

## Original Research Article

# Inequalities in women's empowerment and prevalence of HIV in India

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## ABSTRACT

**Background:** Over the years, there has been growing evidence of continuous narrowing gender gap in new HIV infections, despite stagnation in overall HIV prevalence in India. Among others, one of the reasons behind the exiting pattern in HIV/AIDS in the country is the poor status of women, lack of control over their sexuality and poor reproductive and sexual rights.

**Methods:** This paper analyses the troika of women's empowerment, spousal-violence, and HIV prevalence in India using data from two rounds (2005-2006 and 2015-2016) of Indian DHS having a community-based HIV testing.

**Results:** Results corroborate the recent spurts in women's empowerment in India, which cuts across socio-economic groups. It has positively influenced a decline in spousal-violence even in the lowest socio-economic strata despite significant inequality across states. HIV prevalence among women has not been changed over the last decade (0.22% to 0.23%) despite decreased adult HIV prevalence. Women having control over their sexuality is significantly less likely to have HIV infection. Relationship between marital control behavior of husband and HIV prevalence, which was significant in 2005-06 (OR=1.2,  $p<0.10$ ), has emerged to be insignificant in 2015-16. This means that increasing women's empowerment has altered their HIV prevalence through increasing sexual-rights and reducing the intensity of marital control behavior.

**Conclusions:** A combative relationship has been established between women's empowerment and their risk of HIV/AIDS. The results have been consistently showing the variations of inequality in women's empowerment across different states, consequently affecting the risk of HIV/AIDS. Ensuring sexual-rights of women should be the best strategy.

**Keywords:** Empowerment, Inequality, HIV prevalence, Marital control, Sexual rights, Violence

## INTRODUCTION

Women's empowerment means the emancipation of women from the vicious grip of socio-economic, political, religious, and gender-based discrimination, which may be possible by replacing patriarchy by parity. The empowerment of women is the best strategy and the most effective tool to ensure their health and wellbeing, which is essential to achieve the Sustainable Development Goals.<sup>1,2</sup>

India is not only known for its cultural heritage, traditions, civilization, religion, and geographical features but as a male chauvinistic nation too.<sup>3</sup> Women in India remained weaker sex for a long time, where they were dependent on their counterparts. After a protracted struggle, women have achieved property rights, voting rights, equality in civil rights before the law in matters of marriage, and employment.<sup>3</sup> Though women in India have made considerable progress after seven decades of Independence, however, they still have to struggle against

many handicaps and social evils, which inhibit the advancement and social upliftment of women folk.<sup>4</sup>

Over the years, there have been various programs related to women's empowerment, such as the 'National Mission for Empowerment of Women' by the Ministry of Women and Child Development, which provided autonomy to women in India. Such programs have helped empower women in India and increased their participation in education, sports, politics, media, art and culture, the service sector, and science and technology.<sup>5</sup> Though the position of women has improved, there is enormous inequality in their empowerment, with tremendous spatial variability in addition to their caste, class and ethnicity.

Despite increasing empowerment, women in India are relatively more vulnerable to HIV as they are not only distanced from socio-economic opportunities but are also denied access to health care services in many parts of the country.<sup>6</sup> The HIV vulnerability of women can be attributed to the socio-economic and cultural context, which have increased the number of women suffering from STI/HIV. According to NACO, HIV prevalence among adults (15-49 years) was 0.26 percent (0.30% males and 0.22% females) in 2015, which has come down from 0.40 percent among males and 0.26 percent among females in 2007. This confirms a decline in the prevalence of HIV nationally; however, there is anarrowing gender gap in the prevalence of HIV, showing a slower pace of decline among females. Data also reveals that women continue to account for more than 40 percent of people living with HIV infection in the country.<sup>7</sup> According to the World Bank report on AIDS, extensive poverty and unequal distribution of income among the genders appears to stimulate the spread of HIV.<sup>8</sup>

Further, the Fourth World Conference on Women mentioned that women in developing countries are uneducated and living in acute poverty, which makes them vulnerable to STI/HIV and making it crucial to achieve the Sustainable Development Goals and end AIDS by 2030.<sup>9,10</sup> The main objective of this paper is to analyze the inequalities in women's empowerment, their HIV vulnerability, and prevalence of HIV, especially in the context of the changing prevalence of HIV in the country with the dichotomy of matured epidemics and emerging epidemics in different regions of the country with a focus on the continuously narrowing gender gap.

## METHODS

### *Study design*

Data used in this paper has been taken from two rounds of National Family Health Survey (NFHS-3 and 4), an Indian variant of Demographic and Health Survey (DHS) conducted in 2005-2006 and 2015-2016. The IIPS conducted NFHS data (Mumbai), with support from the Ministry of Health and Family Welfare (MoHFW),

Government of India, and ICF International Inc. NFHS is a nationally representative, large scale, a repeated cross-sectional survey in representative samples of households throughout India. NFHS provides essential aspects of maternal, child, adolescent, and adult health indicators. Details about the NFHS-3 and NFHS-4 sampling designs, tools, and protocols presented in the national reports of NFHS-4 and all relevant information is available in the public domain on <http://rchiips.org/NFHS.shtml>.<sup>11</sup>

The information on different dimensions of inequalities in women's empowerment has been collected from a sub-sample of women aged 15-49 years surveyed across States/UTs. The information on HIV prevalence has been generated using the Dried Blood Sample (DBS) Spot test from women aged 15-49 years and men aged 15-54 years from the subsample of households in NFHS-3 (2005-06) and households included in the state module in NFHS-4 (2015-16).

Women's vulnerability to HIV has been assessed through comprehensive knowledge about HIV AIDS and the experience of sexual violence. Additionally, community-based testing of HIV using the DBS approach has been considered as the response variable, where HIV status has been decided by using Eliza 1 and 2 along with the Western Block as the confirmatory test on each HIV positive case. NFHS-4 has assessed women's empowerment by measuring five indicators, namely, ownership of household assets, women's participation in household decision-making, operating a bank account in their name, owning a mobile which they can use on their own and experience of spousal violence. The decision-making power of women in the household consists of their participation in three primary decisions: woman's health care, major household purchases, and visits to the woman's family or relatives. Control over their sexuality is a marker of sexual rights of women and is assessed through their perceived capacity to refuse sex with a husband under different situations.

### *Ethical approval*

The present analysis utilizes secondary data available on [https://dhsprogram.com/data/dataset/India\\_Standard-DHS\\_2015.cfm?flag=1](https://dhsprogram.com/data/dataset/India_Standard-DHS_2015.cfm?flag=1) with no identifiable information on the survey participants. The entire survey tools and protocols of NFHS were as approved by the Institutional Ethical Review Board of IIPS, Mumbai.

### *Statistical analysis*

The inequality in the woman's status has been quantified by using Lieberman's Diversity Index. Dimensions of woman's empowerment and their vulnerability to HIV/AIDS are analyzed with respect to a comprehensive knowledge of HIV/AIDS. The index which defines the homogeneity and heterogeneity across different states in India is explained as follows: If  $C_i$  ( $i=1,2,3,\dots,n$ ) denotes the proportion of individuals in the  $i$ th subclass such that

$\sum C_i=1$ , then Lieberman's index of diversity (D) is defined as

$$D = 1 - \sum_{i=1}^n C_i^2$$

Theoretically, the diversity index varies from 0 to 1. Zero in case of perfect homogeneity when the inequality is almost nil and one in case of perfect heterogeneity, a situation where there is maximum inequality. Additionally, a binary logistic regression was performed to analyze the adjusted effect of various determinants of HIV prevalence among women age 15-49 years.

## RESULTS

### *Inequality in women's empowerment in India*

Table 1 presents the percentage of women who are empowered in different dimensions according to some selected socio-demographic characteristics. Almost two-fifths of women aged 15-49 years (37%) own a house alone or jointly with other household members. The

recent swing in women's empowerment in India is evident by property ownership where a relatively larger proportion of women with no schooling (44%) and belonging to the lowest wealth quintiles (43%) have reported owning a house. It is observed that around 46 percent of women reported owning a mobile phone that they can use themselves, and 53 percent of women said operating a bank account. Ownership of a mobile phone is found increasing sharply with higher wealth quintiles and educational attainment of women. Overall, 63 percent of women reported that they participated in all three decisions. The result shows that around 29 percent of ever-married women have ever experienced spousal violence. Women's experience of spousal violence declines sharply with women's schooling and wealth quintile. The proportion of women who reported ever to experience spousal violence declines from 38 percent among illiterate women to 15 percent among those who have completed 12 or more years of schooling. Similarly, the experience of spousal violence ranges from 42 percent among women in the lowest wealth quintile to 16 percent among women in the highest wealth quintile.

**Table 1: Percentage of women having different dimensions of woman's empowerment according to some selected socio-demographic characteristics.**

Background characteristics	Owning house	Bank Account	Mobile use	HH Decision- making	Spousal violence
<b>Years of schooling</b>					
No schooling	44.4	43.2	25.4	60.2	38.0
<5 years	39.3	43.0	32.0	63.8	35.0
5-7 years	36.5	45.5	41.0	61.3	30.2
8-9 years	33.4	49.2	42.6	63.2	25.9
10-11 years	34.1	56.8	52.9	63.5	20.5
12 or more years	33.2	72.3	74.7	68.5	15.3
<b>Religion</b>					
Hindu	37.8	54.0	45.5	63.0	30.0
Muslim	34.1	44.5	43.8	60.4	24.7
Christian	38.9	66.9	63.4	71.0	24.6
Sikh	30.2	59.5	54.9	67.4	18.7
Buddhist/Neo-buddhist	27.6	55.6	49.0	72.9	18.9
Jain	37.4	69.7	72.1	71.1	10.9
Other	45.8	34.6	33.3	75.5	38.2
<b>Caste/tribe</b>					
Scheduled caste	36.8	54.4	38.3	63.6	35.8
Scheduled tribe	40.2	44.5	30.8	63.6	29.6
Other backward class	38.0	53.6	45.9	61.4	30.9
Other	35.1	54.2	56.5	65.0	20.1
Don't know	29.4	38.0	38.1	60.4	26.5
<b>Wealth index</b>					
Lowest	43.1	34.1	21.7	59.7	42.2
Second	38.9	43.8	29.5	60.7	34.7
Middle	36.4	53.0	40.0	61.3	29.4
Fourth	34.7	54.2	54.4	64.2	24.1
Highest	34.5	38.0	74.0	67.9	16.0
<b>Total</b>	<b>37.1</b>	<b>53.0</b>	<b>45.9</b>	<b>63.0</b>	<b>28.8</b>

**Table 2: Inequalities in women's empowerment and comprehensive knowledge of HIV/AIDS across different states in India.**

States	Comprehensive knowledge	Owning house	Owning a bank account	Owning mobile	Violence	Household decision making
Andhra Pradesh	29.0	0.915	0.922	0.922	0.908	0.920
Arunachal Pradesh	16.0	0.921	0.932	0.928	0.930	0.934
Assam	9.4	0.954	0.962	0.962	0.947	0.960
Bihar	10.1	0.972	0.969	0.972	0.969	0.971
Chhattisgarh	20.7	0.931	0.937	0.928	0.936	0.935
Goa	34.6	0.377	0.499	0.497	0.496	0.495
Gujarat	18.4	0.930	0.961	0.960	0.939	0.960
Haryana	31.1	0.946	0.948	0.952	0.940	0.950
Himachal Pradesh	30.9	0.903	0.915	0.916	0.898	0.915
Jammu and Kashmir	19.0	0.917	0.952	0.954	0.937	0.950
Jharkhand	15.8	0.949	0.949	0.948	0.947	0.948
Karnataka	9.5	0.964	0.965	0.962	0.960	0.963
Kerala	43.1	0.914	0.927	0.927	0.898	0.925
Madhya Pradesh	18.1	0.976	0.975	0.973	0.976	0.975
Maharashtra	30.0	0.967	0.969	0.969	0.961	0.970
Manipur	40.7	0.877	0.867	0.866	0.903	0.865
Meghalaya	13.3	0.822	0.840	0.835	0.694	0.842
Mizoram	66.4	0.836	0.860	0.862	0.801	0.863
Nagaland	12.2	0.869	0.861	0.883	0.772	0.884
Odisha	20.3	0.964	0.963	0.957	0.959	0.962
Punjab	49.3	0.921	0.949	0.949	0.932	0.949
Rajasthan	19.1	0.947	0.965	0.962	0.944	0.965
Sikkim	25.5	0.649	0.660	0.670	0.625	0.672
Tamil Nadu	16.0	0.964	0.968	0.968	0.971	0.967
Telangana	29.5	0.885	0.897	0.892	0.866	0.892
Tripura	28.0	0.697	0.692	0.660	0.749	0.697
Uttarakhand	28.6	0.904	0.916	0.915	0.864	0.911
Uttar Pradesh	17.5	0.982	0.984	0.983	0.984	0.984
West Bengal	18.6	0.936	0.945	0.944	0.941	0.946

Results reveal high inequality in women empowerment and comprehensive knowledge of HIV/AIDS among different states in India (Table 2). Instead, comprehensive knowledge of HIV/AIDS is not influenced by inequality in women's empowerment. Inequality in women empowerment measured in terms of ownership of the house alone or jointly is not uniformly distributed and varies from 0.38 to 0.98 across different states. In Goa, the inequality is low (0.38), but comprehensive knowledge is relatively high (35%). In contrast, despite higher level of inequality in the ownership of a house in Uttar-Pradesh and Madhya-Pradesh (0.98 in each), the comprehensive knowledge of HIV is as low as 18 percent in both the states. There seems to be a curvilinear relationship between inequality in the ownership of a house and comprehensive knowledge of HIV/AIDS as states like Punjab, Mizoram, and Kerala, have higher levels of comprehensive knowledge of HIV/AIDS despite higher inequalities in women's empowerment. Inequality in terms of women operating a savings bank account and owning mobile phones is higher (above 0.7). It varies

across different states, except for the states of Goa, Sikkim, and Tripura. Data shows that the comprehensive knowledge of HIV/AIDS varies at both ends of inequalities in women experiencing spousal violence to a large extent. In Karnataka, inequality is more in the context of women experiencing spousal violence, and the comprehensive knowledge of HIV/AIDS is also low (9.5%). On the contrary, Goa has a lower inequality in spousal violence but a relatively higher prevalence of comprehensive knowledge of HIV/AIDS. Overall, it was found that the different dimensions of women's empowerment do not have a linear relationship with the comprehensive knowledge of HIV/AIDS. A combined effect of inequalities in each of the five dimensions of empowerment on comprehensive knowledge of HIV/AIDS has also been examined through a multiple linear regression equation, specifying non-significant relation between inequalities in different dimensions of woman's empowerment (X1 to X5) and their HIV vulnerability measured in terms of comprehensive knowledge of HIV/AIDS (Y).

$$Y = 89.3 + 200.3X_1 + 296.5X_2 + 399.6X_3 + 77.4X_4 - 1043.3X_5$$

This shows that there is no significant relationship between inequalities in different dimensions of women's empowerment and comprehensive knowledge of HIV/AIDS. Though the value of unadjusted R square is 44 percent, the value of the adjusted R square reduces to 13.4 percent with a standard error of 8.6. That means that the recent upswing in women's empowerment in terms of dimensions included in the analysis do not have the potential to reduce the inequalities in women's vulnerability to HIV/AIDS measured in terms of comprehensive knowledge of HIV/AIDS in most of the Indian states. HIV vulnerability. Table 3 presents the changes in a comprehensive knowledge of HIV/AIDS and

consistent condom use over the decade according to some selected background characteristics. Overall, there is an increasing trend in the awareness level of women regarding condom use as a protection against HIV/AIDS and comprehensive knowledge of HIV/AIDS. However, the progress among women aged 15-49 years have not been very impressive (17% in 2005-06 to 21% in 2015-16). As expected, comprehensive knowledge about HIV/AIDS increases with increasing years of schooling as well as wealth quintiles in NFHS-3 and NFHS-4. However, the proportion of women aged 15-49 years with a comprehensive knowledge of HIV/AIDS over the last decade has declined among higher levels of schooling (10 and more years) and the highest wealth quintile.

**Table 3: Variation in the prevalence of comprehensive knowledge of HIV/AIDS and knowledge that consistent condom use can protect from HIV/AIDS among women aged 15-49 years by different socio-demographic characteristics from 2005-06 to 2015-16.**

Background characteristics	Comprehensive knowledge of HIV/AIDS		Women who knows that consistent condom use as a prevention of HIV/AIDS	
	NFHS_3	NFHS_4	NFHS_3	NFHS_4
<b>Years of schooling</b>				
No schooling	3.1	8.1	11.9	31.8
<5 years complete	6.2	12.7	23.7	42.1
5-7 years complete	13.0	16.2	36.3	49.7
8-9 years complete	23.3	19.6	52.9	56.8
10-11 years complete	36.0	26.6	67.2	67.0
12 or more years complete	55.1	38.5	81.2	79.4
<b>Religion</b>				
Hindu	17.2	20.4	36.2	54.2
Muslim	14.1	19.0	31.0	53.1
Christian	26.0	29.6	50.9	65.0
Sikh	25.9	47.0	56.3	86.1
Buddhist/Neo-Buddhist	22.4	32.2	43.3	73.2
Jain	57.8	34.8	77.0	73.6
Other	6.9	19.8	15.5	44.5
<b>Caste/tribe</b>				
Scheduled caste	12.7	18.6	30.1	52.8
Scheduled tribe	8.1	14.3	19.3	43.3
Other backward class	14.7	19.5	33.1	52.8
Other	25.4	27.4	48.1	64.2
Don't know	7.3	10.4	22.2	29.2
<b>Wealth index</b>				
Lowest	2.5	7.6	9.1	29.1
Second	5.2	12.0	16.8	41.4
Middle	10.6	18.2	30.0	53.0
Fourth	21.4	25.1	47.1	65.0
Highest	41.4	36.4	69.5	76.6
<b>Marital status</b>				
Never married	25.8	23.4	46.1	56.1
Currently married	15.4	20.4	34.2	54.9
Widowed, divorced, separated, or deserted	7.1	16.4	35.0	48.8
Total (N)114,288	17.3	20.9	36.3	54.9



**Table 4: Percentage of ever married women aged 15-49 years, who have ever suffered physical or sexual violence committed by their husband, according to his characteristics, marital characteristics and selected empowerment indicators.**

Background characteristics	Sexual violence		Physical or sexual violence	
	NFHS-3	NFHS-4	NFHS-3	NFHS-4
<b>Number of reasons given for refusing to have sexual intercourse with husband*</b>				
0	7.2	7.1	32.4	28.4
1-2	12.0	8.0	41.2	35.0
3	9.9	5.9	36.8	27.3
<b>Number of decisions in which women participate**</b>				
0	11.6	8.7	36.1	31.9
1-2	11.0	8.6	38.3	34.5
3-4	8.4	4.7	36.1	25.3
<b>Number of marital control behaviors displayed by husband***</b>				
0	5.0	2.0	25.6	16.3
1-2	12.7	7.0	46.8	34.6
3-4	23.2	14.6	63.0	51.1
5-6	39.1	30.3	80.9	66.3
<b>Number of reasons for which wife-beating is justified****</b>				
0	8.4	4.1	30.4	19.8
1-2	10.5	6.9	41.0	33.5
3-4	11.6	8.9	44.0	40.9
5-6	11.8	10.3	42.7	39.9
7	11.9	11.5	42.8	38.3
<b>Spousal age difference</b>				
Wife older	8.0	7.4	36.9	27.5
Wife is same age	8.4	6.1	33.6	24.0
Wife 1-4 years younger	9.7	6.2	36.7	29.0
Wife 5-9 years younger	10.1	5.7	36.5	28.0
Wife 10+ years younger	9.2	6.3	37.1	26.6
<b>Spousal Education Difference</b>				
Husband better educated	9.7	6.1	36.4	29.0
Wife better educated	9.0	6.0	31.9	25.4
Both equally educated	6.0	4.7	23.3	20.1
Neither educated	12.8	9.2	47.8	40.7
Don't know/missing	15.0	13.7	39.5	35.6
<b>Husband's alcohol consumption</b>				
Does not drink	7.9	3.8	30.3	20.5
Drinks/never gets drunk	15.0	4.6	47.3	28.7
Gets drunk sometimes	11.6	9.7	48.5	43.7
Gets drunk very often	23.6	24.8	68.6	66.4
<b>India</b>	10.0	6.4	37.2	28.6

Note:\*\* Number of decision in which women participate 1) Decision about how your husband's earning will be used. 2) Decision about health care for yourself. 3) Decision about making major household Purchases. 4) Decision about visits to your family or relatives

\*\*\* Marital control behaviour including percentage of women whose husband 1. is jealous or angry if she talks to other men, 2. Frequency accuses her of being unfaithful, 3. Does not permit to meet her female friends, 4. Tries to limit her contact with her family, 5. Insists on knowing where she is at all times, 6. Does not trust her with any money

\*\*\*\* Number of reasons for which wife beating is justified. 1) If she goes out without telling him. 2) If she neglect the house or the children. 3) If she argues with him. 4. If she refuse to have sex with him. 5) If she doesn't cook food properly. 6) If he suspects her of being unfaithful. 7) If she shows disrespect for in-laws

**Table 5: Percentage HIV positive among women aged 15-49 that were tested, by socio-demographic characteristics, sexual rights and women's empowerment India, 2005-06 to 2015-16.**

Background characteristics	Percentage HIV positive	Percentage HIV positive
	NFHS-3	NFHS-4
<b>Years of schooling</b>		
No schooling	0.27	0.21
<5 years	0.49	0.38
5-7 years	0.20	0.29
8-9 years	0.11	0.27
10-11 years	0.14	0.24
12 or more years	0.07	0.15
<b>Religion</b>		
Hindu	0.25	0.19
Muslim	0.06	0.07
Christian	0.30	0.99
Sikh	0.00	0.20
Buddhist/Neo-Buddhist	0.25	0.50
Jain	0.00	0.00
Other	0.26	0.11
<b>Caste/tribe</b>		
Scheduled caste	0.23	0.26
Scheduled tribe	0.12	0.46
Other backward class	0.24	0.20
Other	0.18	0.14
Don't know	0.63	0.00
<b>Wealth index</b>		
Lowest	0.18	0.13
Second	0.20	0.22
Middle	0.24	0.28
Fourth	0.34	0.34
Highest	0.12	0.18
<b>Marital status</b>		
Never married	0.03	0.06
Ever had sex	0.00	0.23
Never had sex	0.03	0.06
Currently married	0.19	0.21
Widowed	1.51	1.99
Divorced, separated, or deserted	1.14	1.0
<b>Number of reasons given for refusing to have sexual intercourse with husband*</b>		
0	0.28	0.28
1-2	0.21	0.30
3	0.21	0.21
<b>Number of decisions in which women participate**</b>		
0	0.53	0.65
1-2	0.20	0.42
3-4	0.38	0.26
<b>Number of marital control behaviors displayed by husband***</b>		
0	0.29	0.30
1-2	0.21	0.32
3-4	0.19	0.27
5-6	1.04	0.21
<b>Total</b>	<b>0.22</b>	<b>0.23</b>

Continued.

Background characteristics	Percentage HIV positive	
	NFHS-3	NFHS-4
<b>Age at first sexual intercourse in years</b>		
<16	0.28	0.22
16-17	0.27	0.25
18-19	0.24	0.27
20 or more	0.24	0.30
Missing	--	0.55
<b>Higher-risk intercourse<sup>1</sup> in past 12 months</b>		
Had higher-risk intercourse	2.23	0.93
Had sexual intercourse, not higher risk	0.21	0.19
No sexual intercourse in past 12 months	0.72	0.71
<b>Number of sexual partners in past 12 months</b>		
0	0.72	0.71
1	0.21	0.19
2	*	0.77
3 or more	*	nc
<b>Number of higher-risk partners<sup>2</sup> in past 12 months</b>		
0	0.26	0.28
1	0.87	0.98
2	*	0
3 or more	Nc	nc
<b>Condom use</b>		
Ever used a condom	0.17	0.17
Never used a condom	0.28	0.31
<b>Condom use at last sexual intercourse in past 12 months</b>		
Used condom	0.07	0.14
Did not use condom	0.22	0.20
No sexual intercourse in past 12 months	0.72	0.71
<b>Condom use at last higher-risk intercourse<sup>1</sup> in past 12 months</b>		
Used condom	*	1.38
Did not use condom	2.83	0.67
No higher-risk intercourse/no intercourse past 12 months	0.26	0.28
<b>Number of lifetime partners</b>		
1	0.25	0.27
2	0.98	0.62
3 to 4	3.15	1.36
5 to 9	*	2.85
10 or more	*	0.15
Missing	--	0.44
<b>Total</b>	0.26	0.29

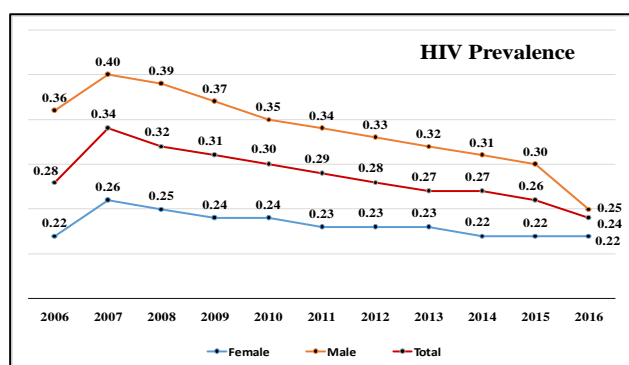
Note: Total includes cases with missing information on ( ) Based on 25-49 un-weighted cases. \*Percentage not shown; based on fewer than 25 un-weighted cases. 1. Sexual intercourse with a partner who was not a spouse and who did not live with the respondent. 2. A partner who was not a spouse and who did not live with the respondent, among the last two partners for women and the last three partners for men in the past 12 months. 3. Includes men who report having a prostitute as at least one of their last three sexual partners in the past 12 months. NA= Not applicable. NC= Not calculated because there are no cases.

Similarly, knowledge about consistent condom use among women has increased with the level of education from 32 percent to 79 percent in NFHS-4. Religious differentials in a comprehensive knowledge of HIV/AIDS shows the maximum increase among Sikh women (from 26% to 47%) and maximum decline from 58 percent to

35 percent among Jain women over the last decade. Overall, comprehensive knowledge and knowledge regarding condom use have increased among all the caste groups. However it has not much improved across states over the last decade. Table 4 shows that there has been a reduction in the percentage of women who had ever



experienced spousal violence either in physical form or sexual form over the last decade. Women who have control over their sexuality, regardless of the amount of marital control behavior displayed by the husband and the number of reasons for which wife-beating is justified, the women experiencing sexual violence, as well as physical or sexual violence, has reduced from NFHS-3 to NFHS-4. It is noteworthy that with increasing women's participation in the decision-making, there is a significant decline in any form of violence against them. Wives who are older than husbands were also victims of physical and sexual violence, which has reduced by nearly 10 percentage points. Aradical reduction of 20 percentage points in women experiencing physical as well as sexual violence in the last decade was found among those women whose husbands drink but never get drunk. Mostly in cases where the husband gets drunk very often, sexual violence among women has increased. Though there has been a radical decline in women reporting ever experienced sexual violence, the transition varies across states significantly.



**Figure 1: Prevalence of HIV among male and female at National level (2006-2016).**

### *HIV prevalence*

India has the third-largest HIV epidemic in the world (UNAIDS), and because of the large population base even a lower level of prevalence equates to a large number of PLHIV.12 It is evident from NFHS-4 results that HIV prevalence among women and men aged 15-49 years has decreased slightly between 2005-06 and 2015-16, from 0.28 percent to 0.24 percent. However, the entire decline is due to a decrease in HIV prevalence among men, from 0.36 percent to 0.25 percent, but during the same period, the prevalence among women remained almost unchanged (0.22% in NFHS-3 to 0.23% in NFHS-4). Even between the two survey periods, HIV estimates from Sentinel Surveillance provide us an opportunity to assess the transition in the prevalence of HIV among adult women and men. Figure 1 portrays a continuously narrowing gender gap in HIV prevalence in India from 2006 to 2016.

Table 5 portrays the prevalence of HIV among women by their socio-demographic, empowerment, and few

indicators of sexual behavior. Overall, the prevalence of HIV among women age 15-49 years has remained almost unchanged (0.22% in 2005-06 and 0.23% in 2015-16). However, it shows a decreasing trend with an increasing number of years of schooling; The least being 0.15 percent among women who had 12 or more years of education. HIV prevailed highest among women belonging to the Christian religion (0.99%), while the prevalence was lowest (0.00%) among women belonging to Jain religion. Among different caste groups, women belonging to the scheduled tribe showed the highest prevalence of HIV (0.46%). Around 1.9 percent of widowed women aged 15-49 years and 1 percent of 'divorced, separated or deserted women are HIV positive compared with 0.21 percent of currently married women. However, among the never-married women, the prevalence of HIV varies by premarital sexual intercourse. Overall, 0.23 percent of never-married women who have ever had sex are HIV positive compared with 0.06 percent of those who had never had sex.

Women who reciprocate their sexual rights in terms of control over their sexuality are less likely to have HIV positive (0.21%), a similar prevalence as observed in 2005-06. Further, the HIV prevalence among women is inversely related to their participation in decision-making. Results show that the prevalence of HIV among women declines with increasing intensity of husbands' marital control, a similar pattern observed in 2005-06.

There is an increasing trend of HIV prevalence with an increase in the age of first sexual intercourse (Table 5). High-risk intercourse in the past 12 months, has shown to have the highest HIV prevalence of 0.93 percent in 2015-16, a decline from 2.23 percent in 2005-06. Around 0.77 percent of women who had two sexual partners in the last 12 months were HIV positive. The prevalence of HIV is almost two times higher among those who never used condoms (0.31%). The number of lifetime sexual partners in the context of high-risk sex adds another dimension in the overall HIV seropositivity. Table 6 presents the odds ratio of HIV prevalence among women aged 15-49 years according to some selected background characteristics in India. Results reveal that Muslim women are significantly less likely to be HIV positive than Hindu women (AOR=0.4,  $p<0.05$ ), a similar pattern which was observed in NFHS-3 (2005-06). A remarkable finding of this study is that a significantly higher likelihood of HIV seropositivity is found among women from the Christian community (AOR= 4.0,  $p<0.01$ ) in the country. Women aged 15-49 years who were widowed/divorced/separated/deserted are 8.9 ( $p<0.01$ ) times more likely to have HIV seropositive 2015-16 than those who were never married, a similar pattern as observed in NFHS-3 (AOR= 7.7;  $p<0.01$ ).

Findings reveal that women who refused to have sex with husbands are less likely to have HIV sero-positivity (AOR=0.7;  $p<0.10$  in NFHS-4 & AOR=0.5;  $p<0.01$  in

NFHS-3). Further, odds ratios of HIV prevalence among women by marital control of husbands, shows that the relationship was significant in NFHS-3 (OR=1.2,  $p<0.10$ ) but has emerged to be insignificant in NFHS-4. This means the intensity of marital control has decreased over the last decade, which is being considered as the period of surge in women's empowerment where strong patriarchy was being replaced by parity in various spheres of women's lives.

It is evident from the results that those women who have two or more lifetime partners are more likely to have HIV sero-positivity (AOR=2.5;  $p<0.01$ ), a similar pattern as observed in NFHS-3 (AOR =4.9;  $p<0.01$ ). This may be primarily because about 90 percent of new HIV infections in India are transmitted through heterosexual relationships.

**Table 6: Logistic regression odds ratio of prevalence of HIV among women aged 15-49 by some selected background characteristics, India, NFHS-3 (2005-06) and NFHS-4 (2015-16).**

Background characteristics	Odds ratio (NFHS-3)	Odds ratio (NFHS-4)
<b>Years of schooling</b>		
No schooling®	1.0	1.0
<5 years	0.9 (0.51-1.70)	0.6 (0.27-1.44)
5-9 years	0.8 (0.51-1.27)	0.9 (0.61-1.57)
10 or more	0.5 (0.31-1.14)	1.3 (0.78-2.21)
<b>Religion</b>		
Hindu®	1.0	1.0
Muslim	0.2*** (0.76-0.58)	0.4** (0.11-1.15)
Christian	1.0 (0.44-2.29)	4.0*** (2.36-6.79)
Other	1.0 (0.39-2.56)	1.3(0.63-2.83)
<b>Caste/tribe</b>		
Scheduled caste®	1.0	1.0
Scheduled tribe	0.93 (0.43-2.01)	0.7 (0.42-1.28)
Other backward class	0.98 (0.60-1.61)	0.5** (0.33-0.89)
Other	1.34 (0.79-2.29)	0.5** (0.28-0.93)
<b>Wealth index</b>		
Lowest®	1.0	1.0
Second	0.75 (0.39-1.46)	1.5(0.80-2.97)
Middle	0.8 (0.47-1.63)	1.7* (0.88-3.26)
Fourth	1.6* (0.91-3.02)	2.4*** (1.25-4.69)
Highest	0.76 (0.35-1.63)	1.1(0.51-2.54)
<b>Marital status</b>		
Never married ®	1.0	1.0
Currently married	3.2*** (1.69-6.01)	3.3*** (2.02-5.48)
Widowed/ divorced/separated/ deserted	7.7*** (5.25-11.28)	8.9*** (6.10-13.03)
<b>Capacity to refuse sexual intercourse with husband*</b>		
No®	1.0	1.0
Yes	0.5*** (0.34-0.82)	0.7* (0.45-1.12)
<b>Marital control behaviors displayed by husband***</b>		
No®	1.0	1.0
Yes	1.2* (0.86-1.82)	0.9 (0.67-1.39)
<b>Number of lifetime partners**</b>		
1®	1.0	1.0
2	4.9*** (2.57-9.57)	2.5*** (1.28-4.80)
3 and above	13.2*** (2.67-65.83)	1.6 (0.52-5.50)

\* $P<0.1$  \*\* $p<0.05$  \*\*\* $p<0.01$

Note: While analyzing the adjusted effect of various socio-economic, women's empowerment and sexual behavior related variables on prevalence of HIV among women, the model included a number of other predictors like household decision making, age at first sexual intercourse, higher risk intercourse in last 12 months, condom use behavior, which are not shown in the table due to their insignificant effect on HIV prevalence among women in India.

## DISCUSSION

Analyzing the measurements of women's empowerment, the study reveals that the situation of women in India is improving at the national level, though the level of empowerment is not uniform. Significantly, higher inequality in the dimensions of empowerment is found in states, which have a larger geographical spread. On the contrary, the smaller states show homogeneity in different dimensions of inequality in women empowerment, hence an opportunity for rapid diffusion of different social values and ideas. Factors such as education and economic empowerment have emerged as important factors in upgrading women's empowerment. An increasing proportion of women in India with 10 or more years of schooling had played a significant role in enhancing all dimensions of women empowerment. Additionally, women who belong to the higher wealth quintile are more likely to own mobile phone; consequently broadening horizons through exposure to mass media, thus bringing about significant improvement in women's participation in household decision-making, cutting across caste, class and ethnicity across different states/regions of the country.

The diversification in the magnitude of women's empowerment has made women weaker in achieving equity in terms of knowledge and resources on health and social transformation. Focusing on the vulnerability of women, the study shows that despite the improvement in women's empowerment, the comprehensive knowledge of HIV has increased by only three percentage points in the last decade. Whereas, the knowledge that consistent condom use can prevent HIV has increased by almost 20 percentage points. The key to this behavioral transition is capacity building, provided through education and improving economic status, which plays the role of a catalyst in curbing HIV vulnerability.

Remarkably, women's participation in decision-making has played a vital role in reducing both physical and sexual violence. However, the study shows that the higher the degree of marital control behavior displayed by the husband, the chances of the wife experiencing sexual violence or physical violence were more, though the extent of violence has reduced in the last decade. A decrease in spousal sexual violence automatically leads to a reduction in the prevalence of HIV as well. The chauvinistic behavior of males in India is prominent as the deep-rooted patriarchal mentality still victimizes, humiliates, and exploits women on many grounds. Nevertheless, this cannot only be blamed on male counterparts, as females due to their emotional involvement and economic dependency justify their husband's beating in most parts of our country, which has major implications for both the dynamics of abuse and the approaches to dealing with it. Another reason could also be the age difference between husband and wife. Our study shows that high spousal violence is reported by women where the age difference between husband and

wife is five to nine years and in those households where the husband gets drunk very often. Alcohol consumption and violence go hand in hand in male-dominated societies like India as alcohol plays a causal role in aggression, and men tend to believe that drinking makes them masculine.<sup>13,14</sup> Under these circumstances, the women counterparts who are already submissive become more vulnerable as they lack control over their sexuality.

The study shows that the prevalence of HIV among women is 0.23 percent in India, which can be attributed to lack of condom use and an increasing number of sexual partners. However, women participating in decision-making are resulting in a decline in HIV prevalence. This can be attributed to the fact that the authority which women have gained by taking part in decision-making has eventually made women strong enough to have control over their sexual rights.

Due to increased exposure to media and technology, women now are aware about various rights related to their own body and life, consequently having control over their bodily rights. To conclude, it can be said that the measures of empowerment at certain levels has made women capable of making positive changes in their own lives. Undoubtedly HIV cases have decreased in the last one decade but HIV prevalence on the basis of gender reflects a huge narrowing gap between males and females. HIV disproportionately affects women and adolescent girls because of vulnerabilities created by unequal cultural, social and economic status. Unaccommodating attitudes towards sex outside of marriage and the restricted social autonomy of women and young girls can reduce their ability to access sexual health and HIV services.

### Limitations

Due to data structure, women's decision regarding her reproductive and sexual health, which plays a major role in ensuring her sexual rights, has not been captured comprehensively in this paper. NFHS being a large scale survey, does not provide qualitative insights into the process of women's empowerment affecting their HIV vulnerability.

## CONCLUSION

Empowerment of women has undoubtedly improved in the last one decade yet the prevalence of HIV is found tilting towards women, though it has almost been stagnant during the last 10 years with a doubt that if women are well equipped with empowerment, why is there a narrowing gender gap in the prevalence of HIV? Thus, focussing just on empowerment does not solve the problem; instead, it builds a combative relationship with the prevalence of HIV in India. Though empowerment has increased awareness, the disparity between caste, class, and ethnicity in India poses a threat to curbing HIV and reaching the target of SDGs. The only way to

eliminate HIV is to ensure the sexual rights of women with a focus on control of one's sexuality and getting out of the grip of marital control behavior of the husband. Since men play a significant role in all spheres of a woman's life, including reproduction, men should also be involved in programs and services to enhance women's sexual rights. Though motivating men to play proactive and responsible roles is a complex process of social and behavioural change, but it needs to be initiated. This signals a need for couple-oriented counselling and Information Education and Communication (IEC) programs should make an effort at removing the misinterpretation of masculinity by violating the sexual rights of women than men perceive is the norm.

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