

Domestic violence: prevalence in pregnant women and associations with physical and psychological health

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Abstract

Objectives: To examine the prevalence of domestic violence (DV) and its associations with obstetric complications and psychological health in women on antenatal and postnatal wards. **Study design:** A cross-sectional survey conducted in an inner-London teaching hospital. Two hundred English-speaking women aged 16 and over, were interviewed between July 2001 and April 2002. The Abuse Assessment Screen was used to assess for experiences of DV. Depression was assessed using the Edinburgh Postnatal Depression Scale (EPDS). The analysis of predictors of obstetric complications grouped together those known to be associated with DV. **Results:** 23.5% of women had lifetime experience of DV, 3% during the current pregnancy. Women with a history of DV were significantly more likely to be single, separated or in non-cohabiting relationship and to have smoked in the year prior to and/or during pregnancy. Higher EPDS scores were significantly associated with DV, single, separated or non-cohabiting status, and obstetric complications. Both a history of DV and increased EPDS scores were significantly associated with obstetric complications after controlling for other known risk factors. **Conclusions:** Domestic violence is regarded as an important risk marker for the development of obstetric complications and depressive symptomatology. This finding of itself justifies training and education of maternity health professionals to raise awareness.

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1. Introduction

Although domestic violence (DV) occurs frequently and can adversely affect pregnancy, health professionals rarely enquire about abuse. This study examines the prevalence of domestic violence and its associations with obstetric complications and psychological health in women on antenatal and postnatal wards. Domestic violence refers to physical, sexual or psychological violence against a woman perpetrated by a current or former partner. Violence during pregnancy occurs more frequently than some routinely screened for obstetric complications, including pre-eclampsia and gestational diabetes [1]. Studies outside the UK have estimated that between 5.2 [2] and 22% [3,4] of pregnant women are abused by their partners, and one recent UK study reported the prevalence as 2.5% [5]. Variation in

estimates is largely due to differences in definitions of violence, when and how many times women are asked and the population studied [6].

Violence during pregnancy poses a threat to health and at its extreme can result in the death of the mother and her unborn child [7]. The relationship with adverse pregnancy outcomes may occur through direct and indirect mechanisms [8,9]. Adverse pregnancy outcomes could also be the result of associated factors such as smoking, illicit drug use, alcohol use, late initiation of antenatal care, rapid repeat pregnancy, a lack of social support, low socio-economic status, anxiety and depression [10]. However, some studies have established an association between violence and delivery of low birth weight infants even when controlling for these known risk factors [11–13].

Various UK health professional bodies have developed guidelines for assessing domestic violence in health settings [14,15] emphasising the need to offer advice and referral to community resources. There is little evidence that these recommendations are being implemented [16,17]. A recent review of screening and intervention studies highlights the lack of good quality research evidence for the effectiveness

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of interventions in health settings, [18] which may explain some of the professional reluctance. Because of the overlap between risk factors for poor outcome and the difficulties screening the general pregnant population [5], the aim of this study was to examine the prevalence of domestic violence and its associations with psychological and physical health outcomes in antenatal women with traditional “medical” complications and postnatal women without.

2. Materials and methods

2.1. Participants

The study used a researcher (LB) and a cross-sectional survey of English-speaking women, aged 16 and over, receiving care on the postnatal and antenatal wards at Guy’s and St. Thomas’ maternity service between July 2001 and April 2002. This is an inner-London teaching hospital and tertiary unit delivering ca. 5500 women per year with high rates of prematurity (7%, <37 weeks) in the local population. There are approximately 140 admissions to antenatal ward per month. Women on the postnatal wards were generally discharged within 12 hours unless delivered surgically or there were complications with the mother or baby.

Women were initially informed that the research was to assess women’s health during pregnancy and consent was obtained sequentially. Women who agreed to participate were taken to a private room away from the wards and given a full explanation. All information was confidential, unless women indicated that there was a risk of harm to an existing child. Participants were offered a £10 gift voucher afterwards in recognition of their assistance and contact cards with information about local support organisations. Women who disclosed domestic violence were given additional time to discuss this, and were asked whether they wished it to be communicated to a health professional.

2.2. Instruments

A semi-structured interview schedule elicited information on demographics, domestic violence, obstetric complications experienced during pregnancy, current depression, health risk behaviours and use of health services. Civil status was coded as a dichotomous variable: “married or cohabiting” and “single, separated, or in a non-cohabiting relationship”. Ethnicity was collapsed into three categories due to the small numbers in some ethnic groups: “Black”, “White” and “other”. Employment was coded as “in paid employment/on maternity leave” or “unemployed/in receipt of sickness benefit”. Socio-economic classification was derived using the Standard Occupational Classification, volumes 1 and 2 [19,20] using the categories: “managerial and professional occupations,” “intermediate occupations” and “routine and manual occupations (including the long-term unemployed)”. Alcohol use was coded as “14 or more

units per week in the year before pregnancy or any amount during pregnancy” and “less than 14 units per week in the year before pregnancy or non-drinker”. Smoking was coded as “smoking any amount in the year before or during the current pregnancy” and “non-smoker”. Use of illicit drugs was coded as a dichotomous “yes/no” variable.

Women were asked about any obstetric complications they had experienced requiring admission or a visit to the Assessment Unit. A review of the literature identified commonly cited physical outcomes that have been associated with experiences of violence, either during or outside pregnancy. These complications were grouped together to form a single dichotomous variable which included: poor obstetric history (defined as any history of pregnancy losses), abdominal pain, bleeding before 37 weeks, urinary tract infection, premature rupture of membranes, spontaneous premature labour, diminished fetal movements, growth retardation, false labour, hyperemesis, backache and headache. This group was selected for the analysis of predictors of obstetric complications.

Experiences of domestic violence were assessed using a variation of the Abuse Assessment Screen [21]. Women were asked, “As an adult, have you ever been physically hurt or abused by someone important to you?” “In the year before you became pregnant, were you hit, slapped, kicked or otherwise physically hurt by someone?” “Since you became pregnant, have you been hit, slapped, kicked or otherwise physically hurt by someone?” and “As an adult, have you ever been made to have sex when you didn’t want to by someone?” Women who disclosed violence were asked to identify the perpetrator of the abuse, the frequency with which they experienced violence both in the year before and during pregnancy, and whether the violence had changed in frequency or severity since becoming pregnant. They were also asked to identify the location and type of any injuries they sustained during pregnancy. Women who reported physical or sexual violence by a current or former partner/husband or family member, were coded as positive for a history of domestic violence.

Women completed the Edinburgh Postnatal Depression Scale (EPDS), originally developed for postnatal use, [22] but now validated for use during pregnancy [23]. A cut off score of 14/15 was used antenatally, as recommended [23] because of the high levels of dysphoria in pregnancy, and 12/13 postnatally.

2.3. Statistical analyses

The Statistical Package for the Social Sciences (SPSS, version 10.0 for Windows) was used to analyse the data [24]. The χ^2 test was used to examine the association between domestic violence and obstetric complications. Adjusted χ^2 (Yates’ continuity correction) was used for all two by two tables, except where there were expected counts less than 5, in which case Fisher–Irwin Exact Test was used. Pearson’s χ^2 was used for all two by n ($n > 2$) tables if >25% of

expected counts were greater than 5, otherwise Fisher–Irwin Exact Test was used. The *t*-test was used to compare means between the groups for data measured at the ratio level. Multiple logistic regression was used to explore predictors of having specific obstetric complications whilst controlling for confounding factors. Confounders were included in the regression model if they were significantly associated with the dependent variable at $P < 0.1$ or known to have an effect on the dependent variable.

3. Results

3.1. Response rates and demographic data

Between July and December 2001, 1491 women were admitted to the postnatal wards, of whom 1038 (69.6%) were approached and 106 (10.2%) agreed to participate. Between January and April 2002, 367 women were admitted to the antenatal ward, of whom 160 (43.6%) were approached and 92 (57.5%) agreed to participate. A further two women were opportunistically recruited from the Day Assessment Unit. The 200 women recruited had a mean age 30.6 (S.D. = 5.8; range = 17–44), 112 (56.0%) were White, 160 (80.0%) were married or cohabiting and 127 (63.5%) were in paid employment or on maternity leave.

3.2. Prevalence of domestic violence and associations

Forty-seven (23.5%) women reported a lifetime history of domestic violence. The perpetrators were a current partner or husband (5, 10.6%); an ex-partner or husband (35, 74.5%); and a family member (7, 14.9%). Of these 47 women, five (10.6%) reported domestic violence in the year before pregnancy which occurred everyday or nearly everyday ($n = 1$), once a month ($n = 1$) and less than once a month ($n = 3$). Eleven (23.4%) of the 47 women reported being forced to have sex, all of whom cited an ex-partner or husband as the perpetrator. Sexual violence occurred during the current pregnancy in two cases.

Six women (3%) reported domestic violence during the current pregnancy, which occurred everyday or nearly everyday ($n = 1$), once or twice a week ($n = 2$) and less than once a month ($n = 3$). Types of injury sustained amongst these six women are shown in Table 1.

Women who reported a history of domestic violence were significantly more likely to be single, separated or in a non-cohabiting relationship compared to women with no history of domestic violence (18/47, 38.3% versus 22/153, 14.4%; $\chi^2 = 11.4$, d.f. = 1, $P = 0.001$). There were no significant associations between domestic violence and ethnicity ($\chi^2 = 2.0$, d.f. = 2, $P = 0.4$), unemployment ($\chi^2 = 2.3$, d.f. = 1, $P = 0.1$), or socio-economic classification ($\chi^2 = 0.7$, d.f. = 2, $P = 0.7$), or age ($t = 0.3$, d.f. = 198, $P = 0.7$).

Women who reported a history of domestic violence were significantly more likely to have smoked in the year before

Table 1

Type of injury sustained during the current pregnancy

Type of injury	<i>n</i>
Threats of violence or threats with a weapon	3
Slapping, pushing; no injuries and/or lasting pain	5
Punching, kicking, bruises, cuts and/or lasting pain	1
Beaten up, severe contusions, burns, broken bones or teeth	0
Head injury, internal injury, and/or permanent injury	1
Use of a weapon, wound from a weapon or object used as a weapon	1

Values are given as *n*. Multiple responses were recorded.

pregnancy and/or during the current pregnancy compared to women with no history of domestic violence (21/47, 44.7% versus 40/153, 26.1%; $\chi^2 = 5.0$, d.f. = 1, $P = 0.03$). However, no significant association was found between having a history of domestic violence and illicit drug use (5/47, 10.6% versus 13/153, 8.5%; $P = 0.8$) or alcohol use (9/47, 19.1% versus 37/153, 24.2%; $\chi^2 = 0.3$, d.f. = 2, $P = 0.6$).

Of the 94 antenatal women, 28 (29.8%) disclosed domestic violence compared to 19 (17.9%) of the 106 postnatal women. Disclosure of domestic violence was not related to antenatal or postnatal status ($\chi^2 = 3.3$, d.f. = 1, $P = 0.07$).

3.3. Current depression

Higher EPDS scores were significantly associated with a history of domestic violence (9.2 versus 7.7.2; $t = 2.8$, d.f. = 186.4, $P = 0.006$, 95% CI = 0.6, 3.5) single, separated or non-cohabiting (10.8 versus 7.9; $t = 3.1$, d.f. = 198, $P = 0.002$, 95% CI = 1.0, 4.7) and the selected obstetric complications (9.2 versus 7.2; $t = 2.8$, d.f. = 186.4, $P = 0.006$, 95% CI = 0.5, 3.5). Forty (20%) women in the sample met the criteria for clinical caseness on the EPDS. Clinical caseness for depression was significantly associated with being single, separated or non-cohabiting (13/40, 32.5% versus 27/160, 16.9%; $\chi^2 = 4.0$, d.f. = 1, $P = 0.05$), but not with domestic violence (12/47, 25.5% versus 28/153, 18.3%; $\chi^2 = 0.8$, d.f. = 1, $P = 0.4$) or with obstetric complications during pregnancy (32/142, 22.5% versus 8/58, 13.8%; $\chi^2 = 1.5$, d.f. = 1, $P = 0.2$).

3.4. Obstetric complications

One hundred and twenty-seven women (63.5%) had experienced at least one of the selected obstetric complications and were significantly more likely to report a history of domestic violence (39/127, 30.7% versus 8/73, 11.0%; $\chi^2 = 9.0$, d.f. = 1, $P = 0.003$).

Table 2 shows the types of complication reported by domestic violence status. No significant association was found between the individual obstetric complications and domestic violence. Seven factors were entered into a forward conditional logistic regression to explore predictors of the grouped complications, which formed the dichotomous dependent variable. These were: age, smoking in the year

Table 2
Types of obstetric complication reported by domestic violence status

Obstetric complication	History of domestic violence (<i>n</i> = 47)	No domestic violence (<i>n</i> = 153)	Total (<i>n</i> = 200)
Poor obstetric history ^a	3 (6.4)	4 (2.6)	7 (3.5)
Abdominal pain	13 (27.7)	23 (15.0)	36 (18.0)
Bleeding before 37 weeks	15 (31.9)	31 (20.3)	46 (23.0)
Premature rupture of membranes	4 (8.5)	12 (7.8)	16 (8.0)
Non-induced premature labour	3 (6.4)	8 (5.2)	12 (6.0)
Induced premature labour	1 (2.1)	0 (0.0)	1 (0.5)
Diminished fetal movements or growth retardation	8 (17.0)	27 (17.6)	35 (17.5)
Hypertension	10 (21.3)	22 (14.4)	33 (16.5)
Significant backache, headache or hyperemesis	9 (19.1)	17 (11.1)	26 (13.0)
False labour	1 (2.1)	3 (2.0)	4 (2.0)
Anaemia	1 (2.1)	1 (0.7)	2 (1.0)
Gestational diabetes	2 (4.3)	2 (1.3)	4 (2.0)
Pre-eclampsia	2 (4.3)	6 (3.9)	8 (4.0)
Urinary tract infection	3 (6.4)	7 (4.6)	10 (5.0)
Other complications ^b	2 (4.3)	22 (14.4)	24 (12.0)

Values are given as *n* (%).

^a Defined as a history of pregnancy losses.

^b Refers to oedema, lupus, epilepsy, maternal or fetal cardiac problems, itching, oligohydramnios, polyhydramnios, lung clot, cranial fibre dysplasia, separation of symphysis pubis and chest infection.

before or during the current pregnancy, 14 or more units of alcohol per week in the year before pregnancy or any amount during the current pregnancy, history of domestic violence, socio-economic classification, EPDS score and civil status. Only domestic violence history (OR = 3.2, 95% CI = 1.4, 7.3; *P* = 0.007) and increased EPDS scores (OR = 1.1, 95% CI = 1.0, 1.1; *P* = 0.05) were significantly associated with having these obstetric complications. The same logistic regression was performed again, including an interaction effect between domestic violence and depression, as indicated by a score of caseness on the EPDS. Only a history of domestic violence emerged as being significantly associated with the combined obstetric complications (OR = 3.6, 95% CI = 1.6, 8.2; *P* = 0.002).

4. Comment

One in four women in this study had a lifetime experience of domestic violence, which is consistent with general population studies [25] but lower than a recent British study of women attending General Practice surgeries, in which 41% reported a history of physical or sexual violence by a current or former partner [26]. Three percent of women had experienced domestic violence in the current pregnancy, which is similar to some studies [3,27] but lower than others [28]. Given the general reluctance of women to disclose [29] it is likely to be an underestimate. Some authors have suggested that domestic violence may commence, or escalate in severity during pregnancy [30]. Although only six women reported abuse during the current pregnancy, two had not experienced domestic violence before, and one reported an increase in frequency and severity since becoming pregnant.

The low total participation rate of 17% must be considered a limitation, but reflects known particular difficulties encountered on postnatal wards [2], due to lack of private interviewing space, women being tired, or preoccupied with their baby or visitors, or preparing to go home with early discharge. On the antenatal ward women were admitted for longer, generally welcomed the opportunity to be involved in the study and the participation rate was 57%. Additional reassurance that the overall low response rate is unlikely to have biased the results is that no women withdrew once they were made fully aware of the nature of the research in stage two of obtaining consent.

The finding that one in five women have levels of depressive symptoms corresponding to a clinical diagnosis of depression, is also consistent with previous work [31]. A history of domestic violence and depressive symptoms (but not clinical depression), were significantly associated with antenatal admission for obstetric complications, even after controlling for the effects of other risk factors such as smoking, alcohol use, age, socio-economic and civil status. The relationship between lifetime history of domestic violence and poor obstetric outcome is difficult to explain since the majority of women claimed that the violence had stopped over a year before becoming pregnant. It is possible that some women who reported previous violence were still experiencing it during the current pregnancy, but were reluctant to admit it. The cumulative effects of abuse may predispose women to a range of physical and psychological health problems beyond the time of the abuse [32,33].

There is an association between psychological well being and physical health during pregnancy. Symptoms of depression and anxiety may be associated with poor self-care and with adverse physical health outcomes [34]. In this study, higher levels of depressive symptoms on the EPDS were

significantly associated with obstetric complication. Although depressive symptoms were also associated with a history of domestic violence, their effect on obstetric complications is separate and independent.

Social and environmental factors can also contribute to physical and psychological health problems in women during pregnancy [35]. Lack of social support and self-neglect have been identified as predictors of poor obstetric outcome [4]. In this study, we found that domestic violence, single, separated or non-cohabiting status and increased depressive symptoms co-occurred. These factors are likely to influence women's perceptions, tolerance and responses to their physical health, as well as increasing the likelihood of behaviours that might potentially jeopardise their health and pregnancy, such as smoking and drinking, poor diet and intermittent antenatal care.

Previous studies have found that women who experience domestic violence are more likely to begin their antenatal care late or describe their pregnancy as unwanted or unplanned [36]. Inadequate care during pregnancy may lead to complications or exacerbate pre-existing problems, which result in admission to hospital. Women with an unwanted pregnancy are less likely to look after themselves or regularly attend appointments.

It is important for midwives, GPs and obstetricians to be aware of the associations, both of previous and current domestic violence with poor obstetric outcome and emotional disturbance, even that which falls short of clinical depression. This study has also confirmed that being single or separated, is an important predictor of depressive symptoms, whilst refuting associations of domestic violence with ethnicity, social class or unemployment. Raising awareness of the significance of these problems may improve care, support and even outcomes for women and their newborns. As yet, there have been no studies examining the impact of domestic violence interventions on the health of women during and after pregnancy. Attention needs to be paid to creating the time and physical environment, particularly if enquiring or intervening postpartum, which enables midwives and obstetricians to discuss domestic violence in a private and confidential setting.

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