

Intimate Partner Violence during Pregnancy and Adverse Birth Outcomes in India: Findings from the National Family Health Survey

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Abstract

This study has examined how intimate partner violence (IPV) during pregnancy has affected adverse birth outcomes (ABO) in India using the data available from the National Family Health Survey, 2019-2021 (NFHS-5). The study reveals that the risk of IPV is strongly associated with adverse birth outcomes along with the effect of education of women, standard of living, place of residence, alcohol consumption by the partner. The study highlights the importance of prioritising follow-up care to women after delivery and improving their socio-economic conditions. The study also suggests that involving women in reproductive health decision-making processes is crucial for preventing adverse birth outcomes. The findings underscore the need of comprehensive policy interventions to support vulnerable women. Addressing socio-economic factors and empowering women to participate in healthcare decision-making can mitigate both prevalence of IPV and risk of ABO in India.

Introduction

Adverse birth outcomes are a significant public health concern with wide-ranging implications for the health and well-being of both mothers and infants. These outcomes not only affect the health and well-being of the mother but also have profound effects on the morbidity and mortality of the foetus (Adane et al, 2014; Silasi et al, 2015; Abdo et al, 2016; Mirzakhani et al, 2020). Maternal complications during pregnancy and delivery can also significantly cause high mortality among adolescent girls aged 15-19 years. In many developing countries, adolescents face higher risk of complications during pregnancy and delivery due to various factors, including intimate partner violence (Stöckl et al, 2014; Cha and Masho, 2014; Huber-Krum et al, 2023). The association between intimate partner violence (IPV) and adverse birth outcomes (ABO) has been well-established (Janssen et al,

2003; Mahapatro et al, 2011; Sarkar, 2013). Previous studies have shown that spousal violence is linked with an increased risk of life-threatening complications for both mother and child, such as miscarriage, abortion, preterm birth, stillbirth, and low birth weight (Campbell, 2002; Kelly et al, 2008; Moylan et al, 2010; Han and Stewart, 2014; Alhusen et al, 2015). A study based on in-depth interview of women suggests that spousal violence is associated with unintended pregnancies and pregnancy outcomes (Straus et al, 1990). According to the World Health Organization (WHO, 2021a), nearly one-third women aged 15-49 years worldwide have experienced IPV, which includes physical or sexual violence perpetrated by their intimate partner. IPV can manifest in various forms, including physical, sexual, and emotional abuse. It can occur in both heterosexual and same-sex relationships. The consequences of IPV are far-reaching and can have severe physical, psychological, and social impacts on the survivor. Globally, the prevalence of IPV is estimated to be the highest in central Sub-Saharan Africa (32 per cent) followed by Oceania (29 per cent), rest of Sub-Saharan Africa (24 per cent) and South Asia (19 per cent) (Sardinha et al, 2022). The literature has also highlighted the adverse implications of IPV on the mother and the developing foetus (Alhusen et al, 2015; Chambliss, 2008; Afiaz et al, 2020; WHO, 2021; Garg et al, 2020). Pregnant women who experience IPV can encounter multiple challenges affecting their reproductive health, including high rates of stress, and less likelihood of receiving prenatal care. They may also carry out self-managed abortion (Alhusen et al, 2015; Goemans et al, 2021). Studies suggest that abused women are more likely to have preterm deliveries than non-abused women (Ping-Hsin Chen et al, 2017; Bramhankar and Reshmi, 2021). A meta-analysis of 39 studies conducted across different regions of the world has reported that pregnancy of approximately half of those pregnant women who were affected by IPV during pregnancy resulted in preterm birth (Pastor-Moreno et al, 2020). Additionally, one-third of women who experienced IPV during pregnancy, reported miscarriages. Studies from Peru, Uganda, and Ethiopia show strong relationship between intimate partner violence (IPV) during pregnancy and miscarriage (Medrano et al, 2022; Gubi et al, 2020; Tiruye et al, 2020). The study conducted by Abrahams et al (2023) highlights the association between exposure to trauma resulting from intimate partner violence (IPV) and rape and its impact on women's health outcomes, specifically hypertension and body mass index (BMI). The study suggests that such health issues can have implications for pregnancy outcomes, including the risk of miscarriage. Other studies suggest that women exposed to spousal violence have higher preterm birth rates (Curry et al, 1998; Martin et al, 2001). A study in Bangladesh shows a significant association between intimate partner violence and adverse birth outcomes (Afiaz et al, 2020). Besides, IPV directly threatens women's physical and mental health and has significant implications for pregnancy and childbirth (Abrahams et al, 2023). According to the report, women who have experienced IPV are 16 per cent more likely to suffer a miscarriage compared to those who have not experienced IPV (WHO, 2021).

Prevalence of IPV in India is alarmingly high. An earlier study has revealed that one in every three women in India is likely to have experienced IPV in her lifetime, either in terms of physical violence or in terms of emotional abuse (Krishnamoorthy et al, 2020). The latest round of the National Family Health Survey conducted during 2019-2021 reports that around 32 per cent of ever-married women aged 18-49 years had experienced either physical, or sexual, or emotional spousal violence. The most common type of spousal violence is reported to be physical violence (28 per cent), followed by emotional violence

(14 per cent), while 6 per cent of ever-married women aged 18-49 have experienced spousal sexual violence (Government of India, 2022).

Reducing maternal and foetal deaths has explicitly been expressed as one of the objectives of the United Sustainable Development Agenda (United Nations, 2015). The target 3.1 of the Sustainable Development Goal 3 (SDG 3) specifically aims at reducing maternal mortality ratio while target 3.2 aims at eliminating preventable deaths of newborns and children below five years of age. However, both maternal mortality ratio and neonatal and under-five mortality in India remains well above the international standards (Government of India, 2025a Government of India, 2025b). Reducing maternal and child mortality remains a major public health challenge in India.

At the global level, especially in the developing countries, there is evidence of different forms of adverse birth outcomes, but, in India, the evidence is limited. There are studies that have investigated socio-economic, demographic, and accessibility-related risk factors associated with the adverse birth outcomes, but the impact of spousal violence on women during pregnancy has received limited attention (Mahapatro et al, 2011; Mondal and Paul, 2020; Paul and Mondal, 2021). The Indian Penal Code (IPC) Section 498-A, introduced in 1983, criminalises certain acts of cruelty by the husband and his relatives on the spouse. However, it was not until the enactment of the Protection of Women from Domestic Violence Act 2005 (PWDVA) that a comprehensive legal framework could be established to address domestic violence against women. The PWDVA recognises domestic violence as a distinct offence and provides a wide range of protections and remedies for women who experience violence within marital or domestic relationships. However, spousal violence against women remains challenging and threatens the empowerment and autonomy of women (Gupta and Yesudian, 2006; Gangoli et al, 2011; Krishnan et al, 2012).

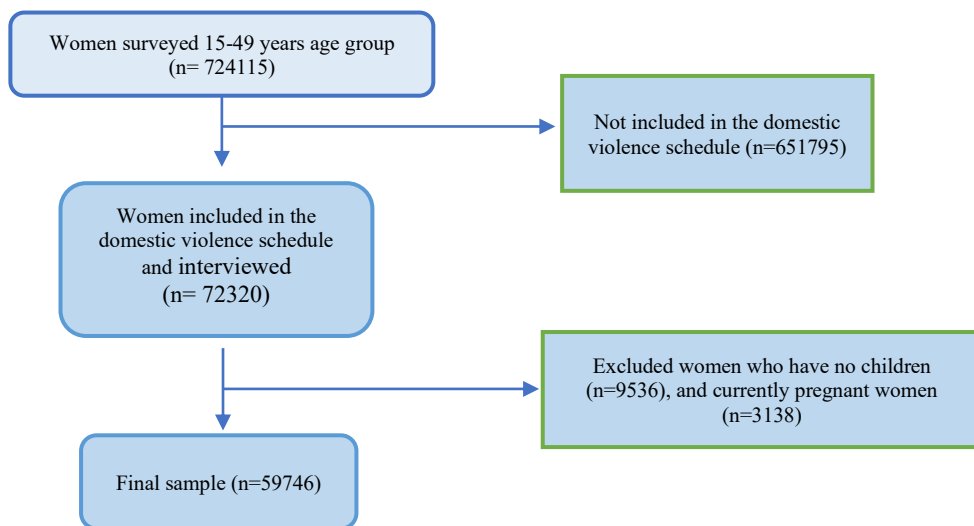
This paper explores the association between intimate partner violence (IPV) and adverse birth outcomes in India to provide a better understanding of the impact of IPV on adverse birth outcomes. The study adds to the growing body of research on adverse birth outcomes in India and may be useful for developing policies and programs to battle the high incidence of adverse birth outcomes in the country. The study also provides a new perspective on designing policy interventions to meet the maternal health care needs of the country. The study is based on the most recent data available from the nationally representative, cross-sectional survey.

Data source

The study is based on the data available from the National Family Health Survey (NFHS-5), 2019-2021 which aims to provide reliable estimates on various aspects of reproductive health, including birth outcomes, miscarriage, abortion, stillbirth, terminated pregnancy, birth weight, and spousal violence against females aged 15-49 years. The survey collected information from approximately 610,000 households in India, covering a sample size of 724,115 women and 101,839 men for India, each state/union territory (UT), and for 707 districts as of March 31, 2017 (Government of India, 2022). All relevant information about the NFHS survey is publicly available.

Study population

This study has used the women data file (IR file), which include data from 724,115 women aged 15-49 years interviewed during the survey. However, specific exclusions were made before the analysis to ensure that the sample was aligned with the study's objectives. First, 651,795 women were excluded from the analysis as they were not covered in the domestic violence schedule. Second, women who were not having child at the time of the survey and women who were pregnant at the time of the survey were also excluded. The final sample size for the present study, therefore, is 59,746 women aged 15-49 years. The flow chart of the sample selection is shown below.



The definition of the terms used in the present analysis are given below:

Adverse birth outcome: at least one of the following conditions during the in the last birth pregnancies experiences- miscarriage, abortion, stillbirth, and terminated pregnancy.

Miscarriage: unexpected loss of foetus before 22 completed weeks of pregnancy.

Abortion: intentional cessation or initiation of termination of gestation before 28 weeks of pregnancy or when the foetal weight is less than 1 kg.

Stillbirth: demise of the foetus in the uterus before delivery, occurring at or after 28 completed weeks of gestational age. A stillbirth is diagnosed when the foetus shows no signs of life upon delivery.

Pregnancy termination: loss of pregnancy before 37 completed gestational weeks or more irregular than 259 days since the woman's last menstrual period. This category includes any pregnancy that does not progress to the full term of 37 weeks or more, regardless of the specific cause or timing of the loss.

Table 1. Covariates used in the analysis.

Covariates	Description	Coding
Age	Age was grouped into 15–24 years, 25–39 years, and 40–49 years.	15–24 (0) 25–39 (1) 40–49 (2).
Educational Status	Educational status was classified as no education, primary education, secondary and higher.	No education (0) Primary education (1), secondary (2) Higher (3)
Wealth status	The wealth status of the households was classified as poorest, poorer, middle, richer, and richest.	Poorest (0) Poorer (1) Middle (2) Richer (3) Richest (4)
Working Status	The respondents were asked whether they were currently working or not during the survey. Based on their responses, this variable was coded as no or yes.	No (0) Yes (1)
Occupation	The occupation was categorised as no occupation, agricultural, service, skilled and unskilled manual, and others.	Agricultural (0) Skilled & unskilled manual (1) Household & domestic work (2) Professional, technical, others (3)
Place of residence	The place of residence was coded as rural and urban.	Urban (0) Rural (1).
Religion	The households' religious beliefs were coded as the Hindu, Muslim, Christian, and others.	Hindu (0) Muslim (1) Christian (2) Others (3)
Social Group	The households' social group was classified as scheduled caste, scheduled tribe, other backward class, and 'others.	Scheduled Castes (0) Scheduled Tribes (1) Other Backward Class (2) General (3)
Partner Alcohol Consumption	The respondent whose husband consumption of alcohol was coded as yes or no.	No (0) Yes (1)
Household Size	The respondent's household size was coded as follows.	1-3 (0) 4-6 (1) >6 (2)

Dependent variable. The dependent variable of the present study is Adverse Birth Outcome" (ABO) which has been dichotomised into two binary groups: 'yes' and 'no'. This variable aims to determine whether a mother has experienced any of the adverse birth outcomes mentioned above. If a mother has reported experiencing any of these outcomes, ABO is coded '1' meaning that the woman has experienced an adverse birth outcome. Otherwise, ABO is coded '0'.

Explanatory variables. The study considered physical violence as an explanatory variable. This variable was determined based on a set of seven questions asked in the National Family Health Survey (NFHS-5) regarding spousal violence against women. The questions assessed various forms of physical violence experienced by women at the hands of their husbands. The specific questions were: whether the woman had ever been pushed, shook, or had something thrown by her husband, whether the woman had ever been slapped by her husband, whether the woman had ever had her arm twisted or hair pulled by her husband, whether the woman had ever been punched with a fist or hit by something harmful by her husband, whether the woman had ever been kicked or dragged by her husband, whether the woman had ever been strangled or burnt by her husband, whether the woman had ever been threatened with a knife/gun or other weapons by her husband. Based on the responses to these questions, a binary variable was developed to indicate whether the women reported being exposed to physical violence by their husbands.

Covariates. The study included a comprehensive range of socio-demographic factors that may be influencing the outcome of the birth in addition to intimate partner violence as control variables. These covariates or explanatory variables were selected through a review of previous research on the association between spousal violence and maternal health. The covariates or the explanatory variables used in the present analysis has been described in table 1.

Statistical analysis. To analyse the prevalence and the determinants of domestic violence, various statistical analysis techniques were adopted at every stage of the research depending upon the need of the study. The background characteristics of the study participants were presented as per centages, providing a descriptive overview of the sample. At the first stage, bivariate analysis was carried out and the χ^2 test was used to test the association between adverse birth outcome (ABO) and the explanatory variables or covariates at $p=0.05$ level of significance.

At the second stage of the analysis, binary logistic regression analysis was carried out to explore how the variation in different covariates or the explanatory variables influenced the dependent variable or the probability of experiencing IPV during pregnancy. The results of the binary logistic regression analysis are presented as adjusted odds ratios (ORs) along with 95 per cent confidence interval (CIs). The adjusted odds ratios give an idea about how the change in a covariate induces a change in the dependent variables when the effect of other covariates or explanatory variables is controlled. estimates of the effect of each explanatory variable on the odds of experiencing adverse birth outcomes while controlling for other variables in the model. All the statistical analyses were done using STATA software version 14.1 (Stata 14; Stata Corp LP, 2015).

Results

The distribution of the sample is shown in table 2. The age distribution shows the highest percentage of women in the group 25-39 at 56 per cent, followed by 32.2 per cent in the age group 40-49. Nearly 46 per cent of women have completed secondary education, but 29.6 per cent have not received any education. Nearly 70 per cent of women were currently not working. The occupation pattern of respondent partners shows that nearly 33.5 per cent are engaged in agriculture, followed by 31 per cent in skilled and unskilled manual labour. Nearly 24 per cent of the respondents informed that their partners consumed alcohol. Nearly 60.2 per cent of respondents had a household size of 4-6. Two third respondents reside in rural areas, and 80 per cent of respondents belong to the Hindu religion. Moreover, 42 per cent of respondents belong to the OBC caste category, followed by 21 per cent in both SC and General caste categories. Nearly 20 per cent of respondents belong to the poorest wealth index, and 17 per cent belong to the richest wealth index.

Table 3 shows the prevalence of IPV among women during pregnancy. The prevalence was the highest in women aged 40-49 years and in women having primary education followed by women without any education. The prevalence of IPV during pregnancy has been found to be higher in working women as compared to that in non-working women. Consuming of alcohol by the partner is found to have a direct impact on IPV during pregnancy as almost 8 per cent of the women whose partner was alcoholic reported experiencing of IPV during pregnancy compared to less than 2 per cent in women whose partner was not alcoholic. The prevalence of IPV during pregnancy is found to be high in rural women, in women of Christian religion, in Scheduled Castes and in Scheduled Tribes women. The prevalence of IPV during pregnancy has been found to be inversely related to the living standard of the household of the women – the prevalence is found to be the highest in the poorest households but the lowest in the richest households. The prevalence of IPV during pregnancy has, however, not been found to be associated with the household size.

Table 4 shows the determinant of prevalence of IPV during pregnancy. The odds of experiencing IPV during pregnancy is found to be statistically significantly higher in working women as compared to non-working women. The odds of experiencing IPV during pregnancy has also been found to be statistically significantly high in women whose partner was alcoholic as compared to women whose partner was not alcoholic. Compared to Hindu women, the odds of experiencing IPV during pregnancy was statistically significantly higher in Muslim women but statistically significantly lower in women of religions other than Hindu, Muslim and Christian. Similarly, compared to Scheduled Castes women, the odds of experiencing IPV during pregnancy was statistically significantly higher in Scheduled Tribes women and in women of general social class but not in women belonging to other backward classes (OBC). There was no statistically significant difference in the odds of experiencing IPV during pregnancy in poorest women and in poor women or women of middle income group but the odds of experiencing IPV during pregnancy was statistically significantly lower in women belonging to rich and the richest income groups. The age of the woman and the occupation of the partner of the woman have not been found to be having any statistically significant association on the prevalence of IPV during pregnancy among the women surveyed.

Table 2: Distribution of women by their background characteristics.

Background characteristics	%	N
Age		
15-24	11.90	6295
25-39	55.90	36185
40-49	32.20	17266
Level of Education		
No education	29.60	18097
Primary	14.30	8897
Secondary	45.80	26867
Higher	10.20	5885
Working Status		
No	69.40	41711
Yes	30.60	18035
Type of Partner's Occupation		
Agriculture	33.50	22511
SUM [#]	30.80	17282
HSW [@]	9.30	5254
Others [*]	26.30	14633
Partner's Alcohol Consumption		
No	75.60	42799
Yes	24.20	16870
Household Size		
1-3	18.80	12616
4-6	60.20	37677
> 6	21.00	9453
Place of Residence		
Urban	30.70	14449
Rural	69.30	45297
Religion		
Hindu	79.20	45376
Muslim	16.00	7088
Christian	2.60	4313
Others	2.20	2969
Social Group		
SC	21.00	11392
ST	8.80	11437
OBC	42.00	23043
General	21.20	10981
Wealth Index		
Poorest	19.60	13348
Poorer	21.30	13596
Middle	21.40	12435
Richer	20.40	11012
Richest	17.40	9355
Total		59746

[#]SUM=Skilled and unskilled manual; [@]HSW=Household and service work; ^{*}Others= Professional / technical / management/clerical/ sales/ other / don't know; SC= Scheduled Caste, ST= Scheduled Tribes, OBC= Other Backward Class.

Source: Authors.

Table 3: Prevalence of IPV during pregnancy by background characteristics of women

Background Characteristics	IPV During Pregnancy		
	%	χ^2 , df, p	N
Age			
15-24	2.80	2.536, 2, 0.281	6295
25-39	3.10		36185
40-49	3.20		17266
Level of Education			
No education	3.90	171.870, 3, 0.000	18097
Primary	4.50		8897
Secondary	2.60		26867
Higher	1.40		5885
Working Status			
No	2.40	239.182, 1, 0.000	41711
Yes	4.80		18035
Type of Partner's Occupation			
Agriculture	3.70	46.631, 3, 0.000	22511
SUM [#]	3.20		17282
HSW [@]	2.40		5254
Others [*]	2.60		14633
Partners Alcohol Consumption			
No	1.70	1327.444, 1, 0.000	42799
Yes	7.70		16870
Household Size			
1-3	3.30	3.074, 2, 0.215	12616
4-6	3.20		37677
> 6	2.90		9453
Place of Residence			
Urban	2.60	22.271, 1, 0.000	14449
Rural	3.40		45297
Religion			
Hindu	3.10	3.751, 3, 0.290	45376
Muslim	3.30		7088
Christian	3.40		4313
Others	2.70		2969
Caste			
SC	3.60	30.347, 3, 0.000	11392
ST	3.70		11437
OBC	3.20		23043
General	2.60		13874
Wealth Index			
Poorest	4.30	164.030, 4, 0.000	13348
Poorer	3.60		13596
Middle	3.60		12435
Richer	2.40		11012
Richest	1.60		9355
Total	3.13		59746

[#]SUM=Skilled and unskilled manual; [@]HSW=Household and service work; ^{*}Others= Professional / technical / management/clerical/ sales/others/don't know; SC= Scheduled Castes, ST= Scheduled Tribes, OBC= Other Backward Classes.

Source: Authors.

Table 4: Determinants of IPV During Pregnancy of women in India

Background Characteristics	IPV during Pregnancy	
	OR [CI: 95%]	p-value
Age		
15-24	1	
25-39	0.915 [0.772-1.084]	0.306
40-49	1 [0.829-1.207]	0.998
Level of Education		
No education	1	
Primary	0.939 [0.81-1.087]	0.399
Secondary	0.877 [0.773-0.996]	0.042
Higher	0.783 [0.609-1.006]	0.055
Working Status		
No	1	
Yes	1.66 [1.497-1.842]	0.000
Type of Partner's Occupation		
Agriculture	1	
SUM [#]	1.036 [0.917-1.171]	0.568
HSW [@]	0.996 [0.816-1.216]	0.970
Others [*]	1.034 [0.891-1.199]	0.661
Partners Alcohol Consumption		
No	1	
Yes	4.537 [4.077-5.05]	0.000
Household Size		
1-3	1	
4-6	0.851 [0.702-1.031]	0.100
> 6	0.862 [0.711-1.044]	0.129
Place of Residence		
Urban	1	
Rural	0.891[0.789-01.006]	0.042
Religion		
Hindu	1	
Muslim	1.748 [1.481-2.062]	0.000
Christian	0.946 [0.703-1.273]	0.716
Others	0.731 [0.605-0.884]	0.001
Caste		
SC	1	
ST	1.494 [1.272-1.755]	0.000
OBC	1.086 [0.914-1.290]	0.349
General	1.238 [1.068-1.434]	0.005
Wealth Index		
Poorest	1	
Poorer	0.943 [0.822-1.082]	0.404
Middle	0.862 [0.741-1.002]	0.054
Richer	0.707 [0.591-0.846]	0.000
Richest	0.536 [0.424-0.678]	0.000
Constant	0.022 [0.016-0.031]	0.000
Pseudo r-squared	0.077	

OR= Odds Ratio; CI= Confidence Interval at 95% confidence level; [#]SUM=Skilled and unskilled manual;

[@]HSW=Household and service work; ^{*}Others= Professional / technical / management/clerical/ sales/ other / don't know; SC= Scheduled Caste, ST= Scheduled Tribes, OBC= Other Backward Class.

Source: Authors.

The prevalence of adverse birth outcome (ABO) has been found to be statistically significantly higher in women exposed to IPV during pregnancy (25.1 per cent) as compared to the prevalence of ABO in women who are not exposed to IPV during pregnancy (16.7 per cent) ($z=9.010$, $p<0.001$). Among different adverse birth outcomes (ABO) the difference in the prevalence between women exposed to IPV and women not exposed to IPV during pregnancy has been found to be statistically significant in case of abortion (2.3 per cent and 1.6 per cent respectively, $z=2.037$, $p<0.05$) but not in case of miscarriage (4.4 per cent and 3.9 per cent respectively, $z=0.913$, $p\geq 0.05$) and still birth (0.6 per cent and 0.5 per cent respectively, $z=0.555$, $p\geq 0$)).

Table 5 shows the association of the prevalence of adverse birth outcomes (ABO) in women exposed to and not exposed to IPV during pregnancy by their background characteristics. The difference in the prevalence of adverse birth outcomes between women exposed to and women not exposed to IPV during pregnancy has been found to statistically significantly associated with the age, level of education, work status, alcohol consumption by the partner, place of residence, social class and wealth index but not with the type of occupation of the partner and the household size.

Results of the bivariate logistic regression analysis of the prevalence of adverse birth outcomes on the explanatory variables are presented in table 7. The chance of having an adverse birth outcome is found to be more than 47 per cent higher in women exposed to IPV during pregnancy relative to the change of having adverse birth outcome in women not exposed to IPV during pregnancy even after controlling the explanatory variables. The chance of having adverse birth outcome has also been found to be statistically significantly higher in women aged 25-29 years relative to women aged 15-24 years; in women having at least secondary level education relative to illiterate women; in working women relative to non-working women; in women whose partner is in non-agriculture occupation relative to women whose partner is in agriculture occupation; in women whose partner consumes alcohol relative to women whose partner does not consume alcohol; in women belonging to households with at least 4 household members relative to women belonging to households having less than 4 household members; in women of Christian and other religions relative to Hindu women; and in women belonging to OBC and general social classes relative to Scheduled Castes women. On the other hand, women living in rural areas have lower chance of an adverse birth outcome relative to women living in urban areas. Similarly, women having at least middle level wealth index is found to be statistically significant lower change of having an adverse birth outcome relative to women having the lowest wealth index. The table also shows that there is no statistically significant difference in the chance of having adverse birth outcome in aged 40-49 years relative to women aged 15-19 years; in women having primary level education relative to women having no education; and in Muslim women relative to Hindu women. Table 6 shows that the impact of IPV during pregnancy in terms of adverse birth outcomes is different in different women having different social, economic and demographic characteristics. An intervention directed towards mitigating the risk of adverse birth outcomes resulting from IPV during pregnancy, therefore, should also take into consideration the social, economic and demographic characteristics of women as these factors also have a telling impact on the risk of adverse birth outcome emanating from IPV during pregnancy.

Table 5: Prevalence of adverse birth outcomes due to exposure to IPV during pregnancy by background characteristics of women in India.

	Exposed to IPV during pregnancy				χ^2	df	p
	Yes		No				
	Prevalence of ABO	N	Prevalence of ABO	N			
Age							
15-24	15.90	161	16.60	6134	7.282	2	0.026
25-39	27.30	963	17.80	35222			
40-49	22.40	530	15.70	16736			
Level of Education							
No education	21.40	639	15.30	17458	45.760	3	0.000
Primary	32.30	276	16.00	8621			
Secondary	23.80	648	18.20	26219			
Higher	18.90	91	17.30	5794			
Working Status							
No	23.60	907	16.90	40804	57.748	1	0.000
Yes	25.40	747	17.20	17228			
Type of Partner's Occupation							
Agriculture	22.70	666	14.00	21845	6.947	3	0.074
SUM [#]	22.60	536	19.40	16746			
HSW [@]	30.90	126	19.60	5128			
Others [*]	28.20	322	17.00	14311			
Partners Alcohol Consumption							
No	24.50	613	15.7	42186	172.207	1	0.000
Yes	24.40	1037	19.2	15833			
Household Size							
1-3	20.10	403	18.70	12213	7.791	2	0.408
4-6	25.50	999	16.80	36678			
> 6	25.40	252	16.00	9201			
Place of Residence							
Urban	23.60	364	18.60	14085	6.065	1	0.014
Rural	24.70	1290	16.30	44007			
Religion							
Hindu	23.10	1304	17.00	44075	19.312	3	0.000
Muslim	30.60	204	17.40	6884			
Christian	17.60	82	15.10	4231			
Others	7.20	67	16.10	2902			
Caste							
SC	24.40	391	16.20	11001	18.433	3	0.000
ST	24.20	291	13.60	11146			
OBC	25.90	656	17.00	22387			
General	22.00	316	18.50	13558			
Wealth Index							
Poorest	26.90	475	16.10	12873	41.615	4	0.000
Poorer	22.80	429	16.60	13167			
Middle	23.70	363	17.10	12072			
Richer	24.80	248	17.30	10764			
Richest	23.10	139	17.80	9216			
Total	24.45	1654	16.97	58092			

[#]SUM=Skilled and unskilled manual; [@]HSW=Household and service work; ^{*}Others= Professional / technical / management/clerical/ sales/ other / don't know; SC= Scheduled Caste, ST= Scheduled Tribes, OBC= Other Backward Class.

Source: Authors.

Table 6: Determinants of adverse birth outcomes due to exposure to IPV during pregnancy among women in India

Background Characteristics	Adverse Birth Outcomes	
	OR [CI: 95 %]	p-value
Domestic Violence during Pregnancy		
Non-exposed	1	
Exposed	1.472 [1.312-1.651]	0.000
Age		
15-24	1	
25-39	1.095 [1.016-1.181]	0.017
40-49	0.934 [0.859-1.017]	0.116
Level of Education		
No education	1	
Primary	1.036 [0.961-1.116]	0.358
Secondary	1.178 [1.109-1.252]	0.000
Higher	1.109 [1.008-1.221]	0.034
Working Status		
No	1	
Yes	1.059 [1.007-1.113]	0.025
Type of Partner's Occupation		
Agriculture	1	
SUM [#]	1.439 [1.356-1.527]	0.000
HSW [@]	1.466 [1.347-1.595]	0.000
Others [*]	1.211 [1.132-1.294]	0.000
Partners Alcohol Consumption		
No	1	
Yes	1.301 [1.235-1.371]	0.000
Household Size		
1-3	1	
4-6	0.779 [0.703-0.864]	0.000
> 6	0.73 [0.659-0.808]	0.000
Place of Residence		
Urban	1	
Rural	0.941 [0.888-0.997]	0.040
Religion		
Hindu		
Muslim	1.062 [0.991-1.138]	0.090
Christian	0.858 [0.738-0.998]	0.047
Others	0.806 [0.682-0.953]	0.012
Caste		
SC	1	
ST	0.844 [0.767-0.928]	0.000
OBC	1.075 [1.011-1.142]	0.020
General	1.275 [1.189-1.368]	0.000
Wealth Index		

Background Characteristics	Adverse Birth Outcomes	
	OR [CI: 95 %]	p-value
Poorest	1	
Poorer	0.93 [0.864-1.001]	0.052
Middle	0.9 [0.835-0.971]	0.006
Richer	0.871 [0.802-0.945]	0.001
Richest	0.886 [0.806-0.975]	0.013
Constant	0.189 [0.162-0.221]	0.000
Pseudo r-squared	0.013	

OR= Odds Ratio; CI= Confidence Interval at 95% confidence level; #SUM=Skilled and unskilled manual; @HSW=Household and service work; *Others= Professional / technical / management/clerical/ sales/ other / don't know; SC= Scheduled Caste, ST= Scheduled Tribes, OBC= Other Backward Class.

Inter-state Variation

Figure 2 shows prevalence of IPV during pregnancy across states/Union Territories. The prevalence varies ranges from 0 per cent in Chandigarh and Lakshadweep to almost 6 per cent in Karnataka. The prevalence is also estimated to be high in Dadra and Nagar Haveli and Telangana. There are 12 states/Union Territories where prevalence of IPV during pregnancy is estimated to be more than 3 per cent whereas, in 6 states/Union Territories, it is less than 1 per cent. The most noticeable of these states/Union Territories is Kerala where the prevalence of IPV during pregnancy is estimated to be around 0.3 per cent.

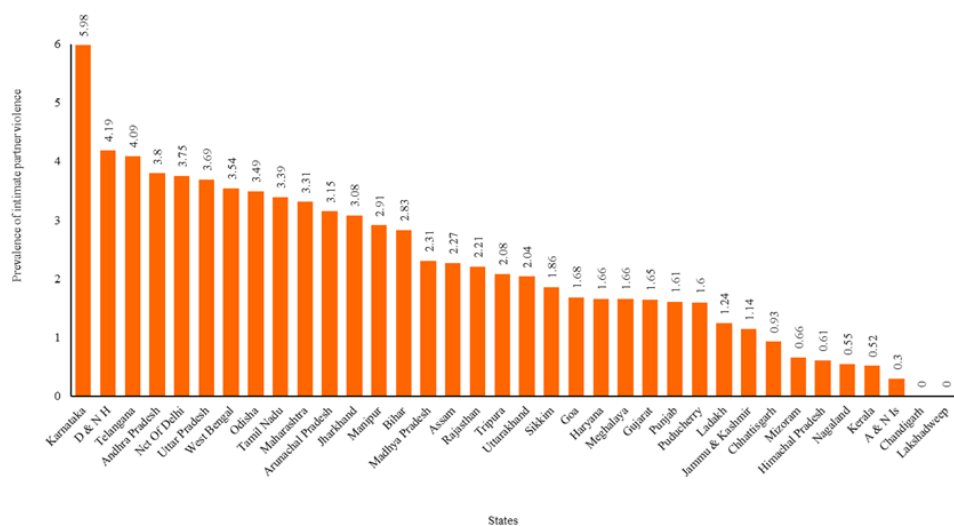


Figure 2: State-level Prevalence of intimate partner violence during pregnancy among women in India, 2019-21.

Source: Authors

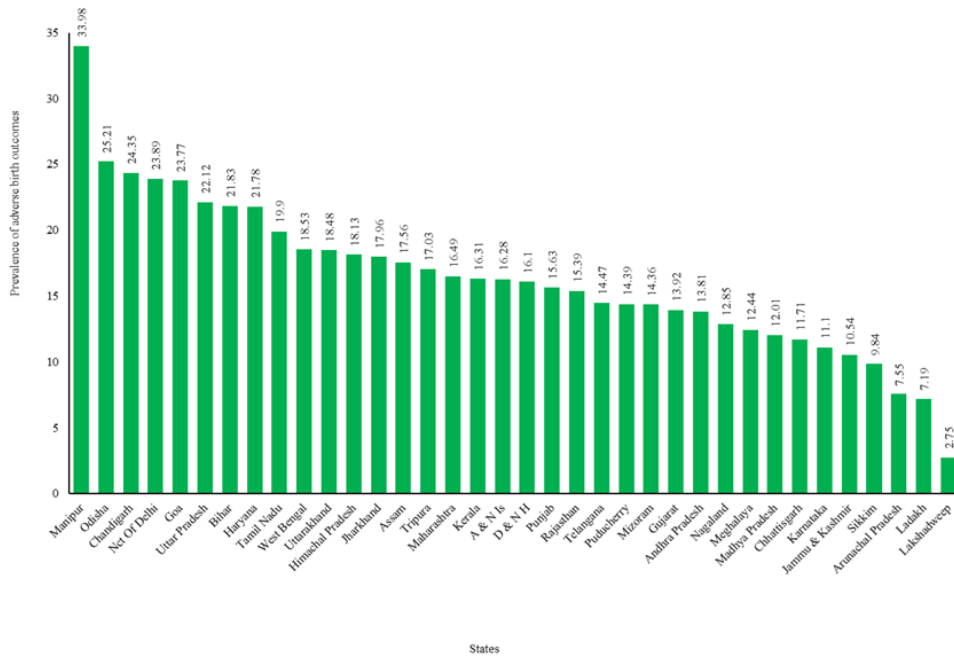


Figure 3: State-level Prevalence of adverse birth outcomes among women in India, 2019-2021.

Source: Authors

Figure 3 depicts the variation in the prevalence of adverse birth outcomes (ABO) across states/Union Territories. The prevalence of adverse birth outcome is estimated to be remarkably high in Manipur where the prevalence of adverse birth outcome is estimated to be almost 34 per cent. By contrast the prevalence of adverse birth outcome is estimated to be less than 3 per cent in Lakshadweep. There are only four states/Union Territories – Sikkim, Arunachal Pradesh, Ladakh, and Lakshadweep where prevalence of adverse birth outcome is estimated to be less than 10 per cent. On the other hand, there are 8 states/Union Territories where the prevalence of adverse birth outcome is estimated to be at least 20 per cent.

Figure 4 depicts inter-district variation in the prevalence of IPV during pregnancy and prevalence of ABO in India. The prevalence of IPV during pregnancy is estimated to be relatively high in districts of Karnataka, Andhra Pradesh, Tamil Nadu, and Maharashtra and in some districts of Odisha, West Bengal, Delhi and Rajasthan. On the other hand, the prevalence of ABO is found to be relatively high in districts of northern and eastern India, especially, in districts of Odisha, Uttar Pradesh, Delhi, Bihar and Andhra Pradesh. The prevalence of adverse birth outcomes has also been found to be relatively high in some districts of hilly states. By comparison, prevalence is estimated to be low in districts of central India.

Prevalence of IPV during pregnancy

Prevalence of adverse birth outcome

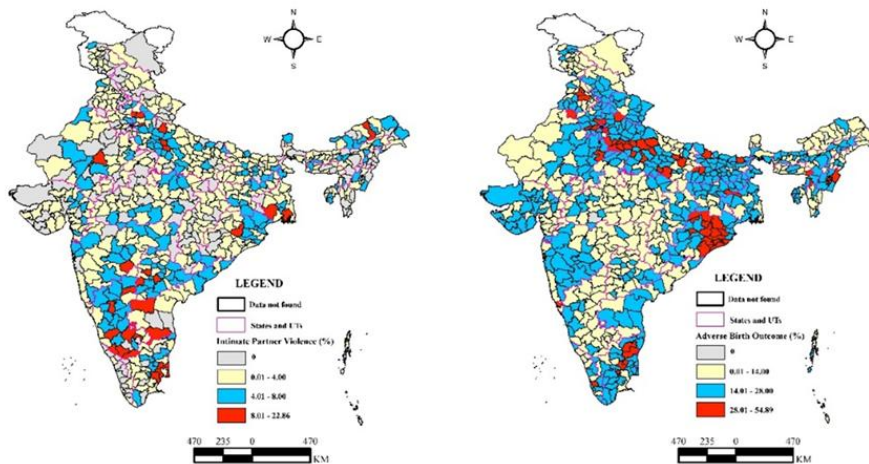


Figure 4: Inter-district variation in the prevalence of IPV during pregnancy and adverse birth outcome among women in India, 2019-21.

Source: Authors

Discussion

This study has synthesized the association between intimate partner violence (IPV) during pregnancy and adverse birth outcomes (ABO) in women of India. The findings confirm that adverse effects of IPV during pregnancy are significantly driven by demographic and socioeconomic characteristics of women. Other studies have also found that socio-economic characteristics of the women leave them susceptible to IPV during pregnancy which can lead to adverse birth outcomes including miscarriage, abortion, stillbirth and pregnancy termination (Donovan et al, 2016; Han and Stewart, 2014). Consistence with earlier studies, the study finds that social behaviour such as alcohol consumption by the partner and no education are two important factors in IPV during pregnancy (Garg et al, 2021; Gustafsson et al, 2016). The linkage between women's education and IPV during pregnancy in India is associated with economic disadvantage. Education can provide women with knowledge and skills to enhance their ability to reduce economic instability and financial dependence, thereby decrease the risk of IPV during pregnancy (Ackerson et al, 2008; Krishnan, 2005; Koenig et al, 2006; Martin et al, 1999). The study shows that the chance of a woman experiencing IPV during pregnancy reduces with the increase in her education and family income. Higher family income has been found to protect women from IPV during pregnancy in other studies also (Babu and Kar, 2010). On the other hand, the relationship between alcohol consumption by the partner with IPV is well-established

globally (Ferrer et al, 2004; Foran and Leary, 2008; Foran et al, 2012). Studies also show that partners who consumed alcohol were more likely to be violent toward their wives and partners (Bryant., 2021; Curtis et al, 2019; Babu and Kar, 2010; Indu et al, 2018). A study by Curtis et al (2019) also shows that one-third of violent incidents experienced by women were alcohol-induced. This was especially true for women from poorer socio-economic background (Bryant., 2021; Mondal and Paul., 2021). Earlier studies have found that low economic status creates financial stress, which is linked with marital conflicts (Parke et al, 2004; Thompson et al, 2006). According to the family stress model, lack of money or increased expenditure induces frequent emotional outbursts and conflicts among family members, including conflict between spouses (Parke et al, 2004). Similarly, Muslim women have been found to be more likely to experience this situation has been observed in studies carried out in Bangladesh (Silverman et al, 2007; Dalal et al, 2012). Similarly, the observation that working women are more likely to experience IPV compared to women who were not working has also been reported in other studies (Ram, 2019; Barnett, 2023; Ghatak and Dutta, 2023). The prevalence of abortion in women who were exposed to IPV obtained in the present study is also similar to that observed in other studies (Gard et al, 2021).

The present study reveals that the prevalence of adverse birth outcome is very high in women who are exposed to IPV relative to women who are not exposed to IPV during their pregnancy even after controlling the variation in socio-economic and demographic characteristics of women. Other studies in India have reported similar findings (Bramhankar and Reshmi, 2021; Dhar, 2018; Showalter, 2020). A study by Ahmed et al (2006) has revealed that the risk of perinatal mortality and neonatal mortality is higher in women who had experienced IPV than women who had not experienced IPV during pregnancy. The IPV experienced by the women during pregnancy may be because of various reasons including the fact that IPV may be common in their families and IPV is accepted as usual (Ghoshal et al, 2022), due to differential power equations in marital relationship and attitudes towards IPV (Mondal and Paul, 2021; and because the material power of women threatens patriarchal norms (Ghatak, 2023) and, therefore, the response is IPV (Weitzman, 2014).

Nevertheless, the study reveals that the prevalence of adverse birth outcome in women exposed to IPV can be reduced by improving the educational status of women (Cantarutti et al, 2017). There is, however, studies that show that higher educational status of women increases the frequency of several outcomes including low-weight birth, miscarriage, abortion, stillbirth and termination of pregnancy (Cantarutti et al, 2017). The present studies shows that consumption of alcohol by the partner is a major factor in adverse birth outcome in women exposed to IPV. Similar findings have been reported in other studies also (Raatikainen et al, 2006; Ouyang et al, 2013). It is argued that alcohol consumption by the partner rigorously strikes the health the woman including adverse birth outcome (Luan et al, 2022; Haber et al, 2005; Haber et al, 1987; Godbole et al, 2020). A study by Dasgupta (2019) shows a high transmission rate of attitude towards wife beating from one generation to the other. Studies show that a family-focused, women empowerment-based approach may address this malaise (Krishnan, 2012). A study in Iran shows how women cope with IPV through passive or neutral behaviour, and through seeking help (Barez, 2022). Improving woman autonomy and increasing awareness about interventions to reduce IPV such as a screening tool to identify IPV early in the pregnancy can prevent adverse birth outcomes (Garg et al, 2020; Alhusen et al, 2015).

Conclusion

The study concludes that the risk factors for of exposure to IPV during pregnancy and associated adverse birth outcome were deeply associated with the underlying socio-economic factors such as poverty, education, and alcohol consumption by the partner, which emphasises the need for prioritising education for all women, alleviating poverty, promoting gender equity and including IPV reduction messaging in programming and mass media. Those women who experience IPV during pregnancy but who are unable to reach out for help may be screened and identified by health workers so that the required help is directed to them to break the vicious cycle of IPV during pregnancy and adverse birth outcome. There is also a need to involve women in reproductive health decision-making within the family and in the community.

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