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Associations between intimate partner violence and pregnancy complications: A cross-sectional study in India

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Abstract:

BACKGROUND: The high prevalence rates of violence of the intimate partner affects the maternal health of the woman that sometimes ends in maternal mortality as well as the possibility of an adverse effect on the newborn. The purpose of this study was to assess the prevalence and determinants of intimate physical and sexual intimate partner violence (IPV) on mothers and examine the association between IPV and pregnancy complications.

MATERIALS AND METHODS: Data for the present study were retrieved from the National Family Health Survey-IV (2015–2016). In total, 79,729 women completed the domestic violence questions, but 24,882 were considered for this analysis. The study was restricted to currently married women aged 15–49 who had given birth to at least one child in the 5 years preceding the survey. The association between self-reporting pregnancy complications with the experience of IPV was examined using Chi-square test, followed by multivariate logistic regression.

RESULTS: The study findings show that IPV, specifically physical and sexual violence, are associated with pregnancy complications. The results show that 31.6% of the women had experienced some form of IPV. The factors associated with IPV included husband's alcohol habit, women who had witnessed parental violence, and women whose husbands had shown high marital controlling behavior. The high level of pregnancy complications was reported by women who had experienced sexual violence, emotional violence, and women whose husbands display three or more specific behaviors.

CONCLUSION: Confidential screening for IPV and prompt referral to support services could be crucial in improving women's reproductive health.

Keywords:

Intimate partner violence, marital control, pregnancy complications

Introduction

Gender-based violence has a direct influence on the well-being and lives of women and girls.^[1] Violence against women varies and is inflicted at different locations (home, workplace, school, college, etc.) by different perpetrators. They could be spouses, family members, relatives, friends, or co-workers. Violence against

women occurs in diverse races, religions, countries, and societies. However, intimate partner violence (IPV) is considered the most pervasive form of gender-based violence.^[2] Many researchers including Garcia-Moreno *et al.*,^[3] Devries *et al.*,^[4] and WHO^[5] state that IPV is not only a human rights issue but also a public health concern. Besides its impact on the maternal health of a woman, very often, IPV has an adverse effect on newborn children and ends in maternal mortality.

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Several studies have documented that the incidence of IPV during pregnancy results in premature birth, miscarriage, abortion either induced and spontaneous, preeclampsia or eclampsia, rupture of membranes prior to the onset of labor, low birth weight of baby, and sometimes leads to maternal distress and inadequate antenatal care.^[6-9] Recent studies have also documented that IPV can increase maternal health concerns.^[10,11] Pallitto *et al.* found that IPV is a consistent and strong risk factor for unintended pregnancy and abortion in a variety of settings which can result in death or serious complications when performed under unsafe conditions.^[12] Besides adverse reproductive health outcomes, IPV also may result in fatal and nonfatal adverse health outcomes of the growing fetus.^[13] The recent study by Alebel *et al.* stated that there is an association between maternal mortality and domestic violence during or at the end of pregnancy,^[14] and Berhanie *et al.* documented that a significant increase in low birth weight and preterm birth was noticed when women suffered intimate partner violence and physical violence during pregnancy.^[1] Studies of Indian women by Lee-Rife and Stephenson *et al.* proved a significant association between IPV and abortion in married women.^[15,16] With this backdrop, the aim of this study was to assess the prevalence and determinants of intimate partner violence to women and examine the association of IPV and pregnancy complications.

Materials and Methods

This analysis used the secondary data retrieved from the 4th round of the National Family Health Survey (NFHS-IV). It was conducted under the guidance and support of the Ministry of Health and Family Welfare, Government of India, during 2015–2016.^[17] The Institutional Review Board of the International Institute for Population Sciences, and ICF International Inc., provided the ethical approval for the original NFHS-IV vide number 631561.0.000.00.071.01 dated 16/10/2013. Written informed consent was taken from all subjects prior to the data collection for the original study.^[17] Ethical approval was not taken separately for this analysis as there was no direct involvement of any human subject. A total of 83,397 women were selected randomly for domestic violence module as per the ethical collection of information on domestic violence recommended by WHO (only one eligible woman per household [HH]).^[17] However, 79,729 women completed the module with 96% response rate. Of them, 24,882 women aged 15–49 who were married at the time and had given birth to at least one child in the 5 years preceding the survey were considered for this analysis.

The self-reported pregnancy complications specific to the most recent childbirth occurring in the 5 years

preceding the survey were considered as dependent variables. Some such were problems with daytime vision, convulsions, swelling of the hands, body, or face, breech presentation, prolonged labor, and excessive bleeding.

Lifetime experience of physical, emotional, and sexual intimate partner violence was considered as an independent variable.

Physical violence by their partner was measured by asking all respondents if their husbands ever slapped, kicked, dragged or beat up, twisted an arm or pulled hair, shook or threw something at them pushed with a fist or choked or burnt them. To understand the prevalence of emotional violence, respondents were asked whether their spouse said anything to humiliate them in front of others, threaten to hurt or harm them or someone close to them, and insulted or embarrassed them. Similarly, incidence of sexual violence was measured by asking: “Did your spouse ever physically force you to have sexual intercourse even when you did not want to?” and “Did he ever physically force you to perform any sexual acts which you did not like and did he force you with threats to perform sexual acts which you did not want?”. Responses were given scores 1 for yes and 0 for no. The total score obtained by each respondent ranged from 0 to 13. A woman was said to have experienced some form of IPV, if her husband did any of the above 13 actions.

Another covariate considered in this study was marital controlling behavior of the male partner. The following six questions were asked during interview: whether the husband demonstrated anger/jealousy if the respondent talked to other men, often accused the wife of being unfaithful, did not allow any association with female friends, tried to control wife’s connection with her family, insisted on knowing where respondent was at all times, and not left with any money. A score of “1” was assigned to positive response and a score of “0” to negative. The total score ranged from 0 to 6. Respondents were grouped as women with “high marital control,” (displayed three or more of the specified behaviors), “less marital control,” (displayed one or two of the specified behaviors), and woman with “no marital control,” (her husband had to display none of the above six indicators).^[18]

Gender equality variable was also considered as covariates.^[18] These included maternal age at marriage (under 18 vs. 18 or older), cash earnings in the past 12 months, ownership of personal bank account, and ownership of a mobile phone. Based on response, gender equality index was computed as “no gender equality” category (women who were married before 18 years, did not work outside the home for income, and had no bank account and mobile phone), had “moderate gender equality” with any 1–2 positive responses, and

“greater gender equality” category with any 3–4 positive responses.

The level of participation of respondents in HH decision-making was also considered as another covariate. Respondents were asked a few questions regarding their decision-making power on certain household activities such as purchases, visits to their own family or relatives, and friends’ house and decisions about their own health care.^[18] A score of “1” was assigned in cases where the woman took her own decisions on the matters mentioned above and a score of “0” for a negative response. Women who scored 1–2 were considered to have ‘little participation in HH decisions, and those who scored all three were considered as “participating more in HH decisions.” Women who scored 0 were considered as “not participating in HH decisions.”

Sociodemographics assessed included age of respondents, wealth index (as constructed by NFHS), education, religion and social caste and duration of marriage, children ever born (CEB). Husband-related factors included husband’s age, education level, and husband alcohol use. In every variable, don’t know responses were excluded from the analysis. Descriptive frequencies were calculated for all outcomes and covariates, cross-tabulated by lifetime IPV with Pearson Chi-square tests of independence. Univariate and multivariable logistic regression models were used to assess the associations between IPV on each reproductive health outcome.

Results

Of the total 24,882 respondents, 72% were Hindu; 73.7% resided in rural areas; 2.7% were illiterate; 38.3% belonged to SC/ST; 47.3% fell within poor wealth index; and 25.5 had never been exposed to the mass media. Respondents’ mean age at marriage was 19.3 years, the mean duration of marriage was 8.04 years, and the average number of CEB was 2.43. About 75.3% never engaged in any work and 62.4% made HH decisions on their own/in consultation with partners and 48.9% were controlled by their husbands. Approximately 1 in 6 husbands were illiterate, and about 30% had the alcohol habit [Table 1].

Of the 24,882 respondents, 31.6% reported having experienced at least some form of IPV [Table 2]. About 28% women experienced physical violence, 12.0% had experienced verbal and psychological (emotional) violence, and 6.8% reported sexual violence. Physical violence mainly consisted of being slapped (25.5%), pushed (11.8%), arm twisted (10.2%), punched (7.5%), kicked (7.2%), strangled or burnt (2.3%), and beaten with a weapon (0.6%).

Table 1 shows that living in urban area, being poor, Hindu religion, scheduled caste, being illiterate, agriculture occupation, longer duration of marriage, no exposure to media, having 3 or more children were significantly associated with IPV ($P < 0.05$). Husband’s educational level and occupational status, and alcohol use by husband also showed statistically significant association with IPV ($P < 0.001$). As regards gender equality, there was a significant association of participation in household decisions and marital control with IPV. The highest prevalence of all forms of violence was reported by women with higher marital control, women whose husbands use alcohol, and women who had no gender equality. About 40% reported labor complications followed by swelling of the legs (32.0%), excessive bleeding (31.7%), convulsion (17.2%), and difficulty coping with daylight and breech presentation (11.9% each).

As shown in Table 3, IPV was associated with pregnancy complications specifically excessive bleeding, swelling of the legs, and convulsions. About 32.0% of women reported bleeding, 17.2% had convulsions, 32.0% had swelling, and 11.7% had breech presentation. Moreover, 39.9% of the sample had prolonged labor; a significantly higher proportion of the women who had suffered IPV reported prolonged labor than those who had not experienced IPV (43.8% vs. 38.1%).

Pregnancy complications were high in women engaged in agriculture (10.1%), women who belonged to SC (9.5%), and Muslims (9.2%) than their respective counterparts. The level of pregnancy complications decreased with the respondent’s literacy level and media exposure. A small marginal difference was observed between rural and urban residents, young and older women, and poor and rich women. There was a higher level of pregnancy complications in women who had endured sexual violence (14.3%) and emotional violence (13.6%) than physical violence (11.2%). Similarly, women whose husbands displayed three or more specific behaviors reported a higher level of pregnancy complications (13.0%) than their counterparts.

Overall, a high level of pregnancy complications (more than 13%) was reported by women who had endured sexual violence, emotional violence, and women whose husband had displayed three or more specific behaviors [Table 4]. Moreover, the women who had been married for a long time, women who engaged in agriculture, women who did not participate in HH decisions, and women with no formal education reported high pregnancy complications (more than 10%) than their counterparts.

Three multivariate logistic regression models (I, II, and III) were carried out to examine the adjusted effect of

Table 1: Distribution of intimate partner violence (IPV) in women by sociodemographic characteristics, India, 2015-2016

Characteristics	Respondents %	Experienced any form of IPV		P-value
		Yes %	No %	
Place of residence				
Urban	26.3	26.5	73.5	<0.001
Rural	73.7	33.4	66.6	
Religion				
Hindu	72.0	33.3	66.7	<0.001
Muslims	16.0	28.9	71.1	
Christian	7.7	26.1	73.9	
Others	4.3	22.0	78.0	
Social caste				
Others	23.6	22.5	77.5	<0.001
Scheduled caste	18.2	39.1	60.9	
Scheduled tribe	20.1	31.8	68.2	
Other backward class	38.0	33.5	66.5	
Wealth index				
Poor	47.0	40.3	59.7	<0.001
Middle	20.3	30.0	70.0	
Rich	32.7	20.0	80.0	
Age				
15-24	28.1	31.9	68.1	<0.083
25-34	60.3	31.1	68.9	
35+	11.6	33.1	66.9	
Literacy level				
Illiterates	28.7	42.2	57.8	<0.001
Primary	13.8	37.8	62.2	
Secondary	46.6	27.1	72.9	
Higher	10.9	15.1	84.9	
Occupational status				
Not in work	75.3	28.9	71.1	<0.001
Agriculture	13.2	42.6	57.4	
Nonagriculture	11.5	36.6	63.4	
Duration of marriage (years)				
0-4	28.0	24.6	75.4	<0.001
5-9	39.2	31.6	68.4	
10-19	29.5	37.0	63.0	
20+	3.3	41.1	58.9	
Children ever born				
1-2 children	62.7	27.2	72.8	<0.001
3 and above	37.3	38.9	61.1	
Media exposure				
No exposure	25.5	39.6	60.4	<0.001
Exposed to any one	38.0	32.5	67.5	
Exposed to 2-3 media	36.5	25.0	75.0	
Husband's literacy level				
Illiterates	17.6	43.4	56.6	<0.001
Primary	14.5	37.9	62.1	
Secondary	54.4	29.4	70.6	
Higher	13.6	18.3	81.7	
Husband's occupational status				
Agriculture	36.6	34.0	66.0	<0.001
Prof/clerk/sales/service	30.7	24.5	75.5	
Skilled and unskilled	32.7	35.5	64.5	

Contd...

Table 1: Contd...

Characteristics	Respondents %	Experienced of any form of IPV		P-value
		Yes %	No %	
Alcohol use of husband				
No	69.6	23.1	76.9	<0.001
Yes	30.4	50.9	49.1	
Marital control				
No control	51.1	18.4	81.6	<0.001
Less marital control	31.0	38.1	61.9	
Higher marital control	17.9	58.0	42.0	
Gender equality level				
No gender equality	10.9	40.0	60.0	<0.001
Moderate gender equality	59.4	33.8	66.2	
Greater gender equality	29.7	24.0	76.0	
Household decisions				
No participation	16.8	36.7	63.3	<0.001
Less participation	20.8	38.8	61.2	
More participation	62.4	27.7	72.3	

NS=Not significant

Table 2: Distribution of various types of intimate partner violence among married women in India, 2015-2016 (n=24882)

Type of intimate partner violence	Experienced any form of IPV	
	Yes N (%)	No N (%)
Ever-experienced physical violence	7010 (28.2)	17,872 (71.8)
Ever-experienced emotional violence	2976 (12.0)	21,906 (88.0)
Ever-experienced sexual violence	1691 (6.8)	23,191 (93.2)
Ever-experienced any form of IPV	7855 (31.6)	17,027 (68.4)

IPV=Partner violence victimization

Table 3: Association between complications of pregnancy and intimate partner violence among women in India, 2015-2016 (n=24882)

Pregnancy complications	Women who reported pregnancy complication N (%)	Women who Experienced any form of IPV		P-value
		Yes N (%)	No N (%)	
Prolonged labor				
No	14,950 (60.1)	4416 (56.2)	10,534 (61.9)	<0.001
Yes	9932 (39.9)	3439 (43.8)	6493 (38.1)	
Had swelling of leg				
No	16,929 (68.0)	5051 (64.3)	11,878 (69.8)	<0.001
Yes	7953 (32.0)	2804 (35.7)	5149 (30.2)	
Experience of excessive bleeding				
No	17,006 (68.3)	5136 (65.4)	11,870 (69.7)	<0.001
Yes	7876 (31.7)	2719 (34.6)	5157 (30.3)	
Had convulsion				
No	20,595 (82.8)	6129 (78.0)	14,466 (85.0)	<0.001
Yes	4287 (17.2)	1726 (22.0)	2561 (15.0)	
Had difficulty with daylight				
No	21,931 (88.1)	6638 (84.5)	15,293 (89.8)	<0.001
Yes	2951 (11.9)	1217 (15.5)	1734 (10.2)	
Experience breech presentation				
No	21,978 (88.3)	6900 (87.8)	15,078 (88.6)	<0.104
Yes	2904 (11.7)	955 (12.2)	1949 (11.4)	
Any form of pregnancy complications				
No complication	8089 (32.5)	2103 (26.8)	5986 (35.2)	<0.001 (172.172)
Any form of complications	16,793 (67.5)	5752 (73.2)	11,041 (64.8)	
Total	24,882	17,027	7855	

IPV=Partner violence victimization, NS=Not significant

IPV and other covariates. In the first model, the physical, emotional, and sexual violence were included, and in the second model, HH decision-making status, marital control, and gender equality variables were included to find out the adjusted effect on pregnancy complications. In model 3, the step-wise logistic regression analysis was carried out to identify the factors associated with pregnancy complications.

Model 1: The gross effect of intimate partner physical and emotional violence on pregnancy resulting in complications showed a statistical significance in the first model [Table 5]. Result revealed that women who experienced physical violence were at 1.3 times higher risk to have had pregnancy complications (Adjusted Odd Ratio (AOR) = 1.336; $P < 0.001$, 95% confidence interval [CI] = 1.247–1.431) compared to those who had not experienced physical violence. Similarly, women who had experienced sexual violence were more likely to report some form of pregnancy complications (AOR = 1.289; $P < 0.001$, 95% CI = 1.138–1.459) compared to those who had not experienced sexual violence. Experience of emotional violence was also significantly associated with some form pregnancy complications in the first model (AOR = 1.192; $P < 0.001$, 95% CI = 1.081–1.315). Model I revealed that any form of pregnancy complications could be induced by all the three types of IPV ($P < 0.001$).

Model II: In this model, covariates related to respondent's gender role (decision-making, marital control, and gender equality) were put together with first model covariates. It was observed that all the covariates showed a statistically significant association with some form of pregnancy complications. Women who experienced physical and sexual violence were more likely to report some form of pregnancy complications than women who had not experienced any violence (AOR = 1.276 $P < 0.001$; AOR = 1.208 $P < 0.05$). The odds of pregnancy complications increased as the levels of marital control increased (AOR = 1.194, for less marital control and AOR = 1.408, $P < 0.001$ for high marital control). Women who fell in the high gender equity category were at 1.5 times higher risk to report some form of pregnancy complications (AOR = 1.481; $P < 0.001$, 95% CI = 1.347–1.672) compared to those in "no equity" category. Overall, pregnancy complications are influenced by all types of covariates, except emotional violence.

Model III: In this model, the step-wise logistic regression analysis was carried out to identify the factors associated with any form of pregnancy complication. It explains that women who experienced physical and sexual violence were at 1.4 and 1.2 times, respectively, higher risk of forms of pregnancy complications (AOR = 1.351, $P < 0.001$, 95% CI = 1.263–1.446; AOR = 1.246, $P < 0.05$,

95% CI = 1.100–1.411) compared to their counterparts. Experience of emotional violence did not show any significant association with pregnancy complications. Experience of any form of pregnancy complications varies greatly according to a husband's controlling behavior. As expected, women who reported higher husband's controlling behavior were at 1.6 times higher risk of some form of pregnancy complications (AOR = 1.568, $P < 0.001$, 95%CI = 1.444–1.702) than women who did not have controlling husbands. However, women who fell within the category of greater equality were at 1.2 times higher risk of having some form of pregnancy complications (AOR = 1.177, $P < 0.05$, 95% CI = 1.059–1.307). The gross effect of wealth index, respondent's educational level, and their occupational status showed statistical significance on forms of pregnancy complications at 0.5 level. Women who had been married longer were less likely to report pregnancy complications than women with fewer years of marriage (0–4) (AOR = 0.771 $P < 0.001$). Women who had had more media exposure were at 1.2 times higher risk of pregnancy complications (AOR = 1.242; $P < 0.001$, 95% CI = 1.135–1.359) compared to those who had never been exposed to mass media.

Discussion

The WHO's multi-country study on women's health and domestic violence against women observed that one-third of the women have experienced violence at some point in their lives at the hands of their husbands.^[21] Another study recorded that around the world, South Asian women reported the highest regional rate of IPV prevalence (43%).^[22] ICRW reported that a little above half of all Indian women (52%) experienced some form of spousal abuse in their lifetime.^[23] Similarly, a review analysis of 137 Indian IPV articles revealed that a median 41% of women had reported experiencing domestic violence.^[24] Another study in Haryana found that more than one-third (37%) had experienced domestic violence.^[25] The present study documented a lower prevalence of IPV than all the studies cited above. This study's finding shows that 31.6% of the women aged 15–49 who had given birth to at least one child in the 5 years preceding the survey had experienced at least some form of IPV, which indicates a slight downward trend of IPV prevalence in India.

Research findings of Jeyaseelan *et al.*, Rocca *et al.*, Das *et al.*, Reichel, and Ram *et al.* agree with the findings of the present study that low socioeconomic status seems to be a major determinant for IPV.^[26-31] This study found that low educational attainment by the spouse was an IPV correlate, which is consistent with other studies that have explored determinants of lifetime IPV.^[32-34] This study indicates that women employed in nonagricultural

Table 4: Distribution of pregnancy complications among married women by various characteristics, India, 2015-2016

Characteristics	Level of pregnancy complications		
	None N (%)	Low level N (%)	High level N (%)
Place of residence**			
Urban	2088 (31.9)	3964 (60.5)	497 (7.6)
Rural	6001 (32.7)	10,713 (58.4)	1619 (8.8)
Religion***			
Hindu	5715 (31.9)	10,654 (59.4)	1555 (8.7)
Muslim	1327 (33.4)	2278 (57.4)	365 (9.2)
Christian	728 (37.8)	1084 (56.3)	115 (6.0)
Others	319 (30.1)	661 (62.3)	81 (7.6)
Social caste***			
Others	1956 (33.3)	3476 (59.2)	439 (7.5)
Scheduled caste	1360 (30.0)	2750 (60.6)	430 (9.5)
Scheduled tribe	1871 (37.4)	2749 (54.9)	358 (7.7)
Other backward class	2902 (30.7)	5702 (60.2)	862 (9.1)
Wealth index***			
Poor	3995 (34.2)	6631 (56.7)	1068 (9.1)
Middle	1650 (32.7)	2992 (59.3)	404 (8.0)
Rich	2444 (30.0)	5054 (62.1)	644 (7.9)
Age**			
15-24	2202 (31.5)	4163 (59.6)	620 (8.9)
25-34	4857 (32.3)	8911 (59.3)	1248 (8.3)
35+	1030 (35.8)	1603 (55.6)	248 (8.6)
Literacy level***			
Illiterates	2532 (35.5)	3924 (54.9)	686 (9.6)
Primary	1137 (33.1)	2005 (58.3)	296 (8.6)
Secondary	3620 (31.2)	7027 (60.7)	939 (8.1)
Higher	800 (29.5)	1721 (63.4)	195 (7.2)
Occupational status***			
Not in work	6157 (33.0)	11,001 (58.7)	1555 (8.3)
Agriculture	1043 (31.7)	1914 (58.2)	332 (10.1)
Nonagriculture	859 (30.1)	1762 (61.8)	229 (8.0)
Duration of marriage in years***			
0-4	231 (29.2)	4337 (62.3)	590 (8.5)
5-9	3238 (33.2)	5711 (58.5)	813 (8.3)
10-19	2516 (34.3)	4191 (57.1)	627 (8.5)
20+	304 (36.7)	438 (52.9)	86 (10.4)
Children ever born***			
1-2 Children	4887 (31.3)	9437 (60.5)	1287 (8.2)
3 and above	3202 (34.5)	5240 (56.5)	829 (8.9)
Media exposure***			
No exposure	2264 (35.7)	3488 (55.0)	592 (9.3)
Exposed to any one	3149 (33.3)	5571 (59.0)	729 (7.7)
Exposed to 2-3 media	2676 (29.4)	5618 (61.8)	795 (8.7)
Husband's literacy***			
Illiterates	1512 (34.5)	2430 (55.4)	442 (10.1)
Primary	1200 (33.4)	2084 (58.0)	312 (8.7)
Secondary	4352 (32.2)	8067 (59.6)	1111 (8.2)
Higher	1025 (30.4)	2096 (62.2)	251 (7.4)
Husband's occupational status***			
Agriculture	3037 (33.3)	5232 (57.4)	844 (9.3)
Prof/clerk/sales/service	2444 (32.0)	4551 (59.5)	649 (8.5)
Skilled and unskilled	2608 (32.1)	4894 (60.2)	623 (7.7)

Contd...

Table 4: Contd...

Characteristics	Level of pregnancy complications		
	None N (%)	Low level N (%)	High level N (%)
Alcohol use of husband**			
No	5742 (33.2)	10126 (58.5)	1453 (8.4)
Yes	2347 (31.0)	4551 (60.2)	663 (8.8)
HH decision***			
No participation	1385 (33.1)	2390 (57.1)	409 (9.8)
Less participation	1533 (29.6)	3189 (61.5)	461 (8.9)
More participation	5171 (33.3)	9098 (58.6)	1246 (8.0)
Marital control***			
No control	4644 (36.5)	7199 (56.6)	876 (6.9)
Less marital control	2327 (30.2)	4723 (61.2)	662 (8.6)
Higher marital control	1118 (25.1)	2755 (61.9)	578 (13.0)
Gender equality level***			
No gender equality	1002 (36.8)	1480 (54.4)	240 (8.8)
Moderate gender equality	4847 (32.8)	8681 (58.8)	1241 (8.4)
Greater gender equality	2240 (30.3)	4516 (61.1)	635 (8.6)
Experience of intimate partner violence			
Emotional violence***	749 (25.2)	1823 (61.3)	404 (13.6)
Physical violence***	1869 (26.7)	4357 (62.2)	784 (11.2)
Sexual violence***	395 (23.4)	1055 (62.4)	241 (14.3)
Any form of intimate partner violence***	2103 (26.8)	4878 (62.1)	874 (11.1)

***Statistically significant at $P < 0.001$, **Statistically significant at $P < 0.01$

and agricultural sectors are more at risk of experiencing IPV compared to homemakers. This corroborates the findings of Kamat *et al.*, Babu and Kar, Madhivanan, Krupp and Reingold, George *et al.*, and Ram *et al.*^[31,35-38]

Further, the study was aimed at assessing the association between IPV and pregnancy complications. Devries, Urquia *et al.*, and Nunes *et al.* noticed that the severity and type of intimate partner violence could determine the severity of the outcome.^[39-41] This study also found a statistically significant association between the experience of IPV and pregnancy complications. The research findings by Dalal, Wang, Svanstrom, WHO, and Dalal and Lindqvist are also in agreement with the findings of the present study that women who suffered IPV reported more acts of controlling behavior by their intimate partner.^[42-44] Low educational status of women has been suggested as a risk factor for pregnancy complications in this study as indicated in previous studies by Joshi *et al.*, Kiran *et al.*, Mohammed *et al.*, Solomon *et al.*, Shrivastava and Shrivastava, and Naik *et al.*^[32,33,45-48] The study found that the risk of pregnancy complications was significantly higher in those who had endured some violence compared to those who had not suffered any violence. The main reason for this situation would be the powerlessness and subordination of women in HHs. Dynamic empowerment and involvement of women in social and economic activities should increase their bargaining power in the HHs. In addition, it is necessary to identify battered women in the society and provide special programs and support

for safe motherhood, specifically for those who have been victims of their partner's violence during their pregnancy.

In view of this, the role of frontline health-care providers (ASHA, multipurpose health workers, and village health nurses) becomes critical. Therefore, these frontline health-care providers who provide ANC services could be the channel whereby the issue of domestic violence is dealt with. This would require some effort on the part of the FHWs to identify high-risk women and provide counsel on how to protect themselves from GBV during pregnancy.

Conclusion

The present study suggests that IPV is a common occurrence across the different socioeconomic groups of Indian communities. However, the less empowered and marginalized women fall victim to their partners' violence more frequently than other married women. The study also showed that women who reported physical and sexual IPV were more likely to report more pregnancy complications than the women who experienced emotional IPV. As expected, a husband's controlling behavior created a higher risk of forms of pregnancy complications. The results highlight the significance of evaluating the consequence of IPV on the complications of pregnancy. The findings can be used by frontline field workers in India (domestic violence organizations) to develop and

Table 5: Logistic regression analyses examining associations between the likelihood of pregnancy complications and selected characteristics of respondents in India

Selected characteristics of respondents	Adjusted risk ratio (95% CI)		
	Model I	Model II	Model III
Not exposed to emotional violence (reference)	1.000		
Exposed to emotional violence	1.192*** (1.081-1.315)	NS	NS
Not exposed to physical violence (reference)	1.000	1.000	1.000
Exposed to physical violence	1.336*** (1.247-1.431)	1.276*** (1.189-1.368)	1.351*** (1.263-1.446)
Not exposed to sexual violence (reference)	1.000	1.000	1.000
Exposed to sexual violence	1.289*** (1.138-1.459)	1.208** (1.066-1.370)	1.246** (1.100-1.411)
Participation in household decisions		**	*
No participation		1.000	1.000
Less participation (1-2)		1.139 (1.042-1.244)	1.122 (1.026-1.227)
More participation (all 3)		1.014 (0.941-1.092)	1.018 (0.944-1.098)
Marital control		***	***
No control		1.000	1.000
Less marital control		1.270 (1.194-1.351)	1.272 (1.195-1.354)
Higher marital control		1.529 (1.408-1.660)	1.568 (1.444-1.702)
Gender equality level		***	**
No gender equality		1.000	1.000
Moderate gender equality		1.238 (1.136-1.350)	1.124 (1.029-1.228)
Greater gender equality		1.481 (1.347-1.627)	1.177 (1.059-1.307)
Social caste			**
Others			1.000
Scheduled caste			1.149 (1.050-1.258)
Scheduled tribe			0.891 (0.811-0.979)
Other backward class			1.118 (1.039-1.203)
Occupational status			**
Not in work force			1.000
Agriculture			1.141 (1.048-1.243)
Nonagriculture			1.093 (0.998-1.196)
Duration of marriage (years)			***
0-4			1.000
5-9			0.819 (0.765-0.877)
10-19			0.811 (0.752-0.875)
20+			0.771 (0.658-0.930)
Media exposure			***
No exposure			1.000
Exposed to any one			1.073 (0.995-1.157)
Exposed to 2-3 media			1.242 (1.135-1.359)
Constant	1.855	1.251	1.216

***Statistically significant at $P < 0.001$, **Statistically significant at $P < 0.01$. CI=Confidence interval

target interventions to vulnerable communities. In addition, this study also fills the gap in the literature on the examination of the link between physical IPV and pregnancy complications in India. The present analysis suggests that it is necessary to incorporate IPV screening and other services into primary health care in order to improve women's reproductive health. Health workers at the grassroots level should be trained on how to screen, counsel, treat, and follow up abused women. Above all, there is a greater need to educate the young generation about the norms and values of mutual respect and healthy relationships between married couples.

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Conflicts of interest

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