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The Association Between Intimate Partner Violence During Pregnancy and Maternal and Neonatal Outcomes: A Cross-Sectional Study

Fahimeh Ghotbizadeh [1], Marjan Ghaemi [2], Zahra Panahi [2], Nasim Eshraghi [2], Mohammad Piri [2] and Razieh Akbari [2,*]

[1] Fetal and Neonatal Research Center, Family Health Research Institute, Tehran University of Medical Sciences, Tehran, Iran
[2] Vali-E-Asr Reproductive Health Research Center, Family Health Research Institute, Tehran University of Medical Sciences, Tehran, Iran

[*] *Corresponding author*: Vali-E-Asr Reproductive Health Research Center, Family Health Research Institute, Tehran University of Medical Sciences, Tehran, Iran. Email: r.akbari@sina.tums.ac.ir

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Abstract

Background: To investigate the association between intimate partner violence during pregnancy and maternal and neonatal outcomes.

Methods: This cross-sectional study was performed on 115 pregnant women referring to an academic center. Demographic data, maternal outcomes (vaginal bleeding during pregnancy, preterm delivery, intrauterine growth restriction, placental abruption, and premature rupture of membrane), and neonatal outcomes (birthweight and Apgar score) were evaluated. Domestic violence against pregnant women was ascertained by a validated domestic violence questionnaire. Finally, the association between domestic violence and maternal and/or neonatal outcomes was investigated.

Results: The prevalence of domestic violence against pregnant women was 67.8%. Psychological violence obtained the highest prevalence (64.3%), followed by economic (34.8%), sexual (18.3%), and physical (12.2%) violence. Regression analysis showed that there was a significant association between domestic violence and preterm labor (P = 0.048, r = 0.385) and between economic violence and placental abruption (P = 0.040, r = 0.391). Also, there was a significant relationship between vaginal bleeding and sexual violence (P = 0.022). Educational level significantly and inversely correlated with economic (r = -0.21) and physical (r = -0.19) violence.

Conclusions: The results of this study indicated that intimate partner violence was commonplace during pregnancy and affected neonatal and maternal outcomes. It is suggested to implement educational programs for healthcare workers and screen all pregnant women for exposure to intimate partner violence to reduce maternal and neonatal complications.

Keywords: Domestic Violence, Psychological Violence, Economic Violence, Sexual Violence, Physical Violence, Maternal Outcome

1. Background

Discrimination and violence against women are universal, trans-historical, and cultural phenomena in all human societies despite differences in religious, economic, and social issues (1, 2). Domestic violence is the most common form of violence with a high likelihood of recurrence, often perpetrated by the nearest family member, which is seldom reported to the police and is associated with enormous social, psychological, and economic complications (3).

The world health organization (4) defines violence against women as any act that can physically, mentally, or sexually harm them and restrict their freedom in life. If this type of behavior occurs within the family and between the husband and wife, it can be interpreted as domestic (or intimate partner) violence (4). Intimate partner violence includes physical, sexual, psychological, and economic aspects (5).

Pregnant women are amongst the most at-risk groups for domestic violence. The incidence or intensity of violence can increase during pregnancy, and many cases of domestic violence actually begin during this period (6, 7). Shifting toward parental roles, changes in communication patterns during pregnancy, decreased sexual relations, and misconceptions about pregnancy can contribute to the incidence of domestic violence during this period (6). In Iran, the average prevalence of domestic violence against pregnant women has been

reported to be 51.5% (8). Domestic violence is associated with adverse pregnancy outcomes such as miscarriage, preterm labor, low birth weight, decreased maternal and neonatal affective communication, intrauterine growth restriction, placental abruption, and perinatal mortality (9-12). Also, women who experience violence during pregnancy are less likely to breastfeed and accomplish their parental roles (13). Domestic violence may increase the rate of mortality and morbidities among mothers, as well as stillbirth and pelvic inflammatory disease (14).

2. Objectives

Due to the high prevalence of domestic violence against pregnant women, it seems necessary to further divulge this issue in Iran. Therefore, we aimed to investigate the effects and consequences of intimate partner violence on maternal and neonatal outcomes.

3. Methods

3.1. Study Setting

This cross-sectional study was conducted on 115 women admitted to the postpartum ward of a teaching hospital in 2021. Postpartum women of any age who had a normal vaginal delivery or cesarean section with a single pregnancy were included. Women with chronic mental or medical diseases (diabetes, hypertension, preeclampsia, and collagen vascular, cardiovascular, or hepatorenal diseases) and those with a history of preterm labor or cervical insufficiency were excluded. Other exclusion criteria were drug or alcohol abuse, multiple gestations, a history of trauma or falling during pregnancy, and delivery before the gestational age of 28 weeks.

3.2. Data Gathering

The participants were selected by convenience sampling. After obtaining informed consent, in the presence of a midwife, data were collected by face-to-face interviews. The interviews were conducted by a trained healthcare worker during hospital admission and in the absence of the partner. Also, complementary data were extracted from hospital records.

Demographic and obstetrical information included age, gravidity, parity, income, the occupation of women and their partners, and level of education. The level of education was categorized into three levels: illiterate, low-educated (high school graduates), and highly-educated (those with academic degrees or university students). Maternal outcomes (vaginal bleeding during pregnancy, preterm delivery, intrauterine growth restriction, placental abruption, and premature rupture of membrane), as well as neonatal outcomes (birthweight and Apgar score), were recorded.

The Domestic Violence Questionnaire (DVQ) was used to assess domestic violence during pregnancy. This tool was already modified to match the cultural and social characteristics of Iranian people by Tabrizi et al. and consisted of 26 questions scored on a 4-point Likert scale. The first 11 items were designed to assess psychological violence; five items were related to economic violence, seven items to physical violence, and three items to sexual violence. Each question had five options (i.e., never, rarely, somewhat, commonly, and always with scores ranging from zero to 4, respectively). The minimum possible score was 60, and the maximum score was 300. A score between 0 and 60 indicated low domestic violence; a score between 60 and 120 reflected moderate domestic violence and a score above 120 was interpreted as high domestic violence. Cronbach's alpha coefficient of this questionnaire has been reported as 83% (15).

3.3. Statistical Analysis

Data were analyzed by SPSS software version 16 using descriptive (frequency, percentage, mean, and standard deviation) and inferential (those pertained to normally-distributed data) statistics. ANOVA and Pearson correlation coefficients were used for data with non-normal distribution. Also, Spearman correlation and chi-square tests were used to assess associations between qualitative variables.

3.4. Ethical Consideration

The protocol of the study was in accordance with the ethical principles of the Declaration of Helsinki. All participants agreed to participate in the study, and written informed consent was obtained from them. The study was approved by the Ethics Committee of Tehran University of Medical Sciences (code of approval: IR.TUMS.IKHC.REC.1397.131).

4. Results

Overall, 115 postpartum women were recruited in the study. The mean age of the participants was 29.80 years (the range of 17 - 44), and 87.8% of the women were younger than their husbands; 7 % of them were older than their spouses, and 5.2% of them were the same age as their

partners. Most of the couples (67.8%) have been married for six years or more. The demographic and obstetrics data have been summarized in Table 1.

Table 1. The Demographic and Obstetrics Data of the Participants

Characteristics	No. (%)
Gravida	
1	30 (26.0)
2	56 (48.6)
> 2	29 (25.2)
Education (women)	
Illiterate	30 (2.6)
Low-educated (high school)	39 (45.2)
Highly-educated (university)	46 (52.2)
Education (men)	
Illiterate	40 (3.5)
Low-educated (high school)	51 (45.2)
Highly-educated (university)	44 (38.3)
Employment (women)	
Employed	5 (4.3)
Unemployed	110 (95.7)
Employment (men)	
Employed	78 (67.8)
Unemployed	37 (32.2)

Maternal and neonatal outcomes have been listed in Table 2. The means ± SDs of gestation age at delivery and neonatal weight were 38 ± 3 weeks and 2974 ± 432 grams, respectively. Regarding the delivery route, 35 (30.4%) women had a vaginal delivery, and 80 (69.6) cases had a cesarean section.

Table 2. Association Between Pregnancy Outcomes and Intimate Partner Violence

Characteristics	No. (%)	r	P-Value
Preterm labor	23 (20)	0.385	0.048
Placenta abruption	6 (5.2)	0.109	0.243
Vaginal bleeding during pregnancy	23 (20.0)	0.039	0.686
Premature rupture of the membrane	26 (22.6)	0.029	0.751
Intrauterine growth restriction	5 (4.3)	0.023	0.809

Intimate partner violence was not observed against 37 (32.2%) women. On the other hand, 71 (61.7%) and 7 (6.1%) women experienced low and moderate domestic violence, respectively. Subgroup scores for different types of domestic violence have been provided in Table 3.

Regression analysis revealed that there was a significant correlation between preterm labor (P = 0.048, r = 0.385) and domestic violence. Other pregnancy outcomes were not significantly associated with domestic violence. Subgroup analysis revealed that psychological violence was not significantly associated with vaginal delivery, preterm labor, intrauterine growth restriction, or premature rupture of the membrane. However, there was a significant correlation between placental abruption and economic violence (P = 0.040, r = 0.391) and between vaginal bleeding and sexual violence (P = 0.022).

Spearman correlation analysis showed that there was a correlation between low birth weight and economic violence against mothers (P = 0.047), but no significant correlation was found with other types of domestic violence. The spouse's income had a significant inverse correlation with economic (P = 0.014) and physical (P = 0.044) violence. In other words, as the spouse's income increased, the rate of economic and physical violence decreased.

Educational level significantly and inversely correlated with economic (r = -0.21) and physical (r = -0.19) violence. In other words, higher education levels reduced the rate of economic and physical violence. Also, there was a significant and inverse correlation between the spouse's level of education and physical violence (r = - 0.23). The occupation of neither women nor their spouses had a significant correlation with any type of domestic violence.

5. Discussion

The results of this study indicated that although the prevalence of domestic violence against pregnant women was high (67.8%), its intensity was low in most cases. The probable reason can be the fact that women receive more support from their husbands during pregnancy, mitigating the intensity of violence. Obvious explanations for the incidence of intimate partner violence during pregnancy may be decreased sexual relations, misconceptions about pregnancy, and abnormal feelings of the spouse (16).

Our findings revealed that the highest prevalence belonged to psychological violence, followed by economic, sexual, and physical violence, respectively. These findings were in line with those of previous studies (17-19). Derakhshanpour et al. conducted a cross-sectional investigation on 500 pregnant and affirmed that psychological violence was the most common type of violence faced by women (54%), followed by verbal (31%), physical (24.8%), and sexual (6.8%) violence (20).

Table 3. Subgroup Scores for Intimate Partner Violence

Violence Subgroup	None	Low	Moderate	High
Psychological violence	41 (35.7)	63 (54.8)	8 (7)	3 (2.6)
Economic violence	75 (65.2)	35 (30.4)	4 (3.5)	1 (0.9)
Physical violence	101 (87.8)	9 (7.8%)	3 (2.6)	2 (1.7)
Sexual violence	94 (81.7)	20 (17.4)	1 (0.9)	0

In the present study, we noticed a significant relationship between economic status and the level of domestic violence against pregnant women. The spouse's income had a significant inverse correlation with economic and physical violence. In other words, as the spouse's income increased, the rate of economic and physical violence decreased. These results were consistent with that of Salehi and Mehrallian (21). In the recent study, the researchers found that domestic violence was not significantly associated with the place of residence (city or village), education, and age at the time of marriage, but with the duration of marriage (significantly higher violence in couples whose marriages lasted more than five years), having a low economic status, and the husband being unemployed or addicted (21). Similarly, another syudy reported that the number of children, level of education, employment status, and antenatal care during pregnancy were associated with exposure to violence during pregnancy (22).

In our study, we observed that domestic violence was significantly correlated with preterm labor and preterm delivery. Violence can directly act as a risk factor for preterm delivery through physical trauma or indirectly through increasing maternal stress, resulting in inadequate access to health care services and risky behaviors such as smoking and using alcohol and drugs, which subsequently lead to adverse maternal and neonatal outcomes (23-25).

In this study, we found a significant association between sexual violence and vaginal bleeding. Consistent with this finding, Hassan et al., in a cohort study on 1300 pregnant women, revealed that domestic violence was significantly linked with the risk of abortion, cesarean delivery, and vaginal bleeding (26). We also observed a significant correlation between economic violence and placental abruption, for which we found no report in previous studies. In other words, an increase in economic violence predicted a rise in the incidence of placental abruption. Nevertheless, it should be noted that this relationship might have been affected by various confounders.

In our study, none of the various types of domestic violence were significantly associated with the type of delivery and hospitalization. However, some studies have acknowledged that domestic violence can affect hospitalization and the type of delivery. Thus, one of the most important consequences of violence can be an increase in the rate of emergency cesarean delivery (17). The probable explanations for the inconsistency between studies may be different sample sizes, study designs, and definitions of domestic violence (27, 28).

Violence during pregnancy is recognized as an important cause of maternal and neonatal mortality (29). The findings of different studies on the relationship between different types of domestic violence and maternal and neonatal outcomes are contradictory. Physical trauma can lead to undesirable pregnancy outcomes, such as placental abruption, premature rupture of membrane, preterm delivery, low birth weight, and abortion (30, 31). The indirect effects of violence due to increased stress in pregnant women should also be considered. Women experiencing violence are exposed to higher levels of stress, affecting hormonal responses and the immune system (32).

5.1. Conclusions

This study affirmed that domestic violence against pregnant women could adversely affect maternal and neonatal health. As a result, we should identify women who are at risk of domestic violence during pregnancy, develop relevant health guidelines to cope with this phenomenon and conduct routine screening programs (14, 33). Vulnerable pregnant women should be timely identified and offered educational and interventional programs by physicians and trained staff to reduce the prevalence and complications of domestic violence during pregnancy.

Footnotes

Authors' Contribution: F.G.V. and R.A.: Study design; M.G.: Drafting the manuscript; M.P: Data analysis; Z.P.: Data

collection; N.E.: Manuscript editing.

Conflict of Interests: One of the authors, Marjan Ghaemi, is a member of the editorial board of this journal and hereby discloses the potential conflict of interest related to this submission. To mitigate any potential bias, she recused herself from the editorial process and sought an independent review of the manuscript.

Data Reproducibility: The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

Ethical Approval: The study was approved by the Ethics Committee of Tehran University of Medical Sciences (code of approval: IR.TUMS.IKHC.REC.1397.131).

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Informed Consent: All participants agreed to participate in the study, and written informed consent was obtained from them.

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