

Original Article

Association of Intimate Partner Violence and Perinatal Outcomes

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Abstract

Objective: To determine the association between intimate partner violence (IPV) and perinatal outcomes among women delivering at Liaquat University Hospital Hyderabad.

Methodology: A case control study was conducted in the Department of Obstetrics and Gynaecology at Liaquat University Hospital (LUH) Hyderabad, from August 2025 to January 2026. The sample of 127 women with singleton pregnancies was enrolled consecutively, including 64 with intimate partner violence and 63 without. The sample of patients was divided in two groups; 64 women with a history of intimate partner violence during pregnancy or within the last twelve months were included in the exposed group and 63 women without intimate partner violence served as controls. Intimate partner violence was assessed through structured interviews and perinatal outcomes were recorded after delivery. Chi square test and odds ratios were applied with a significance level of 0.05.

Results: The mean maternal age was 28.6 ± 5.1 years in the IPV group and 27.9 ± 4.8 years in the non-IPV group. Low birth weight (LBW) (35.9% vs 14.3%; OR 3.36), preterm birth (28.1% vs 11.1%; OR 3.13), IUGR (21.9% vs 7.8%; OR 3.30) and PROM (25.0% vs 9.5%; OR 3.16) were significantly higher among IPV-exposed women, while miscarriage, IUD and neonatal death showed non-significant association with IPV.

Conclusion: The intimate partner violence found significantly associated with adverse perinatal outcomes, including higher rates of low birth weight, preterm birth, IUGR and PROM, indicating the need of proper strategies development to reduce IPV-related maternal and neonatal risks.

Keywords: IPV, Perinatal Outcomes, LBW, Preterm Birth, Intrauterine Growth Restriction

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Introduction

Intimate partner violence (IPV) refers to physical, emotional, sexual, or psychological abuse inflicted by a current or former intimate partner. It is recognized as a major global public health challenge with profound consequences for the physical and mental health of women.^{1,2} According to the 2023 global estimates on violence against women published by the World Health Organization (WHO) on behalf of the UN Inter-Agency Working Group on Violence Against Women Estimation and Data, approximately one-third (32%) of women

worldwide have experienced physical and/or sexual violence perpetrated by an intimate partner, a non-partner, or both.³

Pregnancy is a particularly vulnerable period during which physiological changes, emotional stress, and increased dependency may increase a woman's susceptibility to violence. When IPV occurs during pregnancy, it threatens not only maternal well-being but also fetal growth and survival. Several biological and psychosocial mechanisms explain the association

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between IPV and adverse pregnancy outcomes.⁴ Direct abdominal trauma may result in placental abruption, premature rupture of membranes, or fetal injury, while indirect effects, including hormonal dysregulation, chronic stress, inflammatory responses, and impaired placental circulation, can adversely affect fetal growth and development.^{5,6} The prevalence of IPV during pregnancy varies across countries and cultural settings, with reported rates ranging from 2% to 35%. However, because many cases remain undetected and unreported, the true prevalence is likely higher than current estimates.^{4,6}

Several maternal and social factors have consistently been associated with an increased risk of IPV during pregnancy, including younger age, low socioeconomic status, unintended pregnancy, limited social support, and substance use by the partner.^{7,8} Women with lower educational attainment may have limited access to information regarding their rights and empowerment, making them more likely to accept prevailing cultural norms that tolerate or normalize violence by an intimate partner.⁷ Furthermore, the psychological consequences of IPV, including depression, anxiety, and post-traumatic stress disorder, can compound the physiological stress of pregnancy and contribute to adverse maternal and neonatal outcomes.^{9,10} International evidence demonstrates a strong association between IPV and adverse perinatal outcomes. Numerous studies have reported increased risks of low birth weight, preterm birth, and fetal growth restriction among women exposed to IPV.^{11,12} Other studies have also identified associations with miscarriage, stillbirth, and neonatal morbidity, highlighting the serious clinical consequences of violence during pregnancy.¹³

Overall, available evidence indicates that IPV is an important risk factor for adverse pregnancy outcomes, acting independently as well as through interactions with biological and social determinants of health. Despite the substantial global evidence, high-quality local data from Pakistan remain limited. Moreover, IPV continues to be an underrecognized and underreported public health issue in the country. Cultural beliefs, social stigma, fear of retaliation, and inadequate screening systems contribute to underreporting, making it difficult to determine the true burden of IPV and its impact on maternal and neonatal health.

Given these knowledge gaps and the need for context-specific evidence, it is important to investigate the

relationship between IPV and pregnancy outcomes in the local healthcare setting. Therefore, the present study was conducted to determine the association between intimate partner violence and perinatal outcomes among women who delivered at Liaquat University Hospital (LUH), Hyderabad. The findings are expected to provide valuable local evidence to inform interventions and policies aimed at improving maternal and neonatal health.

Methodology

This case control study was conducted over six months in all units of the Department of Obstetrics and Gynaecology at Liaquat University Hospital Hyderabad. Study duration was six months from August 2025 to January 2026. All the women with singleton pregnancy, aged 18-45 years who delivered a live baby at the hospital during study, women who experienced either intimate partner violence (IPV) or no IPV (control group) during pregnancy were included. The women with known pre-existing chronic medical conditions (e.g., diabetes, hypertension, cardiac disease, severe anemia) that independently affect perinatal outcomes, twin pregnancy and those who were unwilling to participate or unable to communicate safely and privately were excluded. Ethical approval was obtained from the IRB LUMHS Jamshoro ref no LUNHS/REC/134

A non-probability consecutive sampling technique was used. A sample size of 127 pregnant women was calculated using the raosoft software for "Sample size calculation" by using the proportion (Preterm delivery occurred more 9.1% in IPV group and NICU admissions were 11.8%)¹⁴, by taking least proportion with level of significance 95% and power of test 5%. The sample of patients was divided in two groups; 64 women with a history of intimate partner violence during pregnancy or within the last twelve months were included in the exposed group and 63 women without intimate partner violence served as controls. Informed consent was obtained after explaining the purpose of study and women were interviewed in a private setting to ensure confidentiality and safety, in accordance with WHO ethical and safety guidelines for researching domestic violence. Intimate partner violence was defined as physical, emotional, psychological or sexual abuse by the spouse and was assessed using structured face to face interviews. Perinatal outcomes evaluated included low birth weight less than 2500 grams, preterm birth before 37 weeks of gestation,

intrauterine growth restriction below the tenth percentile for gestational age, miscarriage before 20 weeks, and premature rupture of membranes, intrauterine death and neonatal death during hospital stay. All deliveries were conducted according to hospital protocols, and demographic data and perinatal outcomes were recorded through a structured proforma. Data were analyzed using SPSS version 26. Frequencies and percentages were calculated for categorical variables, while chi square test and odds ratios with 95 percent confidence intervals were used to assess associations between intimate partner violence and perinatal outcomes, at significance level of 0.05.

Results

Overall mean age of the patients was comparable between the IPV (28.6 $\pm$ 5.1 years) and non-IPV (27.9 $\pm$ 4.8 years) groups, as was BMI (24.7 $\pm$ 3.2 vs. 25.4 $\pm$ 3.5 kg/m²). Women exposed to IPV were more likely to reside in rural areas (59.4% versus 44.4%), be unbooked for antenatal care (56.3% versus 31.7%), and belong to the poor socioeconomic class (65.6% vs. 38.1%) compared to non-IPV patients, who were more often from the upper class (31.7% versus 6.3%). The MOD was almost similar between the groups, with vaginal delivery being more common overall (65.6% in IPV versus 71.4% in non-IPV group), while the premature rupture of membranes was more frequent among IPV-exposed cases (25.0%) compared to non-

IPV cases (9.5%), as presented in table I

The patients who exposed to IPV had significantly higher rates of LBW (35.9% vs. 14.3%, OR 3.36, $p=0.005$), preterm birth (28.1% vs. 11.1%, OR 3.13, $p=0.016$), IUGR (21.9% vs. 7.8%, OR 3.30, $p=0.025$), and PROM (25.0% vs. 9.5%, OR 3.16, $p=0.021$) compared to non-IPV patients. However, the miscarriage (7.8% vs. 3.2%), IUD (4.7% vs. 1.6%), and neonatal death (6.3% vs. 1.6%) were also more frequent among IPV-exposed women, but the findings were insignificant statistically ($p>0.05$), indicating that the overall, IPV exposure is significantly linked to the several major adverse perinatal outcomes, as presented in table II.

Based on stratified analysis the IPV was significantly linked to the adverse perinatal outcomes among unbooked women (OR 3.40, $p=0.01$), those with vaginal delivery (OR 2.74, $p=0.04$), both urban (OR 2.89, $p=0.04$) and rural (OR 3.12, $p=0.03$) resident's women, and those who had lower socioeconomic status (OR 3.52, $p=0.008$), while no significant associations were observed by age group, caesarean delivery, or middle/upper SES. Table III

Discussion

Intimate partner violence (IPV) is a major public health issue affecting millions of women worldwide. The present study was conducted to evaluate the influence

Table I: Baseline demographic and clinical characteristics of women with & without IPV (n=127)

Variables	IPV (n=64)	Non IPV (n=63)
Maternal age in years	28.6 $\pm$ 5.1 (95%CI: 27.35--29.85)	27.9 $\pm$ 4.8 (95%CI: 26.72--29.08)
Body Mass Index (kg/m ²)	24.7 $\pm$ 3.2 (95%CI: 23.92--25.48)	25.4 $\pm$ 3.5 (95%CI: 24.54--26.26)
Frequency (%)		
Residential Status	Urban	26 (40.6%)
	Rural	38 (59.4%)
Booking Status	Booked	28 (43.7%)
	Un-Booked	36 (56.3%)
Socioeconomic Status	Lower Class	42 (65.6%)
	Middle Class	18 (28.1%)
	Upper Class	4 (6.3%)
Mode of Delivery	Vaginal	42 (65.6%)
	Caesarean	22 (34.4%)
Premature Rupture of Membranes	Yes	16 (25.0%)
	No	48 (75.0%)

Table II: Perinatal outcomes among women with and without IPV (n=127)

Perinatal Outcomes	IPV (n=64)	Non-IPV (n=63)	Odds Ratio (95% C.I)	P-Value
Low birth weight	23 (35.9%)	9 (14.3%)	3.36 (1.40---8.04)	0.005
Preterm birth	18 (28.1%)	7 (11.1%)	3.13 (1.20---8.14)	0.016
(IUGR)	14 (21.9%)	5 (7.8%)	3.30 (1.11---9.81)	0.025
(PROM)	16 (25.0%)	6 (9.5%)	3.16 (1.14---8.72)	0.021
Miscarriage	5 (7.8%)	2 (3.2%)	2.58 (0.48---13.84)	0.226
Intrauterine Death (IUD)	3 (4.7%)	1 (1.6%)	3.04 (0.30---30.12)	0.315
Neonatal death	4 (6.3%)	1 (1.6%)	4.20 (0.45---38.70)	0.182

Table III: Stratification analysis of perinatal outcomes by maternal characteristics in both groups.

		IPV (n=64)	Non IPV (n= 63)	Odds Ratio (95% C.I)	P-Value
Age Groups (years)	18 ---25	18 (28.1%)	11 (17.5%)	2.01 (0.82–4.88)	0.12
	26--- 30	22 (34.4%)	15 (23.8%)	1.71 (0.77–3.83)	0.18
	31---40	14 (21.9%)	7 (11.1%)	2.24 (0.77–6.52)	0.11
Booking Status	Booked	14 (21.9%)	7 (11.1%)	2.26 (0.86–5.90)	0.09
	Un-Booked	34 (53.1%)	15 (23.8%)	3.40 (1.31–8.80)	0.01
Mode of Delivery	Vaginal	27 (42.2%)	17 (27.0%)	2.74 (1.07–7.02)	0.04
	Caesarean	22 (34.4%)	18 (28.6%)	1.32 (0.64–2.75)	0.45
Residential Status	Urban	26 (40.6%)	35 (55.6%)	2.89 (1.04–7.96)	0.04
	Rural	38 (59.4%)	28 (44.4%)	3.12 (1.13–8.65)	0.03
Socioeconomic Status	Lower	38 (59.4%)	18 (28.6%)	3.52 (1.28–9.64)	0.008
	Middle	18 (28.1%)	19 (30.2%)	0.90 (0.42–1.90)	0.78
	Upper	8 (12.5%)	6 (9.5%)	1.36 (0.44–4.16)	0.59

of IPV on perinatal outcomes and to generate evidence from the local population. The findings demonstrated that IPV was significantly associated with adverse perinatal outcomes, consistent with observations reported in both regional and international studies. Specifically, the rates of low birth weight (LBW), preterm birth, intrauterine growth restriction (IUGR), and premature rupture of membranes (PROM) were significantly higher among women exposed to IPV than among those without IPV exposure ($p < 0.05$). These findings are supported by previous evidence indicating that both physical violence and chronic psychological stress adversely affect placental function, fetal growth, and the timing of delivery.^{12, 13}

Among the 64 women exposed to IPV, the most frequent adverse perinatal outcomes were LBW (35.9%), preterm birth (28.1%), PROM (25.0%), and IUGR (21.9%), followed by miscarriage (7.8%), neonatal death (6.3%), and intrauterine death (IUD) (4.7%). Similar findings were reported by Pastor-Moreno et al.,¹¹ who observed higher rates of LBW (50%), preterm birth (46%), miscarriage (30%), perinatal death (20%), and PROM (20%) among women experiencing IPV. Likewise, a systematic review and meta-analysis by Guo et al.,¹⁵ which included 23 studies, found that IPV was significantly associated with preterm birth (OR 1.84, 95% CI: 1.37–2.49), low birth weight (OR 2.73, 95% CI: 1.66–4.48), and stillbirth (OR 1.74, 95% CI: 0.86–3.54). Similarly, Lockington et al. reported significantly higher odds of small-for-gestational-age infants (adjusted OR 1.17), preterm birth (adjusted OR 1.21), PROM (adjusted OR 1.23), and severe neonatal morbidity (adjusted OR 1.21) among women exposed to IPV.

The prevalence of preterm birth among IPV-exposed women (28.1%) in the present study is consistent with the findings of Donovan et al.,¹⁶ who reported that IPV significantly increased the risk of preterm birth (OR

1.91) and low birth weight (OR 2.11). Similarly, Steele-Baser et al.¹⁷ found that all forms of IPV were associated with delayed or inadequate antenatal care and low birth weight, while physical, sexual, and overall IPV were significantly associated with preterm birth. Silverman et al.¹⁸ also demonstrated that IPV increases the risk of preterm labour independent of maternal demographic characteristics. In the present study, maternal age and body mass index (BMI) did not differ significantly between the exposed and unexposed groups, further supporting the hypothesis that IPV is an independent risk factor for preterm delivery.^{8, 18}

Premature rupture of membranes occurred in 25.0% of women exposed to IPV and was significantly more common than in the comparison group. This finding agrees with Bailey and Daugherty,¹⁹ who reported a significant association between IPV and PROM, possibly resulting from genital trauma, subclinical infections, and stress-related weakening of fetal membranes. These findings support the hypothesis that both direct physical injury and chronic psychological stress contribute to membrane rupture during pregnancy.

Although miscarriage, intrauterine death, and neonatal death were more frequent among women exposed to IPV, these differences did not reach statistical significance. Similar trends have been reported by Ibrahim et al.,¹² who found that IPV survivors had a higher risk of miscarriage and fetal loss, although statistical significance was often limited by small sample sizes. Likewise, Islam et al.²⁰ reported increased adverse fetal outcomes among women experiencing IPV in Bangladesh, suggesting that these associations remain clinically important despite the absence of statistical significance.

The present study also demonstrated that poor socioeconomic status, lower educational attainment, and rural residence were significantly associated with a

higher likelihood of IPV. These findings are consistent with a multi-country Demographic and Health Survey (DHS)-based study involving more than 150,000 pregnant women from 30 low- and lower-middle-income countries, which reported that socioeconomic disadvantage was a major determinant of IPV, whereas women from wealthier households had substantially lower odds of experiencing violence.²¹ Similarly, a scoping review of adolescents and young women in sub-Saharan Africa found that rural residence, poverty, and limited female empowerment were strongly associated with increased IPV and poorer reproductive health outcomes.²² A community-based study further supported these findings by demonstrating that rural residence, witnessing IPV during childhood, unintended pregnancy, alcohol use by the husband, and limited social support were significant predictors of IPV during pregnancy.²³

Overall, the findings of the present study reinforce the growing body of evidence that IPV is an important determinant of adverse perinatal outcomes. However, the study has several limitations, particularly the relatively small number of women exposed to IPV (n=64), which may have limited the statistical power to detect differences in less frequent outcomes and restricted the generalizability of the findings. Therefore, larger multicenter studies are needed to strengthen the local evidence base. Protecting maternal and neonatal health requires more than routine obstetric care; it also necessitates systematic screening for IPV during antenatal visits, accessible psychosocial support services, effective referral mechanisms, and community-based interventions aimed at women's empowerment. Promoting awareness and encouraging open discussion about domestic violence may contribute to healthier mothers, safer pregnancies, and improved outcomes for future generations.

Conclusion

Study revealed a clear and significant association between IPV and adverse perinatal outcomes, with IPV-exposed women facing more than three times the odds of low birth weight, preterm birth, fetal growth restriction, and premature rupture of membranes compared to the un-exposed women. Based on this largely hidden and under-reported nature of domestic violence in our regions, the routine antenatal screening for IPV should be integrated into standard obstetric care, alongside targeted support systems for the women on high risk. Concentrating on IPV is therefore

not only a matter of protecting rights of the women, but an important step toward improving perinatal outcomes and decreasing preventable neonatal and maternal morbidity.

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