a period of vulnerability. We evaluated the relationship of attendance for antenatal care with the experience of psychological and physical IPV.
Study design: We established a cohort of 779 consecutive mothers who received antenatal care and gave birth in 15 public hospitals, Andalusia, Spain. Trained midwives gathered IPV data using the Index of Spouse Abuse validated in the Spanish language (score ranges: 0–100, higher scores reflect more severe IPV; cut-offs: physical IPV = 10, psychological IPV = 25). Less than eight visits defined the threshold for poor antenatal care attendance. Multivariate logistic regression estimated crude (COR) and adjusted odds ratios (AOR), with 95% confidence intervals (CI), of the relationship between antenatal care attendance and psychological and physical IPV, controlling for socio-demographic and other pregnancy characteristics.
Results: Response rate was 92.2%. Poor antenatal clinic attendance, observed in 76 (9.8%) women, was associated with both physical IPV (n = 26, 39% vs 9%; COR = 6.2, 95%CI = 2.7–14.3; AOR = 3.3, 95%CI = 1.1–9.4) and psychological IPV (n = 149, 20% vs 8%; COR = 2.9, 95%CI = 1.7–4.8; AOR = 1.6, 95%CI = 0.9–3.1), though the latter was not significant in multivariate analysis.
Conclusion: Women with a poor antenatal care attendance have higher risk of suffering physical IPV during pregnancy. Clinicians should be vigilant about the risk of IPV in mothers with poor attendance for antenatal care.

Key Message

Women with a poor antenatal care attendance have higher risk of suffering physical IPV.

Introduction

Violence against women, a fundamental human rights breach, is a common, neglected public health problem [1]. Intimate partner violence (IPV), the most common type of this violence, affects nearly a third of women globally [2]. By definition, IPV is physical, sexual, psychological abuse, and/or controlling behaviours perpetrated in a current or past intimate relation, whether or not there is cohabitation [3,4]. Pregnancy is a period of vulnerability for women and their offspring [4].

The pattern of antenatal care (ANC) among IPV survivors is not well studied. IPV is more prevalent than many common obstetric conditions [5], varying across countries and cultural contexts [4,6–8]. Just as poor engagement with ANC may be a useful marker for identifying and preventing pregnancy-related health risks for both mothers and their newborn children [9,10], its relationship with IPV ought to be established too. ANC attendance is influenced by individual, household, community and health system factors [11]. In high-income countries, inadequate antenatal care attendance is also associated with women living with complex social factors [12,13], possibly including those suffering IPV.

The aim of this study was to evaluate, in a population-based study, the relationship of attendance for antenatal care with the experience of psychological and physical IPV, captured through

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validated tools, with adjustments for a number of socio-demographic and obstetric characteristics.

Material and methods

Participants and sample size

A population-based study was designed based on 2009 regional health service statistics for all public hospitals (n = 28) in Andalusia, Spain (number of births = 76,336), as previously described in detail [8]. A cluster sampling approach was adopted, considering the hospitals as clusters grouped by hospital type (regional = 5; specialized = 10; district = 13). A sample size of 750 women was estimated to provide an accuracy of ±2.5% with 99% confidence for IPV detection, assuming an IPV prevalence of 7.5% (a literature review [14] suggested a rate ranging 4–8%) and an intraclass correlation coefficient among the hospitals of 5% [15]. The sample numbers were reached by enrolling 50 women each from 15 hospitals randomly selected with stratification for hospital type [8]. A total of 779 women participated in this study. Included were women admitted to obstetrics departments antenatally and giving birth within the study period. Excluded were women with stillbirths, those unable to communicate in the Spanish language, and those with disease or disability preventing collection of the study data.

Data collection procedures

Data were collected during the immediate postpartum period by midwives given specific training for the study [8]. Women were recruited on consecutive days until the sample size per hospital was reached. Data were gathered in one-to-one interviews in a room other than the ward in which the woman was hospitalized. The study was explained with guarantees of strict anonymity and confidentiality of the information collected. Women participating signed informed consent. If the women's responses suggested evidence of IPV, comprehensive information concerning the police, judicial, and social services and resources was given.

Data collection instruments

Socio-demographic questionnaire

Data were collected on items such as age, marital status, schooling history, employment, nationality, cohabitation with partner/family, and the availability of next of kin support (i.e. a relative who could be turned to when needed). A non-committed relationship was considered to be one between individuals who may have casual sex without demanding or expecting the commitment of a formal relationship.

Antenatal care

All women received routine antenatal care including estimation of gestational age by early ultrasound. Number of visits for antenatal care was recorded in the prospectively documented individual health records of pregnancy. The statutory requirement of 8 antenatal visits in Andalucia was used to define the threshold for poor antenatal attendance [16].

Experience of IPV

IPV was defined as physical, sexual, coercion or psychological abuse, and controlling behaviours perpetrated by a current or past intimate relation [3,4] during 12 months before giving birth. It was captured in the immediate post-partum period by Index of Spouse Abuse (ISA), a 30-item instrument measuring the severity and frequency of abuse using weighted items (see supplementary data Appendix A) [17]. The instrument was validated for use in Spanish [18]. It included assessments of emotional abuse (e.g. my partner screams and yells at me), psychological threats (e.g. my partner becomes very angry if I disagree with his point of view), coercive tactics (e.g. my partner orders me around), and physical (e.g. my partner slaps me around my face and head) and sexual abuse (e. g. my partner makes me perform sex acts that I do not enjoy or like). Two severity scores (ranging from 0 to 100 points) were computed, one for physical (ISA-P) abuse and the other for non-physical (ISA-NP) or psychological abuse. Recommended cut-off scores were 10 for physical abuse and 25 for psychological abuse [17].

Pregnancy intendedness

The women were asked: "At the time you became pregnant, did you want to become pregnant then, did you want to wait until later, did you want no (more) children, or did you not mind either way?" A pregnancy was considered unintended if the respondent stated that at the time she became pregnant she would have liked to have waited until later to become pregnant (mistimed pregnancy) or that she did not want any (more) children (unwanted pregnancy).

Statistical analysis

Chi-square test was used to compare differences in categorical variables. Multiple logistic regression analysis determined the relation between IPV and poor antenatal care attendance. A systematic review of 28 studies in low-income countries identified women's and their husbands' education, economic status, parity, place of residence and accessibility to health services as key determinants of use of ANC services [19]. In high-income countries, multiple social risk factors that may discourage women from accessing care, such as certain ethnics minorities, young mothers, poverty, recently arrived immigrants, language barriers, domestic violence, poor mental health, drug and alcohol abuse have been described [20]. Therefore, our model controlled for age, marital status, educational level, employment status, nationality, cohabitation, kin support and intended pregnancy. The results were summarised as crude (COR) and adjusted odds ratios (AOR) with 95% confidence interval (CI).

Ethical approval

The study protocol was approved by the research ethics committees of all participating hospitals. There was no formal patient and public involvment in this work. Participant gave individual consent for use of their data.

Results

Nine hundred thirty-two women were invited to participate in this study (Fig. 1). The response rate was 92.2% and the lost data 4.3%. IPV in pregnancy was reported by 153 (21.3%) of the women, including physical or psychological IPV, without double counting of cases with both. Physical IPV was reported by 26 (3.6%) and psychological by 151 (21.0%). The socio-demographic characteristics of the sample are shown in Table 1.

Poor antenatal care attendance was observed in 76 (9.8%) women; 20% among women who reported psychological IPV *versus* 8% among those who did not (COR = 2.9, 95%CI = 1.7–4.8); and 39% among those who reported physical IPV *versus* 9% among those who did not (COR = 6.2, 95%CI = 2.7–14.3) (Table 2). The antenatal care attendance was inadequate for: 23% of the women younger than 20 years and 14% of those aged 20–24 years; 14% of the women in a non-committed relationship, 15% of those in a committed relationship, and 7% of those in a marriage; 13% of the women with <7 yrs of schooling, 8% of those with 7–12 yrs of schooling, and 7% of those with university studies; 14% of the students and unemployed, 12% of the housewives, and 7% of the

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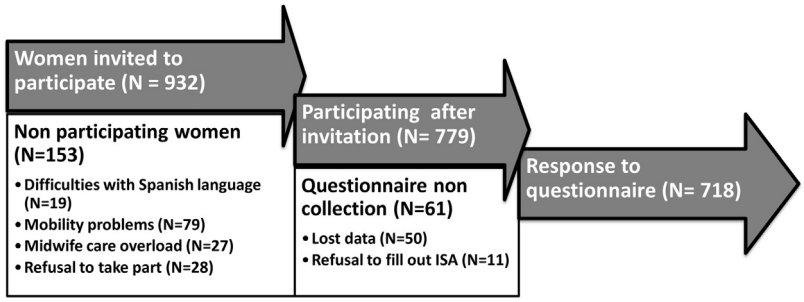

Fig. 1. Flow diagram of the participants. ISA: Index of Spouse Abuse.

mployed women; 19% of the non-Spanish participants and 9% of the Spanish women; 20% of the women not cohabiting with their partner and 9% of the women cohabiting with their partner; 17% of the women with lack of kin support and 9% of those with kin support; and for 22% of unintended pregnancy and 8% of the intended pregnancy.

In the model adjusted for socio-demographic characteristics, kin support and pregnancy intendedness, the association of physical IPV in pregnancies with poor antenatal care attendance remained significant (AOR = 3.3, 95%CI = 1.1–9.4), but the association with psychological IPV in pregnancy did not (Table 2). Being in a non-committed relationship (COR = 2.2, 95%CI = 1.3–3.8) or committed but unmarried (COR = 2.4, 95%CI = 1.3–4.4), having other nationality different from Spanish (COR = 2.4, 95%CI = 1.2–4.6), cohabitating with others than exclusively the partner (COR = 2.6, 95%CI = 1.4–5.0) were significantly associated with poor antenatal care attendance in the unadjusted model but not in the adjusted model. Women with 7–12 yrs of schooling (COR = 0.5, 95% CI = 0.3−0.9) or unemployed (COR = 0.5, 95%CI = 0.3−0.9) were significant protective factors against poor antenatal care attendance in the unadjusted but not in the adjusted model (Table 2).

Table 1
Socio-demographic characteristics of the sample.

	N	Fr (%)	Psychological IPV N (Fr %)	Physical IPV N (Fr %)
Age* yrs.				
<20	26	3.7	12 (46.1)	2 (7.7)
20-24	95	13.6	29 (30.5)	2 (2.1)
25-29	187	26.8	43 (23.0)	10 (5.4)
30-34	260	37.2	39 (15.0)	8 (3.2)
35-39	104	14.9	18 (17.3)	2 (1.9)
≥40	26	3.7	5 (19.2)	2 (7.7)
Relationship status				
Married	466	65.1	67 (14.4)	8 (1.7)
Committed	102	14.2	27 (26.5)	5 (4.9)
Non-committed	148	20.7	56 (37.8)	13 (8.8)
Years of schooling				
<7	262	36.5	68 (25.9)	11 (4.2)
7-12	350	48.8	72 (20.6)	12 (3.4)
>12	105	14.6	11 (10.5)	3 (2.9)
Employment status				
Housewife	159	22.2	42 (26.4)	13 (8.2)
Unemployed	143	19.9	34 (23.8)	6 (4.2)
Employed	402	56.1	69 (17.2)	6 (1.5)
Student	13	1.8	5 (38.5)	1 (7.7)
Nationality				
Spanish	652	90.8	131 (20.1)	19 (2.9)
Other	66	9.2	20 (30.3)	7 (10.6)
Cohabitation				
Partner	657	91.5	126 (19.2)	20 (3.0)
Other	61	8.5	25 (41.0)	6 (9.8)
Kin support				
Yes	680	95.1	133 (19.6)	21 (3.1)
No	35	4.9	17 (48.6)	5 (14.3)

IPV: Intimate partner violence.
* mean = 29.9 ± 5.6 yrs.

The risk of poor antenatal care attendance was significantly higher in women with an unintended pregnancy in the unadjusted (COR = 3.4, 95%CI = 2.0–5.8) and adjusted models (AOR = 2.8, 95% CI = 1.5–5.4) (Table 2).

Comment

In this study, women with a poor antenatal care attendance had threefold higher odds of suffering physical IPV during pregnancy. Given the magnitude of IPV during pregnancy [4–8], antenatal care has been considered an important window of opportunity to identify women experiencing violence. The repeat visits during pregnancy allow for the development of trust and confidence

Table 2
Univariate and multivariate regression models for poor antenatal care attendance.

	Poor antenatal care attendance			
	N	Fr (%)	COR (95% CI)	AOR (95% CI)
Psychological IPV				
No	566	44 (8)	1	1
Yes	149	29 (20)	2.9 (1.7-4.8)*	1.6 (0.9-3.1)
Physical IPV				
No	689	63 (9)	1	1
Yes	26	10 (39)	6.2 (2.7-14.3)*	3.3 (1.1-9.4)*
Age (years)				
<20	30	7 (23)	1	1
20-24	101	14 (14)	0.5 (0.2-1.5)	0.7 (0.2-2.4)
25-29	199	22 (11)	0.4 (0.2-1.1)	0.9 (0.3-3.2)
30-34	275	19 (7)	0.2 (0.1-0.6)	0.7 (0.2-2.6)
35-39	120	8 (7)	0.2 (0.1-0.7)	0.8 (0.2-3.3)
≥ 40	31	1 (3)	0.1 (0.1-0.9)	0.2 (0.0-2.4)
Relationship				
Married	497	35 (7)	1	1
Committed	106	16 (15)	2.4 (1.3-4.4)*	1.2 (0.5-2.5)
Non- committed	170	24 (14)	2.2 (1.3-3.8)*	0.7 (0.3-1.6)
Schooling (years)				
<7	292	39 (13)	1	1
7 – 12	376	29 (8)	0.5 (0.3-0.9)*	0.6 (0.3-1.0)
>12	106	7 (7)	0.5 (0.2-1.1)	0.7 (0.3-1.9)
Employment				
Housewife	169	21 (12)	1	1
Unemployed	161	23 (14)	1.2 (0.6-2.2)	1.3 (0.6-2.8)
Employed	430	29 (7)	0.5 (0.3-0.9)*	0.8 (0.4-1.7)
Student	14	2 (14)	1.2 (0.3-5.6)	0.4 (0.0-3.7)
Nationality				
Spanish	707	63 (9)	1	1
Other	69	13 (19)	2.4 (1.2-4.6)*	1.5 (0.7-3.3)
Cohabitation				
Partner	705	61 (9)	1	1
Others	70	14 (20)	2.6 (1.4-5.0)*	1.2 (0.5-3.0)
Kin support				
Yes	736	67 (9)	1	1
No	36	6 (17)	2.0 (0.8-5.0)	1.0 (0.3-3.0)
Intended pregnancy				
Yes	656	49 (8)	1	1
No	116	25 (22)	3.4 (2.0-5.8)*	2.8 (1.5-5.4)*

IPV = Intimate partner violence; COR = crude odds ratio; AOR = adjusted odds ratio.
* Significant 95% CI (does not include COR or AOR null value).

between the mother and the healthcare provider [5]. Clinicians should be vigilant about mothers who have poor attendance for antenatal care.

The strength of our study is that it was a population-based study to identify IPV during pregnancy with a validated tool in the local language and midwives trained for data collection. The study sample provided data with a high (>90%) response rate. However, the small numbers of events and outcomes, and the refusal to fill out questionnaires should always be a feature in the methodological consideration. Empirically, the low proportion (<5%) of lost data should reassure about a minimum or non-existent effect on the validity of our results [8].

In this research, differences in population between public and private hospital and the association between IPV and stillbirth rate were not analysed, the latter was considered an exclusion to participate. In addition, the use of alcohol or related drugs was not included in the regression model, features that should be considered by future research. Another potential limitation of the study is that IPV was assessed during the immediate postpartum period, when women tend to feel particularly vulnerable and violence may have been underreported [21]. In our study, poor antenatal care attendance was associated to physical IPV during pregnancy in a model adjusted for the influence of socio-demographic and obstetric characteristics. This adds to the internal validity of our findings, which merit consideration.

Poor antenatal care is frequently studied in developing countries [22–24] where efforts are focused on reduction in maternal morbidity and mortality. Poor ANC is also studied in high-income countries focusing in women with immigrant background [25,26] or in socially disadvantages groups [12,13]. Our research, a population-based study in a high-income country [27], is in a setting where lifetime IPV prevalence is lower (physical IPV = 12.5%; psychological IPV = 25%) than the European mean (physical IPV = 22%; psychological IPV = 35%) [28]. This difference may have implications for generalisability of our findings. Despite the free and well-integrated antenatal care services as part of the public health system, almost 10% of the women did not attend the minimum stipulated number of antenatal visits [29]. We also documented an association between unintended pregnancy and poor antenatal care, a feature that has been previously demonstrated to be associated with IPV during pregnancy [30]. Therefore, women who report an unwanted or mistimed pregnancy should be considered a risk group of poor antenatal care and IPV during pregnancy.

The key role of the health care professionals in identifying IPV during pregnancy should be recognised [31], particularly during antenatal care. Early detection of IPV must be followed by proper multidisciplinary input to protect the survivors [32]. Experience of IPV during pregnancy affects the adequate use of antenatal care services. Obstetricians, midwives and other allied health care professionals must act as active screeners to identify IPV in cases of poor antenatal clinic attendance.

Conflicts of interest

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.ejogrb.2019.05.001.

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