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Original Research Article

Substance Abuse in India: Covariates of Gender Violence from Households' Responses before COVID-19 pandemic

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Abstract:

Background: The pandemic of COVID-19 has shaken the entire world, which resulted in many forms of health crisis in India, even after a virtual lockdown with social distancing and a complete ban on the sale of liquor. Evidence from earlier studies, as well as the recent news, confirm some parallel cases of gender violence across the globe, which have significant linkages with substance abuse.

Objectives: The paper targets to map the relationship between substance use and gender violence in the Indian context. This also attempts to identify the significant socio-economic determinants of gender violence in India.

Methods: The paper uses the latest National Family Health Survey-4 (2015-16) dataset by applying the two-way, three-ways cross-tabulation methods, Principal Component Analysis (PCA), Kernel density function, and three logistic regression models with the STATA-13 software. The dependent variables are the intensity of gender violence, and the control variables include socio-economic, demographic characteristics, substance use, empowerment dummy, wealth quintile and sources of entertainment, etc.

Results: The results of the cross-tabulations and regression models explain the objectives of the study in concordance with the literature. The socio-economic and demographic characteristics, substance use, the role of education, health infrastructure, and the empowerment of women are significant factors.

Conclusions: The paper goes with futuristic perspectives using the evidence from the past. Since the findings of the paper explain the role of several factors of gender violence and substance use, appropriate planning is essential in this direction to avoid further adverse impacts that emerged from the COVID19 pandemic.

Keywords: COVID-19, Substance Use, Gender Violence, Determinants, Empowerment.

Introduction

Today, no part of the world is free from the curse of substance abuse and drug addiction. Millions of drug addicts, all over the world, are leading miserable lives, between life and death. [1] India, according to the National Family Health Survey IV carried out in 29 states in 2015-2016, Forty-five percent of men and 7 percent of women age 15-49 use some form of tobacco. [2] Only 1 percent of women drink alcohol, compared with 29 percent of men.

Drinking alcohol is more common among women from scheduled tribes (7%) than from any other caste/tribe group. Drinking is most common among Christian men and men belonging to "other" religions (43% each), men with no schooling (40%), men from scheduled tribes (41%), and men age 35-49 (37%). [2] Women in India face greater problems from drug abuse. The consequences include domestic violence, the prevalence of spousal violence was reported 33.3%, same while Emotional violence, Physical violence, Sexual violence 13.8, 29.8, 6.6 % respectively. Thirty percent of women have experienced physical violence since age 15, and six percent have ever experienced sexual violence in their lifetime. Four percent of ever-pregnant women have experienced physical violence during any pregnancy. [2]

According to the World Report on Violence and Health, the factors associated with a woman's risk of being abused by her partner can be individual factors (young age, heavy drinking, depression, personality disorders, poor academic achievement, etc.), relationship factors (marital conflict, marital instability, male dominance, economic stress, etc.), community factors (weak community sanctions against domestic violence, poverty, low social capital), and societal factors (gender norms, and social norms supportive of violence). [3] Various

socioeconomic conditions In, viz., husband's lower education, poverty and economic pressure, household overcrowding, husband's alcohol abuse, and women who grew up witnessing violence in their homes, are more likely to report experiencing domestic violence. [4] Women who participate in social groups or vocational training are reported to be more at risk. Inconsistent associations of violence were found with other factors like age, place of residence (urban/rural), age at marriage, and duration of marriage. [4]

A study conducted across seven sites in India, viz., Bhopal, Chennai, Delhi, Lucknow, Nagpur, Thiruvananthapuram, and Vellore found that gender gap in employment status was a significant factor for violence. [5] According to an eye-opening United Nations report, around two-third of married women in India were victims of domestic violence and one incident of violence translated into women losing seven working days in the country. Furthermore, as many as 70% of married women between the ages of 15 and 49 years are victims of beating, rape or coerced sex. [6]

The common forms of violence against Indian women include female feticide (selective abortion based on the foetus gender or sex selection of child), domestic violence, dowry death or harassment, mental and physical torture, sexual trafficking, and public humiliation. The reproductive roles of women, such as their expected role of bearing children, the consequences of infertility, and the failure to produce a male child have been linked to wife-battering and female suicide. [7,8]

The consequences of gender-based violence are devastating including life-long emotional distress, mental health issues including posttraumatic stress disorder and poor reproductive health. Common mental health problems experienced by abused women include depression, anxiety, posttraumatic stress, insomnia, and alcohol use disorders, as well as a range of somatic and psychological complaints. Battered women are much more likely to require psychiatric treatment and are much more likely to attempt suicide than no battered women. [9] Significantly more major depression and anxiety disorders are found in females with alcoholism. Thus, the profile of women with substance use problems differs from that in male abusers. [10]

Women are more likely to attribute their drinking to a traumatic event or a stressor and women who abuse alcohol or drugs are more likely to have been sexually or physically abused than other women. [11] Interpersonal violence (IPV) against wives is highly prevalent among substance dependent men, more with alcohol dependence as compared to opioid dependence in India. Addressing IPV should be an integral part of substance abuse management. [12] The wives of alcoholics as a group had higher levels of conflict, perceived more danger and experienced more apprehension in relating with their spouses, than the subjects of the reference group. [13]

There is no single cause, only the accumulation of risk factors lead to gender violence in India.14Low maternal education and poverty have been implicated as other risk factors. [15,16] The amount of violence that exists in the mass media and its impact on viewers cannot be ignored. [17] The association between attitude towards spousal violence and regular exposure to mass media varies across different media forms. [18]

The threat of violence is often used as a means of redistributing resources. Economically motivated violence comes from the Indian subcontinent where numerous press reports indicate the widespread use of wife abuse as a means of extracting transfers from the wife's parents. Thus, "dowry" violence does not refer directly to marriage-related payments made at the time of the wedding, but to additional payments demanded after the marriage by the groom's family where the husband systematically abuses the wife in order to extract larger transfers. [19]

The ill-effects of abuse can be discussed under four broad categories, viz, effects physically related to abuse, gynaecological problems due to forced sexual intercourse, the psychological effects, and the effects of violence on pregnant women. [4]

As the Corona virus (Covid-19) global pandemic continues, communities are adopting dedicated measures to slow the spread of the virus. While actions such as encouraging individuals to adopt "social distancing", mandating restrictions at home may reduce the transmission of the infectious disease, unfortunately not all are finding safety in the resulting seclusion. Many family violence (domestic violence, child abuse, and pet abuse) victims may currently be facing a "worst case" scenario – finding them trapped in the home with a violent perpetrator during a time of severely limited contact with the outside world. [20]

Additionally, alcohol abuse, a commonly reported risk factor for family violence, has been linked to an accumulation of stressful events and a lack of social support (both likely occurring as a result of Covid-19). With bars and restaurants being limited to take-out service only in many communities, family violence perpetrators who abuse alcohol may be even more likely to do so in the home, likely increasing risk for the entire household. [21]

Smoking and associated respiratory disease may exacerbate COVID-19 severity. The pandemic may well increase the extent and severity of some

addictive disorders. Current research is suffering from the termination of face-to-face data collection and other restrictions.[22] There is an urgent need to mapping the burden and their mutual role play to mitigate these problems and to find innovative ways of continuing to provide clinical and public health services to help people in this public health crisis.

The paper strives to map the relationship between substance use and gender violence in the Indian context. Thisalso attempts to identify the significant determinants of gender violence in India.

Materials and Methods

Study Design: This is a cross-sectional study emphasizing the socio-economic and demographic cofactors influencing gender violence in India using the latest nationally representative dataset of Demographic Health Survey which is internationally known. The study identifies various forms and intensities of gender violence within the household. Therefore, household characteristics have been collected. By applying the most appropriate estimation technique, this suggests for policy especially during COVID-19.

Study population and Sampling: This study is based on NFHS-4, a nationally representative unit level primary survey data. The latest round of this survey NFHS-4 conducted in 2015-16 which covers 601509 households coupled with 699686 individual-level information. Nonetheless, this data incorporates the variable of interest of the paper (discussed in the variable description table 4). This paper filtered further information restricted to substance abuse, especially in the context of gender violence.

Data Description: This large scale survey data contains qualitative information on different forms of domestic violence and substance use in India and at the disaggregated level. For example, emotional violence includes instances of being humiliated, threatened or insulted by husband. Similarly, sexual violence includes instances of being physically forced into unwanted sex, forced into unwanted sexual acts, and physically forced to perform unwanted sexual acts. It also covers information on physical violence which includes instances such as those of being pushed, slapped, kicked, arm-twisted, punched, strangled or threatened with a weapon by the husband.

Base on the various forms of violence, we construct the variable as ‘any form of less severe’ and ‘severe’ violence’ for the regression estimation. The dependent variable as discussed in the table 4are binary.

Methodology

The analysis adopts two way and three-way cross tabulation methods to identify the relationships among the covariates in concordance with the literature. The study considers some proxy variables to measure the different qualitative indicators of domestic violence in India. These are described in the Table 4. The wealth quintiles have been calculated using Principal Component Analysis (PCA).

This study employs logistic regression models since the dependent variables are binary and the error distribution function is non-normal. The Kernel density function of the error term explains the choice of the models (Appendix figure 1). All the results are derived using STATA 13 software.

Mathematically, Logistic/logit Function can be expressed as:

$$P = \frac{1}{1 + e^{-Z}}$$

Where, P = probability of an outcome having 1 $Zi = \alpha + \beta X_i$

$$\frac{1}{P} = 1 + e^{-Z}$$

$$\frac{1 - P}{p} = e^{-Z}$$

$$\frac{P}{1 - P} = e^{Z}$$

Where, 1-p = the probability as 0. The ratio (p/1-p) is called the odds ratio

$$\ln\left(\frac{P}{1 - P}\right) = Z$$

$$\text{Or, } L = \alpha + \beta X + u$$

The equation shows the log of odds ratio is linear function of slope coefficients and explanatory variables, is known as Logit (log of odds ratio). The results in the table present the coefficients of logistic regression instead of odd ratio.

The models for this analysis are expressed in the equation form using our variables as:

Model i:

$$\begin{aligned} E(Li = 1) = \alpha &+ \beta_1 \text{Caste} + \beta_2 \text{Religion} \\ &+ \beta_3 \text{Age}_{\text{squared}} + \beta_4 \text{Members} \\ &+ \beta_5 \text{Birth}_{\text{order}} + \beta_6 \text{loc} \\ &+ \beta_7 \text{empowerment} \\ &+ \beta_8 \text{substance}_{\text{husband}} \\ &+ \beta_9 \text{substance}_{\text{wife}} \\ &+ \beta_{10} \text{Edn}_{\text{husband}} + \beta_{11} \text{edn}_{\text{wife}} \\ &+ \beta_{12} \text{Mobile} + \beta_{13} \text{TV} \\ &+ \beta_{14} \text{Wealth} + \beta_{15} \text{Occupation} \\ &+ \beta_{16} \text{Health}_{\text{infra}} + .. + e \end{aligned}$$

Where, Model i= model 1, 2, and 3, E = dependent variable (Violence type), α = constant, β's are coefficients of explanatory variables and e = error term.

Data Analysis

The paper also tests the multicollinearity using all the explanatory variables. The mean v.i.f. value is 1.95 which is much below the bachmark level (i.e. 10). Therefore, the models don't have the problems of multicollinearity. Further, the hettest (in STATA 13) also confirms having no heteroscedasticity in the models.

Socio-Economic and Demographic profile of gender Violence are explained in table 1, 2, 3, A1-A3.

Table 1: Indian Women experienced any forms of violence

	yes	yes with weight
Emotional	12.68	13.84
Less Severe	27.92	29.36
Severe	8.16	9.13
Sexual	6.62	6.96
Total Sample	66013	619062.96

Source: Authors' estimation using NFHS-4

Table 2: Drinking Alcohol habits and gender violence

	Less Severe		Se-vere		Sexual Vio-lence		Total	Weight Total
Drinks Alcohol	Yes	Weig ht	Yes	Weig ht	Yes	Weight		
partner drinks	45.98	50.08	16.13	19.51	12.43	13.97	20891	178929.9
Wife drinks	41.79	52.7	15.5	24	11.16	17.88	1936	8865.594
frequency of her drinking								
almost everyday	51.65	61.03	23.14	33.82	14.05	23.34	242	1473.732
about once a week	43.2	53.44	16.01	27.14	9.78	16.17	787	3357.726
less than once a week	37.93	49.04	13.01	17.79	11.58	17.31	907	4034.136

Source: Authors' estimation using NFHS-4

Table 3: Other forms of substance use

	Urban	Rural	Total Percent	Total Number
She Drinks Tadimadi	8.34	91.66	1.14	7986
She Drinks Country Liquor	10.65	89.35	0.48	3380
She Drinks Beer	34.92	65.08	0.61	4301
She Drinks Wine	32.69	67.31	0.37	2576
She Drinks Hard Liquor	25.57	74.43	0.11	747
She Drinks Others	10.6	89.4	0.22	1528
She Smokes Cigarette	41.23	58.77	0.34	2382
She Smokes Pipe	16.94	83.06	0.03	242
She Smokes Cigars	31.92	68.08	0.09	614
She Smokes Bidis	12.61	87.39	0.56	3948
She Smokes Others	17.93	82.07	0.84	5863
She Takes Hookah	15.62	84.38	0.24	1697
She Takes Khaini	17.96	82.04	2.13	14925
Chewing Tobacco	27.57	72.43	0.93	6479
Uses Snuff	24.38	75.63	0.11	800

Regression Results

The study employs the most fitted regression models to find the relevant determinants of gender violence in India. The control variables are social hierarchy, demographic features, and marital relationships, place of residence, empowerment dummy, substance use, education attainment, entertainment sources, wealth quintiles, occupation and state-specific health infrastructure.

The variable description table 4 clarifies further.

Table 4: Variable Description as used in the Regression Models

Variables	Codes	Type	Exp Sign
Dependent Variable			
Less Severe Violence	0=no 1=yes	Binary	
Severe Violence	0=no 1=yes	Binary	
Physical Violence	0=no 1=yes	Binary	
Independent Variables			
Social Hierarchy			
Caste	1=SC, 2=ST, 3=OBC, 4=Gen	Categorical	-
Religion	1=Hindu, 2=Muslim, 3=Christian, 4=Sikh, 5=Buddhist, 6=Jain, 7=others	Categorical	-/+
Demographic Features			
Age Squared	15 to 49	Continuous	+
Members Of Household	1 to 41	Continuous	-/+
Birth Order	01 to 17	Continuous	
Marital Relationship			
Place Of Residence			
Location Dummy	1=urban 2=rural	Binary	-
Empowerment Dummy Community Health Insurance0=No 1=Yes		Binary	-
Substance Use			
Husband Drinks Alcohol	0=no 1=yes	Binary	+
She Drinks Alcohol	0=no 1=yes	Binary	+
Education			
Husband	1 to 20 years	Continuous	-
Wife	1 to 20 years	Continuous	-
Entertainment Sources			
Mobile Use	0=no 1=yes	Binary	-/+
Frequency Of Watching TV	0=not at all 1=less than once a week 2=at least once 3=everyday	Ordinal	-/+
Asset Information			
Wealth Quintiles	1=poorest 2=poorer 3=middle 4=richer 5=richest	Ordinal	-
Occupation			
Both Working	0=no 1= yes	Binary	+
Health Infrastructure			
States by SDGs	1: aspirant 2: performer 3: front runner	Ordinal	-

Source: Authors' estimation using NFHS-4

The existing literature maps various relationships between the dependent and independent variables.

So far as the social hierarchy is concerned in Indian context, this is one of the important predictor of gender violence in India. These control variables have been chosen to analysis the concerns of Indian society when there is complete lockdown as evidenced in the present pandemic. Our focus here is to find if the persons stay within four walls or completely lockdown, how she is prone to further domestic violence given the factors like social hierarchy, within family relationships, their usual working habits, place of stay, level of income as proxied by wealth quintiles, substance use, etc.

The link as derived from the literature is also primarily validated through our regression models.

Table 5: Logistic Regression of Determinants of Gender Violence

Dependent Variable→	Model 1: Less severe Violence		Model 2: Severe Violence		Model 3: Sexual Violence	
Independent Variables	β	S.E.	β	S.E.	β	S.E.
Social Hierarchy						
St @Sc	-0.416***	0.053	-0.387***	0.075	-0.336***	0.083
Obc @Sc	-0.084**	0.043	-0.142***	0.060	-0.163***	0.067
General @SC	-0.241***	0.057	-0.289***	0.086	-0.244***	0.094
Muslim @Hindu	0.164***	0.069	0.479***	0.098	0.549***	0.102
Christian @Hindu	-0.242***	0.065	-0.260***	0.104	-0.055	0.106
Sikh @Hindu	0.107	0.150	-0.435**	0.247	0.102	0.239

Buddhist @Hindu	-0.580***	0.134	-0.543***	0.220	-0.545**	0.255
Jain @Hindu	0.139	0.583			0.173	1.039
Others @Hindu	-0.157	0.119	0.003	0.170	0.134	0.176
Demographic Features						
Age_Squard	0.000***	0.000	0.000	0.000	0.000***	0.000
Household Members	-0.008	0.009	-0.017	0.013	0.027**	0.013
Bird Order	0.057***	0.013	0.024	0.018	0.013	0.020
Place Of Residence @ Urban						
Rural_Dummy	-0.144***	0.044	-0.163***	0.065	-0.112	0.071
Empowerment Dummy						
Community Health Insurance	-1.800**	1.054	-0.303	1.058		
Substance Use						
Husband_Liquor	1.201***	0.033	1.310***	0.050	1.073***	0.054
Wife_Liquor	0.079	0.075	0.193**	0.095	0.047	0.110
Education						
Husband_Education	-0.003	0.002	-0.021***	0.005	-0.016***	0.005
Wife_Education	-0.029***	0.004	-0.043***	0.007	-0.023***	0.008
Entertainment Sources						
Entertainment_Mobile	-0.113***	0.037	-0.021	0.054	0.097*	0.059
Television_Frequency	0.029**	0.016	0.060***	0.023	0.026	0.025
Asset Information						
Wealth_Poorer @Poorest	-0.150***	0.046	-0.248***	0.065	-0.178***	0.073
Wealth_Middle @Poorest	-0.296***	0.056	-0.293***	0.080	-0.128	0.088
Wealth_Richer @Poorest	-0.403***	0.066	-0.577***	0.099	-0.323***	0.109
Wealth_Richest @Poorest	-0.850***	0.088	-0.953***	0.145	-0.516***	0.148
Both_Working	0.308***	0.066	0.303***	0.106	0.127	0.106
Health Infrastructure @Aspirant States						
States_Performer	-0.151***	0.046	-0.406***	0.066	-0.198***	0.071
States_Frontrunner	-0.123***	0.050	0.015	0.071	-0.246***	0.080
Constant	-0.594***	0.110	-1.961***	0.165	-2.186***	0.174
	Number of obs = 19955 LR chi2(27)= 2535.94 Prob > chi2=0.0000 Log likelihood = -11758.396 Pseudo R2=0.0973		Number of obs = 19936 LR chi2(26) = 1497.97 Prob > chi2= 0.0000 Log likelihood = -6505.4003 Pseudo R2=0.1032		Number of obs = 19940 LR chi2(26)=705.55 Prob > chi2=0.0000 Log likelihood= -5690.0045 Pseudo R2=0.0584	

Source: Authors' estimation using NFHS-4 data, Note: * p<.10; ** p<.05; *** p<.01. @ is the base category

Discussion

This paper presents an account of the extent and determinants of gender violence in India with an adverse anticidents of COVID-19 pandemic. The analysis conducted using two-way and three-way cross-tabulation and three logistic regression models utilising the latest secondary data available with NFHS – 4 (2015-16).

The results are suggestive of certain factors where policy interventions may bring some improvements, while some other factors are driven by socio-economic and religious beliefs and understanding which are difficult to alter at least within a foreseeable future, hence relevant in the context of COVID-19. Educational intervention may improve the cases, but no policies can effectively control the wrong belief and customs. Entertainment sources is expected to be the factor in reducing the cases of gender violence. However, there are mixed literature on this aspect. Factors that were found to influence gender violence were mobile use, TV viewing, economic condition and location. Overall economic and social development

may gradually improve women's perceived status in the minds of the people to induce the concept that women deserve a better treatment. Similarly, our regression results identify other factors influencing gender violence such as women empowerment, family structure, health infrastructure development etc.

Limitations

The analysis restricts to the data envisaged in NFHS-4 survey since no Covid-19 related data is yet available. This survey does not capture panel information and so tracking a household over time is difficult. Also, previous rounds don't give information on residential districts.

Conclusion

It is also interesting to note that under the influence of alcohol, men target primarily their wives. This reflects on an inherent social understanding of women as being subjected to the property of men, and are always at their disposal. This is yet another factor which requires a social revolution to bring in effective changes.

The above discussion primarily points towards a skewed social construct which further fuelled by structural deficiencies like low education and income, prepare a fertile ground for domestic violence on women in India. But given that the most dominant influence is of socio-cultural construction which are more structural in nature and cannot be changed within a short period of time, improving the condition of women would require immediate preventive interventions through awareness generation and social connect.

The connection between alcoholism and gender is also difficult to counter. Though Gujrat, Bihar, Nagaland, Lakshwadeep and Kerala are a few states in India that have implemented total to partial ban of alcohol production, sale and consumption, it is not possible to achieve the same across the country for political as well as economic reasons.

This is, nonetheless, true in the present lockdown due to COVID-19. Systematic planning of resourse allocation and management would contain the adverse impact of substance use on gender violence in India.

Appendices

Table A1: women age group and violence

			less severe		severe		emo-tional		sexual	
			without weight	with weight	without weight	with weight	without weight	with weight	without weight	with weight
	husband alcoholic	she drinks alcohol								
15-19	1.9	7.1	1.79	2.17	1.45	1.9	2.35	3.22	2.45	2.88
20-24	11.6	12.4	12.44	12.83	10.55	10.65	11.97	12.67	13.84	14
25-29	21.09	15.73	20.45	19.11	20.24	18.77	20.31	18.59	21.29	20.25
30-34	21.51	15.6	21.61	18.66	22.17	18.81	20.78	17.73	21.57	18.34
35-39	17.87	17.35	17.67	17.42	17.69	17.96	17.87	17.48	17.13	16.71
40-44	13.99	15.35	13.59	15.41	14.54	16.23	13.87	15.16	12.83	14.31
45-49	12.04	16.46	12.45	14.4	13.37	15.68	12.85	15.15	10.89	13.51
Total	20891	17305	18,434	##### ###	5,386	56,543 .03	8,372	85,652 .19	4,372	43,094. 39

Source: Authors' estimation using NFHS-4

Table A2: social hierarchy, alcohol consumption and violence

	husband alcoholic	Wife is alcoholic	any less severe violence	severe violence	emotional violence	sexual violence
SC	4,463	1,331	4,071	1,365	1,843	1,040
	38.19	1.07	34.84	11.68	15.77	8.9
ST	5,389	12,049	3,361	1,005	1,549	824
	44.51	9.48	27.76	8.3	12.79	6.81
OBC	7,409	2,397	7,701	2,173	3,390	1,714
	28.97	0.88	30.11	8.5	13.26	6.7
Gen	3,274	1,226	2,714	667	1,192	624
	24.34	0.87	20.18	4.96	8.86	4.64

Table A3: education and violence

	Partner Drinks				She Drinks			
	Less Severe		Severe		Less Severe		Severe	
Husband Education	no	yes	no	yes	no	yes	no	yes
No Education	43.66	56.34	76.8	23.2	49.66	50.34	79.78	20.22
Primary	48.02	51.98	80.27	19.73	57.91	42.09	84.99	15.01
Secondary	58.52	41.48	86.9	13.1	65.09	34.91	87.62	12.38
Higher	69.18	30.82	93.52	6.48	71.82	28.18	93.64	6.36
Her Education								
No Education	44.35	55.65	78.17	21.83	50.86	49.14	79.92	20.08
Primary	51.4	48.6	82.27	17.73	62.24	37.76	87.41	12.59
Secondary	61.62	38.38	88.52	11.48	69.14	30.86	90.1	9.9
Higher	72.75	27.25	94	6	69.01	30.99	98.59	1.41
Religion And Violence								
Hindu	51.91	48.09	51.91	48.09	51.27	48.73	82.12	17.88
Muslim	46.83	53.17	46.83	53.17	61.54	38.46	84.62	15.38
Christian	65.42	34.58	65.42	34.58	66.67	33.33	88	12
Sikh	68.87	31.13	68.87	31.13	100		100	
Buddhist	77.45	22.55	77.45	22.55	88.3	11.7	95.74	4.26
Jain	60	40	60	40				
Others	55.33	44.67	55.33	44.67	59.33	40.67	83.25	16.75
Wealth And Violence								
Poorest	42.21	57.79	77.32	22.68	47.08	52.92	81.14	18.86
Poorer	49.69	50.31	81.96	18.04	56.79	43.21	84.62	15.38
Middle	56.08	43.92	84.35	15.65	71.79	28.21	85.58	14.42
Richer	60.61	39.39	88.49	11.51	72.87	27.13	89.92	10.08
richest	72.5	27.5	92.99	7.01	75.79	24.21	94.74	5.26

Source: Authors' estimation using NFHS-4

Table A4: Summary Statistics of the Regression models

Variables	Mean	S.D.	Min	Max
ST	0.090	0.287	0	1
OBC	0.261	0.439	0	1
General	0.381	0.486	0	1
Muslim	0.157	0.364	0	1
Christian	0.061	0.239	0	1
Sikh	0.098	0.297	0	1
Buddhist	0.012	0.109	0	1
Jain	0.019	0.135	0	1
Others	0.001	0.031	0	1
age_squard	0.018	0.133	0	1
Household Members	1277.910	531.011	256	2401
Bird Order	5.009	2.037	1	39
Location_dummy	2.889	1.547	1	14
Empowerment_dummy	0.774	0.418	0	1
Husband_liquor	0.000	0.000	0	1
Wife_liquor	0.403	0.491	0	1
Husband_education	0.046	0.210	0	1
wife_education	6.794	7.314	0	98
Entertainment_mobile	4.861	5.154	0	20
Television_frequency	0.439	0.496	0	1
Wealth_poorer	1.819	1.308	0	3
Wealth_Middle	0.246	0.431	0	1
Wealth_Richer	0.210	0.407	0	1
Wealth_Richest	0.168	0.374	0	1
Both_working	0.116	0.320	0	1
States_Performer	0.926	0.262	0	1
States_Frontrunner	0.452	0.498	0	1
constant	0.360	0.480	0	1

Source: Authors' estimation using NFHS-4

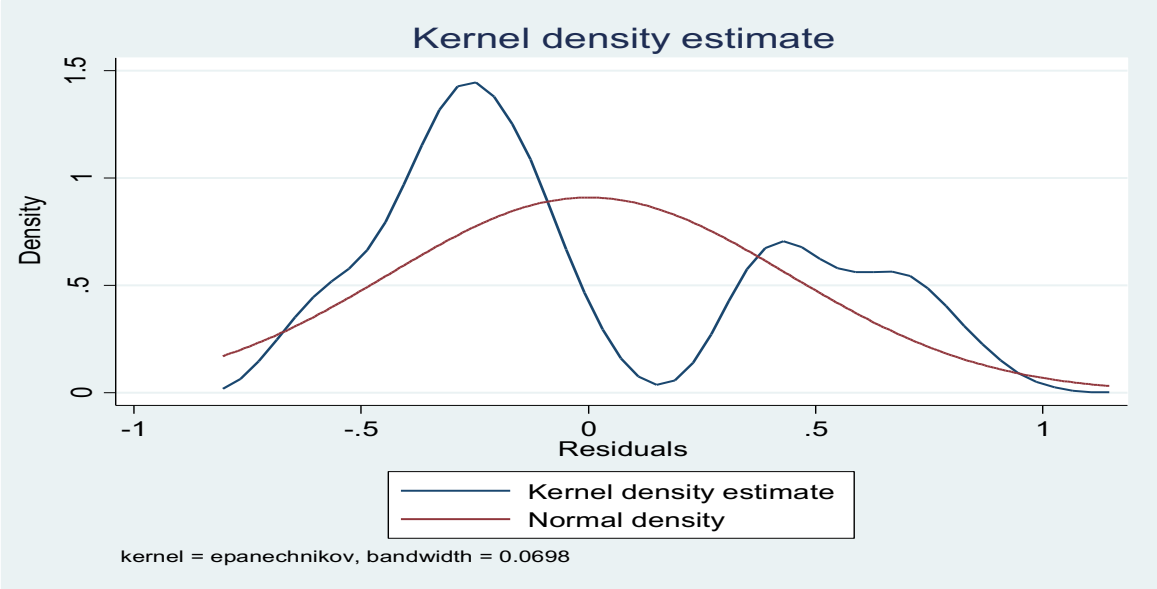

Figure 1: Kernel Density Function of the Error Distribution

Source: Authors' estimation using NFHS-4

Declaration

Ethical clearance: The ethical clearance was taken by the DHS while doing the survey and since the survey raw data is available in the public domain for the individual researchers, no ethical clearance is needed.

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