PREVALENCE OF PHYSICAL VIOLENCE AGAINST PREGNANT WOMEN AND EFFECTS ON MATERNAL AND BIRTH OUTCOMES

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Abstract- Violence and the threat of violence against pregnant women are main barriers to women's empowerment and equal participation in society. When stress and violence increase in developing societies, women's safety in the home, workplace and community is often seriously affected. To determine the prevalence of physical abuse in pregnant women and to assess association between physical violence during pregnancy and maternal complications and birth outcomes, we used clinic-based data from a sample of 403 women who delivered live born infants during the summer of 2002 in our hospital. Data of physical violence against women's during pregnancy and 3 months before that were based on questionnaire and interview. Outcomes data including antenatal hospitalization, labor and delivery complications were obtained from the records. Prevalence of physical violence during pregnancy was reported as 10.7%. Prevalence of experience of physical abuse 3 months before pregnancy was 11.9%. Women who experienced physical violence compared with those not reporting abuse were more likely to be smoker and hospitalized before delivery for maternal complications such as preterm labor, kidney infections, premature rupture of membranes and vaginal bleeding with pain. There was a significant association between physical violence and low birth weight and mother's education. Physical violence during pregnancy is common and is associated with maternal complications and adverse birth outcomes. We suggest including methods to determine frequency of violence during pregnancy and assessment of violence in pregnancy by a screening program integrated in prenatal care.

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Key words: Physical violence, pregnant women, maternal outcomes, birth outcome

INTRODUCTION

Violence against women and girls is a major health and human rights concern. Women can experience physical or mental abuse throughout their life, in infancy, childhood, and/or adolescence, or during adulthood or older age. The Declaration on the Elimination of Violence against Women (1993) defines violence against women as "any act of gender-based violence that results in, or is likely to result in, physical, sexual, or mental harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life" (1).

According to a review, the prevalence of women experiencing violence during pregnancy has been estimated to be between 0.9% and 20.1%, while the prevalence of violence at any time ranges from 9.7% to 29.7% (2). Some studies have documented a rate of abuse during pregnancy of 5.5-17% (3-6). Prevalence of physical violence during pregnancy have been reported from 0.9% to 20% (2). Variation in prevalence estimates may also depend on several factors that are both clinically relevant and methodologically important : when women are asked

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(if early in pregnancy, later abuse may be missed; if at delivery, women may be under enormous stress and even more invested in the relationship), how many times women are assessed (once or more during pregnancy), who asks them and whether they are assessed in a face-to-face interview, a telephone survey or a self-administered questionnaire.

Although many epidemiologic studies of violence during pregnancy report the prevalence of violence during the pregnancy under investigation as well as the prevalence of having a history of experiencing violence, few have specified a time period that excludes periods of pregnancy. Having a history of violence may mean ever experiencing violence, experiencing it during the year preceding a prenatal interview, or experiencing it during the 12 months preceding birth. In some studies, 12% to 14% of women reporting violence during pregnancy did not experience it prior to their current pregnancy (7, 8). By contrast, some studies have shown the proportion of women experiencing violence during pregnancy also experienced it before becoming pregnant (6). Anyway, one reason why violence has largely been ignored as a public health issue has been the lack of clear definition of the problem (9).

Accurate and complete data on violence are needed at the community, national and international levels to strengthen advocacy efforts, help policy makers understand the problem and guide the design of interventions. Violence tends to worsen during pregnancy and has been associated with miscarriage, premature labor, low birth weight and fetal injury and death (10).

Pregnancy is distinguished from other situations by the broader health consequences of violence, because the fetus is also at risk and the more severe violence that women experience during pregnancy. An understanding of the relationship between physical violence during pregnancy, adverse maternal conditions and birth outcomes could have important clinical and public health implications (11).

We conducted the current study to determine the rate of physical violence and associated maternal and birth outcomes in a sample of adult women delivered live-born infants.

MATERIALS AND METHODS

This cross-sectional study was performed in Akbarabadi Hospital, Tehran, Iran, from February to December 2002. We calculated that we needed to recruit 403 delivered women to show an estimated 50% violence rate in pregnancy and to be significant at the 0.05 level between women who had experienced physical violence within the previous 12 months and 0.05 precision of estimation. The sample consisted of consecutive pregnant women attending the hospital for delivery during time periods randomly selected for data collection.

Women were eligible to participate if they were Iranian, were able in Farsi, were over 14 years and delivered live-borne infants after 20 weeks gestational age. We interviewed women at least 6 hours after delivery. A self administered questionnaire was designed based on primary care in psychiatry (12) for physical violence in pregnancy and 3 months before that. The first part of the questionnaire consisted of 19 items about demographic characteristics of women, extracted from primary care form. The second part consisted of 10 questions about physical violence. The questions looked at different aspects of domestic violence (grabbing or shoving, punch on body/arms/legs, punch in the face, kick on the floor by partner, and threatening behavior such as threatening with object, with hand or throwing things by partner). Physical violence was defined as any type of physical insult from partner.

Trained interviewers recruited women who delivered in delivery room. The survey did not include additional questions on timing, severity, and frequency of violence during pregnancy or any questions about emotional or sexual violence by partner during pregnancy. In the survey, women were asked about hospitalization before delivery; causes were categorized as high blood pressure, urinary infections, fever, nausea, vomiting, vaginal bleeding, placenta problems, rupture of membranes, trauma due to falls and abdominal trauma and threatened abortion.

Birth certificates provided information on complications of labor and delivery (including type of delivery, gestational age, interval from previous pregnancy, birth weights, regular prenatal care). Some questions were about potential confounders of

association between violence during pregnancy (such as maternal complications, maternal age and education, number of previous children, adequacy of prenatal care, smoking during last trimester of pregnancy). The questionnaire was piloted in one practice, after which minor changes were made to the wording and layout.

The data were analyzed using SPSS. We report univariate analyses performed with the Chi square test for frequencies and odds ratio for showing severity of associations. Logistic regression analyses were used to identify variables that were significantly related to physical violence.

The study was approved by the researches section of Iran University of Medical Sciences. We obtained informed consent from all participants.

RESULTS

We interviewed 403 women. All were urban residents receiving prenatal care in public clinics. The ages of the women ranged from 15–45 years, with a mean of 25.7 (± 5.79). Subjects' characteristics are shown in table 1.

Physical violence (being physically hurt by husband) within the 9 months of pregnancy was reported by 10.7% of women. The prevalence of physical threats at that time was almost twice as high as the prevalence of physical violence (23.4%). The prevalence of physical violence and physical threats during the 3 months before pregnancy were 11.9% and 25.4%, respectively. Table 2 shows the prevalence of reporting physical violence based on sociodemographic and maternal behavioral characteristics, along with the adjusted prevalence odds ratios with 95% confidence intervals for the association between violence and maternal characteristics.

Women with greater odds of physical violence had characteristics associated with greater risks for adverse pregnancy outcomes (*e.g.*, low education, short interval between two pregnancies, smoking during pregnancy, lack of prenatal care, unwanted pregnancy and taking drug during pregnancy). The prevalence of self-reported maternal morbidity among women who experienced violence during pregnancy is presented in table 3.

Table 1. Characteristics of women answering a questionnaire about physical violence*

Characteristic	Women (n = 403)
Job	
Housewife	383 (95.1)
Worker	11 (2.7)
Clerk	9 (2.2)
Literacy	
Illiterate	53 (13.1)
≤ 5 years	131 (33)
5–12 years	210 (51.6)
Academic	9 (2.2)
Number of previous children	
< 3	104 (25.8)
≥ 3	299 (74.1)
Duration with previous pregnancy (year)	
< 3	76 (18.8)
≥ 3	327 (71.1)
Time of prenatal care	
After first trimester	82 (20.3)
Before first trimester	327 (79.6)
Smoking during pregnancy	
Yes	19 (4.71)
No	384 (95.2)
Drug usage without prescription	
Yes	32 (7.94)
No	370 (91.8)
Pregnancy intent	
Wanted	126 (31.2)
Unwanted	277 (68.7)
Type of delivery	
Cesarean section	116 (28.7)
Vaginal	287 (71.2)

*Data are given as number (percent).

After adjustment for confounding factors, the following maternal conditions leading to hospitalizations were found to be associated with reporting physical violence: vaginal bleeding with pain (P = 0.005), urinary infections (P = 0.007) and nausea and vomiting (P = 0.01).

The prevalence of complications of labor and delivery and birth outcomes are given in table 4. After controlling for confounders, there was a significant association between physical violence and premature rupture of membranes (P = 0.005), low birth weight (P = 0.005) and preterm birth (P = 0.003).

Table 2. Prevalence of physical violence during pregnancy by selected maternal characteristics*

Variables	Physical Violence (n = 43)	No physical Violence (n = 360)	OR (95% CI)
Age (year)			
< 20	11 (15.6%)	64 (17.8%)	1.58 (0.98-3.21)
≥ 20	32 (74.4%)	296 (82.2%)	
Education (year)			
< 12	35 (81.3%)	262 (72.7%)	1.63 (1.37-5.71)
≥ 12	8 (18.6%)	98 (27.3%)	
Occupation			
Housekeeper	38 (88.4%)	345 (96.1%)	0.33 (0.28-0.77)
Has job	5 (11.6%)	15 (93.9%)	
Number of previous children			
< 3	16 (37.2%)	88 (24.4%)	1.83 (0.8-1.6)
≥ 3	27 (62.8%)	272 (75.6%)	
Interval from previous pregnancy (year)			
< 3	18 (41.8%)	58 (83.9%)	3.74 (2.01-5.07) †
≥ 3	25 (58.1%)	302 (16.1%)	
Time of prenatal care			
After first trimester	16 (37.2%)	66 (18.3%)	2.63 (1.98-6.72) †
Before first trimester	27 (62.8%)	294 (91.7%)	
Smoking during pregnancy			
Yes	6 (14%)	13 (3.4%)	4.32 (2.79-9.07) †
No	37 (86%)	347 (96.6%)	
Drug usage without prescription			
Yes	14 (32.5%)	18 (5%)	9.1 (6.51-16.72) †
No	29 (67.5%)	342 (95%)	
Pregnancy intent			
Wanted	30 (69.8%)	96 (26.5%)	6.3 (2.07-9.01) †
Unwanted	13 (30.2%)	264 (73.5%)	

Abbreviations: OR, odds ratio; CI, confidence interval.
*Data are given as number (percent).
† Odds ratios were adjusted for education and occupation.

Table 3. Association between maternal morbidity and physical violence during pregnancy*

Cause of maternal hospitalization	Physical Violence (n = 43)	No physical Violence (n = 360)	*P* value†
Vaginal bleeding with pain	8 (18.6%)	6 (1.7%)	0.005
Vaginal bleeding without pain	2 (4.7%)	13 (3.6%)	0.73
Urinary infection	5 (11.6%)	11 (3.1%)	0.007
High blood pressure	3 (7%)	16 (4.4%)	0.45
Threatened abortion	4 (9.3%)	17 (4.7%)	0.2
Nausea and vomiting	4 (9.3%)	9 (2.5%)	0.017

*Data are presented as number (percent).
†Adjusted for education, duration with previous pregnancy, time of prenatal care, smoking and medication without prescription.

Table 4. Association between maternal complication during labor, delivery and birth outcomes, and physical violence*

Outcome	Physical violence (n = 43)	No physical violence (n = 360)	Sig
Cesarean delivery	21 (48.8%)	134 (37.2%)	0.139
PROM	6 (14%)	8 (2.3%)	0.0005†
Low birth weight	14 (32.5%)	41 (11.3%)	0.0005†
Preterm birth	19 (44.1%)	61 (16.9%)	0.003†

Abbreviations: PROM, premature rupture of membranes; Sig, significant.
*Data are presented as number (percent).
†Adjusted for confounding variables.

DISCUSSION

The percentage of women who had experienced physical violence in our study was 10.7%. This estimate of physical violence during pregnancy falls within the range of prevalence estimates reported by some (2, 13) but more than others (14, 15). In a study among women attending general hospital practice in London, physical violence had been experienced by 17% of women within the past 12 months, and in this period risk of physical violence will be doubled (12). Because of lack of standardized definition and the fact that some women are unwilling to disclose violence and social stigma of violence, measuring of this problem against women is difficult. Thus the best prevalence estimates are probably underestimates.

Percentage of women who had experienced physical violence within 3 months before pregnancy was 11.9%. One of the important predictor factors of violence in pregnancy is violence against women before pregnancy. Some studies have shown that, women who experienced violence before pregnancy, reported physical violence in pregnancy more than others (2, 16, 17).

Physical violence during pregnancy was a significant risk factor for low birth weight and preterm birth and premature rupture of membranes. These findings were similar to those in other studies (18, 19). Further research is needed to determine how violence can affect birth outcomes. Of the self-reported maternal conditions leading to antenatal hospitalization, kidney infections, vaginal bleeding with pain and nausea and vomiting were associated with physical violence during pregnancy. Trauma research studies showed that severe physical trauma to the maternal abdomen might lead to hospitalization that might cause premature labor or delivery (18, 20). In this study physical violence was associated with maternal smoking, education and timing of prenatal care. These suggest the need for early identification of intimate-partner violence among pregnant women and the need for appropriate interventions and providing shelters for persons who have experienced domestic violence.

We found that pregnant women are at risk of physical violence from their partners. This could support a case for selective screening in antenatal clinics. Pregnancy provides a window of opportunity for abuse assessment and interventions, as many women experience pregnancy and prenatal care. Findings of this report can help in the development of effective public health intervention programs to protect women from violence that endangers them as well as their unborn children.

Conflict of interests

The authors declare that they have no competing interests.

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