

Domestic Violence and Uptake of Ante-Natal Care Services in India

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ABSTRACT

Background: Antenatal care (ANC) is vital for improving maternal and child health by offering risk screening and health education (WHO, 2016). This study assesses the prevalence of comprehensive ANC among married women in India. It explores the impact of domestic violence (DV) on ANC service utilization and examines socio-economic factors that affect these dynamics.

Methods: This study analyzed the fifth and most recent published round of the National Family Health Survey (2019–21). Pregnancy that occurred in the preceding five years among currently married women living with their husbands were considered for the analysis with an analytical sample of 15,718 women. A series of logistic regression models has been conducted to understand the association between domestic violence and full ANC service utilization.

Results: While exploring the relationship between DV and uptake of ante-natal services, results suggest a significantly higher odd of receiving full ANC persists among women who never experienced emotional violence [AOR=1.82; p<0.01], physical violence [AOR=2.03; p<0.001] and sexual violence [AOR=2.33; p<0.01], compared to those who have experienced violence, when adjusted for individual, husband and household level characteristics.

Conclusions: DV significantly hinders access to essential ANC services, increasing maternal mortality risks in South Asia. Public health initiatives must incorporate DV screening and interventions within ANC programs, focusing on education and support for women. Addressing these issues is critical for improving maternal health outcomes.

Keywords: Antenatal care, maternal health, Domestic violence, intimate partner violence

Essence of the study: This study assesses the impact of domestic violence (DV) on the prevalence of comprehensive ANC service utilization and examines among married women in India. It explores

socio-economic factors that affect these dynamics.

INTRODUCTION

World Health Organization (WHO) described antenatal care (ANC) which includes screening for risk, prevention, diagnosis, and treatment along with health education and promotion delivered by skilled healthcare personnel to pregnant women ensuring both mother and baby are in optimum health conditions throughout the gestation period(1) and consider as preventive health care (2). ANC reduces maternal and perinatal morbidity and mortality (1) both directly by identifying complications associated with pregnancy for treatment and indirectly by detecting women at higher risk of developing complications to ensure the necessary referrals (1). However, the number of deaths associated with pregnancy continues to be too high and is a global public health issue (3). According to estimates, there were 295,000 maternal deaths worldwide in 2017 (WHO, 2019), and 2 million stillbirths are reported annually(4). These fatalities are disproportionately high in low and middle-income nations. ANC serves as a bridge between women and their families and the healthcare system, which possibly promotes greater utilization of vital services like breastfeeding and nutritional counseling, post-partum family planning, and vaccination for children (5).

ANC service utilization is considered a key strategy to improve maternal and child health outcomes (6). The numerous benefits of ANC services help to detect, treat, and prevent pregnancy-related issues and provide tetanus toxoid (TT) immunization, iron tablets, de-worming tablets, nutritional care, advice on appropriate nutrients intake and adequate rest (7). However, millions of women from low-income countries are not receiving the recommended standard and quality of ANC services(8). ANC often serves as a woman's first point of entry into a health care system, and it is an opportunity for health professionals to encourage

women to continue ANC and identify and help women who experience domestic violence (DV). The routine screening for DV during ANC visits could open a way for women to get psychological and emotional support and help them connect to available resources. It might also help ANC providers in ensuring that the psychological effect of DV on childbirth and labor process less complicated (9).

Women are most frequently victims of DV which is a significant public health issue (10). Globally, according to an estimate, 30% of women who have ever been in a relationship reported experiencing DV (11). The prevalence of self-reported DV is particularly high in low-and middle-income (LMIC) regions, ranging from 30% in Central and South America to nearly 38% in Southeast Asia (11). To define DV is any behavior within an intimate relationship that causes physical, psychological, or sexual harm (12). Several studies from other LMICs have demonstrated that DV was associated with negative maternal and child health outcomes (13). For example, studies revealed that intimate partner violence during pregnancy was significantly associated with the termination of pregnancy (14), premature rupture of membranes and increased risk of low birth weight (13), perinatal and neonatal mortality (15), and pre-term labor which increases in the number of cesarean section cases and hospitalization during pregnancy (16). Similarly, other studies showed that violence during pregnancy is associated with increased risk of common mental disorders, postnatal depression, and poor health-related quality of life (17).

The prevalence of ANC healthcare access was found to be relatively modest when compared to the increase in the rate of institutional delivery, which has doubled from 39 to 79% during the same time period, which may be largely driven by the conditional cash transfer schemes of the government (18). This differential coverage reflects a missed opportunity, as about one-fourth of the maternal deaths are attributable

to pre-eclampsia, eclampsia, and antepartum hemorrhage, which could be identified and managed during the antenatal contacts (19). In India, the proportion of pregnant women receiving the minimum 4 antenatal visits has increased from 37 to 51% during 2006–2016(18). However, the experience of violence could limit women's access to maternal healthcare services, reducing the benefits from such services. Victims of DV likely to have reduced uptake of ANC due to social and emotional barriers. Due to limited studies on the subject, the present study attempts to understand the relationship between DV and its effect on the uptake of ANC services for the last pregnancy that occurred in the preceding five years among currently married women living with their husbands.

MATERIALS & METHODS

Data

This study analyzed the fifth and most recent published round of the National Family Health Survey (2019–21), a large-scale demographic household survey conducted by the International Institute for Population Sciences, Mumbai, under the stewardship of the Ministry of Health & Family Welfare (MoHFW), Government of India. The NFHS-5 uses a two-stage sampling design in both urban and rural areas. NFHS-5 involved interviews with 636,699 households and 724,115 women aged 15–49 years, across the 707 districts of India with a response rate of 97% for women. See the NFHS-5 National report for further details regarding study design, sampling, tools and protocols (20).

Analytic sample

The information on domestic violence by the husband was collected from the women in a sub-sample of 15 percent of households. Only one eligible woman aged 15-49 per household was randomly selected to answer the question on domestic violence (n=72,320). Trained female enumerators surveyed women in a private setting without other family members present in the

respondent's primary language. We limited our analytic sample to women for whom DV data were available. As the study's primary objective is to assess the antenatal care service utilization for the last birth in the past five years, the sample size was reduced to n=21,405. Further, the analysis is restricted to currently married women as a minor proportion of them were living with partners (<1.5%), and hence (n=303) participants were dropped from the analysis. Similarly, those not living with their husbands were excluded from the analysis (n=2280). Domestic violence is considered a major predictor variable, and hence (n=3,104) cases were excluded from the analysis, majorly because of the presence of the husband during the interview. The final analytical sample for the study was considered to be 15,718 women.

Measures

Outcome variable

Full ANC is one of the most important indicators of maternal healthcare utilization according to the guidelines developed by the Ministry of Health and Family Welfare (2010) and the WHO (2006). Providing all components of full ANC services to pregnant women is also integral to the Reproductive and Child Health Program in India (21). This paper defines full ANC as having at least four antenatal visits, at least two tetanus toxoid injections, and receiving folic acid tablets for at least 100 days or more during the last pregnancy. It is a binary variable, i.e. 0 represents women who either did not receive any ANC service or received partial ANC service, and 1 represents women who received full ANC services during their last pregnancy.

Primary explanatory variables

Our primary independent variable of interest is domestic violence by husband. NFHS collects information on ever-experienced emotional, physical, and sexual violence and also captures its severity by categorizing it as often, sometimes, and never experienced any violence in the past

12 months. Domestic violence (DV) was measured by items on physical (seven items), sexual (three items), or emotional violence (three items) that were selected from the Women's Questionnaire, a validated questionnaire developed by the WHO for research on intimate partner violence (22). Emotional violence includes questions related to women's experience of humiliation, insult, and threats of harm. Similarly, physical violence includes arm twisted or hair pulled, threatened with a knife/gun, strangled or burnt, kicked or dragged, punched with a fist or hit by something harmful, slapped and pushed or shook. Whereas, sexual violence includes being physically forced into unwanted sex, forced into other unwanted sexual acts, and physically forced to perform sexual acts. For the present study, variables like emotional, physical, and sexual violence have been computed and divided into three categories, i.e., never, sometimes, and often experienced violence.

Other covariates

Covariates that have been theoretically and empirically proven to be significantly associated with domestic violence and ANC service utilization have been included in the study and were measured at the individual, husband, and household levels along with place of residence. The individual-level demographics included women's age, education, parity, occupation, and mass media exposure. Similarly, husband education and alcohol use are considered husband-level variables. Additionally, household-level variables, such as religion, ethnicity, wealth index, and place of residence, are considered, i.e., rural/urban and Indian regions. Regions were defined based on the definition used in the NFHS report. The north region includes Chandigarh, Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Ladakh, Punjab, Rajasthan, and Uttarakhand. Similarly, the Central region includes Chhattisgarh, Madhya Pradesh, and Uttar Pradesh. The eastern region includes Bihar,

Jharkhand, Odisha, and West Bengal. The northeast region includes Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. West includes Dadra & Nagar Haveli, Daman & Diu, Goa, Gujarat, and Maharashtra. Finally, the south region includes Tamil Nadu, Kerala, Karnataka, Andhra Pradesh, Telangana, Puducherry, Lakshadweep, and Andaman & Nicobar Island.

STATISTICAL ANALYSIS

At first, we computed descriptive statistics and estimated the prevalence of full ANC service utilization along with the components of ANC services. Second, we assessed differences between women who reported experience of domestic violence and those who did not and presented against all outcome variables by potential background characteristics of women. Finally, an assessment has been carried out to determine whether each form of domestic violence (i.e., emotional, physical, and sexual violence) is associated with full ANC services utilization. A multivariate logistic regression model has been employed to understand the association between domestic violence and ANC use after controlling for various levels of women characteristics such as individual, husband, and household level characteristics. Subsequently, a series of logistic regression models has been conducted to understand the association between domestic violence and full ANC service utilization. The initial model was a simple regression with no covariates (Model 1). Similarly, multivariable analysis has been conducted in the subsequent models to adjust the covariates at each of our levels of interest. Model 2 included individual-level characteristics (women's age, education, parity, work status, and mass media exposure). Model 3 included husband-level characteristics (his education and alcohol use). Model 4 included individual, husband, and household level characteristics (religion, ethnicity, wealth) along with place

of residence and Indian regions. A goodness of fit test (the likelihood-ratio test) was used to compare the models and understand if each successive model's explanatory variables fit significantly better than the previous model. We applied appropriate sampling weights to all analyses. The detailed strategy for calculating weights is given in the NFHS-5 report (20). All data analyses were conducted using STATA 15.1 and were adjusted for survey design.

RESULT

Table 1 presents the distribution of women by their socio-economic characteristic,

along with the prevalence of full antenatal care for their last child in the preceding five years. Results suggest that only about one-third of women received full antenatal care (31%). Access to full antenatal care services suggest an expected patten as it is directly proportional as increase in level of education. Whereas, women parity suggests an inverse relationship i.e. increase in parity leads to decrease in full ANC coverage. Notable difference has been observed in coverage of full ANC by emotional, physical and sexual violence i.e. those who never and often experience DV.

Table 1: Percent of currently married women who received full antenatal care (ANC) for the last child in the past five years by background characteristics and by type of domestic violence

Background characteristics	Sample distribution		Full ANC
	Frequency	Percent	
Women age in years			
15-24	5,176	32.9	30.8
25-34	8,973	57.1	32.7
35-49	1,569	10.0	30.1
Women education			
Up to primary	4,532	28.8	18.9
Secondary or higher	11,186	71.2	37.1
Parity			
One	5,408	34.4	40.7
Two	5,772	36.7	32.1
Three	2,556	16.3	23.8
4+	1,981	12.6	17.4
Women occupation			
Not working	12,257	78.0	32.0
Working	3,461	22.0	31.1
Media exposure			
Low	4,044	25.7	21.4
Moderate	7,292	46.4	33.0
High	4,382	27.9	39.5
Husband education			
Up to primary	4,222	26.9	22.9
Secondary or higher	11,496	73.1	35.1
Alcohol use by husband			
Never	12,659	80.5	31.7
Sometimes	2,601	16.5	32.8
Often	458	2.9	29.9
Religion			
Hindu	11,866	75.5	31.7
Muslim	3,134	19.9	31.3
Christian	399	2.5	41.2
Other	319	2.0	28.6
Caste group			
SC	3,368	21.4	31.6
ST	1,498	9.5	30.2
OBC	6,358	40.5	28.9
Others	3,131	19.9	39.1
Don't Know	1,363	8.7	31.1

Household wealth index			
Poorest	3,341	21.3	20.2
Poorer	3,426	21.8	26.4
Middle	3,187	20.3	34.0
Richer	3,096	19.7	36.8
Richest	2,667	17.0	45.1
Place of residence			
Urban	4,685	29.8	39.5
Rural	11,033	70.2	28.6
Regions			
North	1,328	8.4	27.4
Central	1,981	12.6	18.4
East	4,601	29.3	27.6
North-east	1,015	6.5	26.5
West	3,349	21.3	36.4
South	3,443	21.9	44.2
Emotional violence			
Never	13,919	88.6	32.6
Sometimes	1,384	8.8	28.3
Often	414	2.6	18.9
Physical violence			
Never	11,674	74.3	34.4
Sometimes	3,138	20.0	26.4
Often	906	5.8	17.1
Sexual violence			
Never	14,862	94.6	32.6
Sometimes	394	2.5	21.8
Often	462	2.9	14.5
TOTAL	15,718	100.0	31.8

In Table 2, an attempt has been made to explore the relationship of emotional violence and full ANC when adjusted for various level of variables such as individual, husband and household level characteristics. Unadjusted odds ratios suggest that women who never experienced emotional violence were more likely to report full ANC [OR=2.07; $p<0.001$] compared to those who often experienced emotional violence. A significantly higher odd of receiving full ANC persist when additionally adjusted for individual level characteristics [AOR=1.66; $p<0.05$], husband level characteristics [AOR=1.79; $p<0.01$], and household level characteristics [AOR=1.82; $p<0.01$].

In the similar vein, an attempt has been made to understand the effect of physical violence and the coverage of ANC and presented in Table 3. Results of logistic regression analysis suggest that those who never experienced physical violence were more likely to access full ANC [OR=2.55;

$p<0.001$] compared to women who often experienced physical. A significantly higher odd of receiving full ANC persist when adjusted for individual level characteristics [AOR=1.87; $p<0.001$], husband level characteristics [AOR=2.04; $p<0.001$], and household level characteristics [AOR=2.02; $p<0.001$].

In case of sexual violence, an attempt has been made to understand its effect on the coverage of ANC and presented in Table 4. Results of logistic regression analysis suggest that those who never experienced sexual violence were more likely to access full ANC [OR=2.86; $p<0.001$] compared to women who often experienced it. A significantly higher odd of receiving full ANC persist when adjusted for individual level characteristics [AOR=2.30; $p<0.01$], husband level characteristics [AOR=2.41; $p<0.001$], and household level characteristics [AOR=2.32; $p<0.01$].

Table 2: Adjusted Odds Ratios (AOR) for the association between emotional violence and utilization of full ANC services during last pregnancy in the preceding five years, by the currently married women living with their husband, India, 2019-21 (N = 15718).

Background characteristics	Model 1		Model 2		Model 3		Model 4	
	OR	CI	AOR	CI	AOR	CI	AOR	CI
Emotional violence								
Never	2.073***	[1.405,3.060]	1.656*	[1.121,2.445]	1.793**	[1.192,2.698]	1.817**	[1.198,2.755]
Sometimes	1.693*	[1.081,2.651]	1.501	[0.951,2.369]	1.575	[0.978,2.537]	1.594	[0.984,2.584]
Often®								
Women age in years								
15-24®								
25-34			1.454***	[1.219,1.733]	1.449***	[1.215,1.727]	1.378***	[1.151,1.649]
35-49			1.806***	[1.344,2.428]	1.798***	[1.338,2.417]	1.671***	[1.237,2.256]
Women education								
Up to primary®								
Secondary or higher			1.770***	[1.466,2.136]	1.754***	[1.444,2.130]	1.558***	[1.277,1.901]
Parity								
One®								
Two			0.643***	[0.542,0.764]	0.638***	[0.538,0.757]	0.635***	[0.534,0.753]
Three			0.458***	[0.371,0.567]	0.456***	[0.368,0.564]	0.467***	[0.376,0.580]
4+			0.360***	[0.256,0.506]	0.361***	[0.257,0.508]	0.409***	[0.291,0.576]
Women work status								
Not working®								
Working			1.045	[0.896,1.218]	1.039	[0.891,1.211]	1.016	[0.863,1.196]
Media exposure								
Low®								
Moderate			1.374**	[1.117,1.690]	1.350**	[1.096,1.662]	1.175	[0.937,1.474]
High			1.474**	[1.169,1.859]	1.442**	[1.139,1.825]	1.077	[0.828,1.400]
Alcohol use by husband								
Never®								
Sometimes					1.178	[0.996,1.394]	1.171	[0.981,1.397]
Often					1.377	[0.864,2.196]	1.406	[0.893,2.216]
Regions								
North®								
Central							0.773**	[0.644,0.926]
East							1.346**	[1.090,1.662]

North-east						1.067	[0.840,1.355]
West						1.483***	[1.194,1.842]
South						2.194***	[1.805,2.669]
<i>Pseudo R2</i>	0.0024		0.0479		0.0489		0.0719
<i>Wald chi2</i>	15.48		229.62		244.90		422.38

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; 95% confidence intervals in brackets; ® Reference category; Full ANC comprised at least 4 ANC visits, at least 2 TT injections and 100+ iron folic acid tablets or syrup. Model 3 is additionally adjusted for the husband's education. Model 4 is additionally adjusted for place of residence (urban/rural) and other household characteristics such as religion, caste, and wealth quintile.

Table 3: Adjusted Odds Ratios (AOR) for the association between physical violence and utilization of full ANC services during last pregnancy in the preceding five years, by the currently married women living with their husband, India, 2019-21 (N = 15718).

Background characteristics	Model 1		Model 2		Model 3		Model 4	
	OR	CI	AOR	CI	AOR	CI	AOR	CI
Emotional violence								
Never	2.550***	[1.837,3.539]	1.871***	[1.341,2.610]	2.045***	[1.438,2.908]	2.027***	[1.411,2.912]
Sometimes	1.738**	[1.219,2.478]	1.555*	[1.084,2.231]	1.636**	[1.126,2.376]	1.656**	[1.130,2.427]
Often®								
Women age in years								
15-24®								
25-34			1.431***	[1.202,1.705]	1.427***	[1.198,1.700]	1.363***	[1.140,1.631]
35-49			1.765***	[1.316,2.368]	1.757***	[1.309,2.358]	1.647**	[1.221,2.221]
Women education								
Up to primary®								
Secondary or higher			1.738***	[1.437,2.103]	1.740***	[1.432,2.114]	1.553***	[1.272,1.895]
Parity								
One®								
Two			0.651***	[0.549,0.772]	0.645***	[0.544,0.764]	0.638***	[0.538,0.757]
Three			0.474***	[0.383,0.585]	0.471***	[0.381,0.582]	0.480***	[0.387,0.595]
4+			0.377***	[0.269,0.528]	0.378***	[0.269,0.531]	0.423***	[0.301,0.595]
Women work status								
Not working®								
Working			1.048	[0.899,1.222]	1.039	[0.891,1.212]	1.016	[0.863,1.195]
Media exposure								
Low®								
Moderate			1.362**	[1.107,1.675]	1.334**	[1.084,1.642]	1.171	[0.933,1.470]

High			1.457**	[1.156,1.838]	1.424**	[1.125,1.802]	1.076	[0.826,1.402]
Alcohol use by husband								
Never®								
Sometimes			15718		1.236*	[1.040,1.467]	1.225*	[1.023,1.466]
Often					1.495	[0.936,2.390]	1.511	[0.959,2.380]
Regions								
North®								
Central							0.785**	[0.655,0.942]
East							1.349**	[1.093,1.665]
North-east							1.073	[0.845,1.364]
West							1.490***	[1.200,1.849]
South							2.229***	[1.833,2.711]
<i>Pseudo R2</i>	0.0093		0.05		0.0515		0.0741	
<i>Wald chi2</i>	44.99		236.45		251.47		425.7	
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; 95% confidence intervals in brackets; ® Reference category; Full ANC comprised of at least 4 ANC visits, at least 2 TT injections and 100+ iron folic acid tablets or syrup. Model 3 is additionally adjusted for the husband's education. Model 4 is additionally adjusted for place of residence (urban/rural), and other household characteristics such as religion, caste and wealth quintile.								

Table 4: Adjusted Odds Ratios (AOR) for the association between sexual violence and utilization of full ANC services during the last pregnancy in the preceding five years by the currently married women living with their husband, India, 2019-21 (N = 15718).

Background characteristics	Model 1		Model 2		Model 3		Model 4	
	OR	CI	AOR	CI	AOR	CI	AOR	CI
Sexual violence								
Never	2.862***	[1.752,4.674]	2.295**	[1.383,3.808]	2.414***	[1.449,4.023]	2.327**	[1.377,3.933]
Sometimes	1.649	[0.831,3.272]	1.661	[0.834,3.306]	1.7	[0.850,3.401]	1.721	[0.857,3.455]
Often®								
Women age in years								
15-24®								
25-34			1.448***	[1.215,1.727]	1.446***	[1.213,1.724]	1.378***	[1.151,1.649]
35-49			1.797***	[1.337,2.416]	1.794***	[1.334,2.411]	1.670***	[1.236,2.255]
Women education								
Up to primary®								
Secondary or higher			1.763***	[1.459,2.129]	1.754***	[1.443,2.133]	1.563***	[1.279,1.909]
Parity								
One®								

Two			0.642***	[0.541,0.763]	0.636***	[0.536,0.754]	0.632***	[0.532,0.751]
Three			0.457***	[0.370,0.566]	0.454***	[0.366,0.561]	0.464***	[0.374,0.576]
4+			0.364***	[0.259,0.511]	0.363***	[0.258,0.511]	0.411***	[0.293,0.578]
Women work status								
Not working®								
Working			1.051	[0.903,1.224]	1.044	[0.896,1.216]	1.022	[0.870,1.201]
Media exposure								
Low®								
Moderate			1.358**	[1.104,1.670]	1.334**	[1.084,1.642]	1.169	[0.932,1.466]
High			1.458**	[1.155,1.839]	1.427**	[1.127,1.806]	1.074	[0.826,1.398]
Alcohol use by husband								
Never®								
Sometimes					1.190*	[1.005,1.407]	1.182	[0.990,1.411]
Often					1.341	[0.843,2.134]	1.361	[0.867,2.135]
Regions								
North®								
Central							0.769**	[0.641,0.922]
East							1.343**	[1.087,1.659]
North-east							1.064	[0.837,1.351]
West							1.485***	[1.196,1.844]
South							2.167***	[1.782,2.635]
Pseudo R2	0.005		0.0495		0.0505		0.0731	
Wald chi2	22.17		234.27		248.52		424.4	
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$; 95% confidence intervals in brackets; ® Reference category; Full ANC comprised of at least 4 ANC visits, at least 2 TT injections and 100+ iron folic acid tablets or syrup. Model 3 is additionally adjusted for the husband's education. Model 4 is additionally adjusted for place of residence (urban/rural) and other household characteristics such as religion, caste, and wealth quintile.								

DISCUSSION

The present study aims to assess the relationship between DV and its effect on uptake of ANC services for the last pregnancy occurred in the preceding five years among currently married women living with their husband. Results depict a low coverage of full ANC among women experienced DV i.e. emotional (19 vs 33%), physical (17 vs 34%) and sexual violence (15 vs 33%) respectively for low or never experienced violence and experienced severe violence.

While exploring the relationship between emotional violence and full ANC, a significantly higher odd of receiving full ANC persists among women who never experienced emotional violence [AOR=1.82; $p<0.01$] compared to those who experienced severe violence, after accounting for individual, husband and household level characteristics. Similar studies found that women experiencing emotional abuse, such as verbal assault and humiliation, were less likely to attend antenatal visits compared to those not facing DV (23). This emotional violence during pregnancy was significantly linked to inadequate ANC visits, with lifetime exposure associated with increased risks of insufficient care (24).

With respect to physical violence, a significantly higher odds of receiving full ANC persist among women who never experienced physical violence [AOR=2.03; $p<0.001$] compared to those who experienced severe physical violence, after accounting for individual, husband and household level characteristics. Prior evidence suggests that women who reported being physically abused by their partner were less likely to have four or more antenatal visits (23). Women experiencing physical violence showed lower utilization rates for delivery services at healthcare facilities compared to those who did not face violence. Socio-demographic and background characteristics significantly influenced the frequency of ANC visits and the choice of institutional delivery among

women (25). A quarter of women reported lifetime experiences of violent physical behavior from their husbands, with prevalence varying by location. Rural women reported the highest rates of beating, while urban-slum women experienced more hitting and kicking. The poorest strata, particularly in rural and urban-slum areas, faced the highest levels of violence, whereas urban non-slum women reported the least. Analysis revealed that women from higher socioeconomic backgrounds reported lower instances of physical violence, influenced by factors like household crowding, education, and social support. Which significantly lower the frequency ANC visits (26)

Regarding sexual violence, a significantly higher odds of receiving full ANC persists among women who never experienced sexual violence [AOR=2.33; $p<0.01$] compared to those who experienced severe physical violence, after accounting for individual, husband and household level characteristics. Pregnant women with uneducated husbands faced significantly higher risks of sexual violence, being three times more likely with husbands lacking formal education and six times more likely with no education. Women with only secondary education had a threefold risk, while housewives and government employees experienced four times the likelihood of violence. Promoting ANC visits could enhance healthy sexuality and potentially reduce the incidence of sexual violence (27). Similar results found as the odds of having four or more antenatal visits was less in women who reported experience of sexual abuse (like forced into unwanted sex, forced into unwanted sexual acts) compared to those who did not during pregnancy (23). Exposure to violence during pregnancy is harmful to both mother and the unborn child, and it can result in pregnancy-specific behaviours like skipping ANC appointments and not starting ANC, as well as birth outcomes including preterm labour and low birth weight (28).

Multifaceted health issues caused by domestic violence include gastrointestinal issues, chronic pain, cardiovascular issues, a higher rate of depression, low self-esteem, suicidality, anal and vaginal tearing, sexual dysfunction, STDs, pelvic inflammation, low or insufficient gestational weight, antenatal hospitalization, preterm delivery, low birth weight, miscarriages, and neonatal and child mortality (29). In such context, violence is a major concern and early studies on the relationship between violence against women and reproductive health in developing countries led to a greater understanding of the problem and its related adverse health outcomes (30). Health outcomes among IPV victims may follow three possible pathways (11). First, poor health outcomes may be due to injuries such as musculoskeletal or soft tissue damage resulting from experience of violence. Second, coercion and male partners' controlling behaviors may negatively affect women's health by reducing autonomy, especially when male partners use controlling behaviors to limit their partners' ability to make decisions about their healthcare. A third pathway posits that experiencing DV can lead to negative health outcomes through its negative impact on women's mental well-being. In general, women who experienced DV during pregnancy reported a lower utilization of health services, have a lower prospect of decision making power, decreased freedom of movement and increased economic dependency (31) as compared to women who did not experience IPV. Similarly, women who experienced DV during pregnancy were less likely to utilize timely ANC compared to those who did not experience it (32). This also holds true for utilization of ANC services. For example, according to a nationally representative survey conducted in India, pregnant women who had been physically abused were less likely to seek prenatal care, have a prenatal checkup performed at home by a health professional, have at least three prenatal visits and start care later in the pregnancy

(33). Similar evidence has been reported from studies in Ghana, Bangladesh, Kenya and Nigeria (34).

CONCLUSION

The study highlights that DV significantly hinders access to essential life-saving services (23). To address this critical issue, public health initiatives must prioritize early identification and intervention strategies (35). Integrating violence into community health packages and sexual and reproductive health education, alongside effective counseling and awareness campaigns, is vital for supporting victims and enhancing overall health outcomes (36). Healthcare workers play a key role in screening antenatal women for DV (37) making it essential to incorporate this practice into routine care (23). Additionally, educating younger generations on mutual respect and healthy relationships(38), as well as promoting male engagement during antenatal care, will foster a supportive environment for maternal health (39). Targeted interventions addressing substance use, empowering women in decision-making and improving access to education and healthcare are crucial for reducing DV risk during pregnancy (40).

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Declaration by Authors

Ethical Approval: This research is based on secondary and publicly available datasets. These datasets do not contain information that may be used to identify the respondents. Data may be downloaded from <https://dhsprogram.com/>. The IRBs of the International Institute for Population

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