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Urban-Rural Disparities in Awareness of HIV/AIDS and Correct Knowledge of HIV/AIDS Prevention Methods among Reproductive Age Women (15-49 Years) in India

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Abstract

Biologically women are higher risk of HIV/AIDS infection than men and the situation further imposed by their lack of access to information on HIV/AIDS. Their biological construct makes them more susceptible to HIV/AIDS infection in any given heterosexual encounter. Overall experience shows that the awareness and accurate knowledge about HIV/AIDS is the most important weapon against the HIV/AIDS epidemic and its reduce the risk of individuals contacting and spreading. HIV/AIDS not only effected the health but it has also social impact in the community. The findings of the earlier studies documented that urban-rural gap between awareness of HIV/AIDS. Correct knowledge of HIV/AIDS prevention methods is found to reduce the risk of spreading HIV/AIDS. The present study aimed to assess the urban-rural differential in awareness of HIV/AIDS, correct knowledge of HIV prevention methods and its determinants among reproductive age women (15-49 year) in India.Using nationally representative, multi-topic survey data the India Human Development Survey-II (IHDS-II), 2011-12. The survey covered 33 states and union territories, 42152 households, 384 districts, 1420 villages and 1042 urban blocks located in 276 towns and cities. To meet the objectives the analysis was performed using spatial techniques Moran's and LISA.

The findings of this study indicate that the correct knowledge of HIV/AIDS prevention methods is not as high as HIV/AIDS awareness among reproductive age women in India. Majority of women (82.6%) in urban area were familiar with the disease of HIV/AIDS compared with 54 percent in rural area while more than two fifth women in rural area don't know anything about HIV/AIDS. More than half (55.5%) of the urban women have correct knowledge of HIV/AIDS prevention methods compared to more than two fifth (42.4%) of the rural women. Further it is important to remind that about 58 percent rural women and 45 percent urban women did not know the correct knowledge of HIV/AIDS prevention methods. In both rural and urban areas, correct knowledge of HIV/AIDS prevention methods was high among women who were more educated and also women whose husband were more educated, women belongs to richest wealth category and West and South regions. This study concludes that correct knowledge of HIV/AIDS prevention methods is still very low among women in India while women is venerable group of HIV/AIDS epidemic. However general awareness of HIV and AIDS alone is not sufficient for prevention of HIV/AIDS but somewhat, accurate and high levels of correct knowledge of HIV/AIDS prevention methods is necessary to prevent the serious disease. Education is currently the only means of preventing the spread of HIV/AIDS. The education which is necessary safeguard for women from the HIV/AIDS virus and subsequent disease. Furthermore research to be needed for find out the more excellent approach to communicate awareness and correct knowledge of HIV/AIDS with the greatest potential approach to reach the least advantaged groups in socioeconomic spectrum, uneducated or less educated, economically backward and socially censored group in the community, specially in rural areas can also be one of the effective ways of preventing the disease of HIV/AIDS.

Introduction and reviews of literature

HIV/AIDS is still a major epidemic worldwide. The total number of people living with HIV/AIDS (PLHIV) in India is estimated at 21 lakh (17.2 lakh–25.3 lakh) in 2011. Children (under15 yrs.) account for 7% (1.45 lakh) of all infections, while 86% are in the age – group of 15-49 years. Of all HIV infections, 39% (8.16 lakh) are among women [1]. According to National AIDS Control Organization of India, the prevalence of AIDS in India in 2013 was 0.27, which is down from 0.41 in 2002. India is estimated to have around 86 (56–129) thousand new HIV infections in 2015[2]. Women are biologically more vulnerable to HIV/AIDS infection than young men and this situation further motivated by their lack of access to information on HIV/AIDS [3-4]. Amazingly, HIV/AIDS has a unbalanced impact on the most exposed population: women and children. Majority (90%) of the total reported AIDS cases happened among the sexually active and economically productive group of 15-44 years [5-7]. HIV/AIDS disease not only have serious health problem but also have social implications in the society. In high HIV/AIDS prevalence areas, women from socially and economically backward groups are less likely than their male counterparts to have HIV/AIDS general or prevention knowledge and also women who are uneducated, rural, poor, not exposed to television, and who have never used a modern family planning method are less likely to possess HIV/AIDS

prevention knowledge [8-9]. Lack of women decision-making powers in India women have less likely to access health services and due to less mobility reduce to access information [10]. It is well known that prevention of an infection is better than medicine, therefore awareness of the different aspects of HIV/AIDS is most important for the reduce the disease and also strategic point of view. AIDS represents the late clinical stage of infection with HIV. According to NFHS-3 report, more than 90 percent women get HIV virus infection from their sexual partners. In many cases, the risk of HIV virus not due to women sexual behavior but because of their sexual partner [11]. Almost half (50%) people who were suffering from HIV/AIDS (PLWHA) are not aware about HIV/AIDS disease and even those who were aware, among them many people were not having correct knowledge of HIV/AIDS prevention methods [12]. Keeping all these points in view, the present study aimed to assess level and differential in awareness of HIV/AIDS, correct knowledge of HIV prevention methods and its determinants among reproductive age women (15-49 year) in India.

Need for the Study

The awareness of HIV/AIDS and correct knowledge of HIV/AIDS prevention methods will be helps in reducing the prevalence, incidence and number of cases of the HIV/AIDS in the communities. It is evident that reproductive age women in India have high risk of HIV/AIDS epidemic. With this view, the present study aimed to examine the awareness and differentials in HIV/AIDS, correct knowledge of HIV prevention methods and identify the factor associated with correct knowledge of HIV/AIDS prevention methods among reproductive age women in India and will provide specific way for future course of action to be taken on urgent basis among the women. Finding of this study may be helpful to policy planners. It may also help to generate various important public health programs for women who are more vulnerable group of HIV/AIDS in India.

Objectives of the study

Using the most recent available nationally representative data, the study examine the urban-rural differential in awareness of HIV/AIDS, correct knowledge of HIV prevention methods among reproductive age women (15-49 year), by their socioeconomic background in India.

Study Setting, Data and Methods

Data and sample size

Present study based on the nationally representative survey known as "India Human Development Survey-II (IHDS-II), 2011-12," multi-topic study conducted in 33 states and union territories, 42152 households, 384 districts, 1420 villages and 1042 urban blocks located in 276 towns and cities. Villages and urban blocks (comprising of 150-200 households) formed the primary sampling unit (PSU) from which the households were selected. Urban and rural PSUs were selected using a different design. In order to draw a random sample of urban households, all urban areas in a state were listed in the order of their size with number of blocks drawn from each urban area allocated based on probability proportional to size. Once the numbers of blocks for each urban area were determined, the enumeration blocks were selected randomly with help from Registrar General of India. From these Census Enumeration Blocks of about 150-200 households, a complete household listing were conducted and household sample of 15 households was selected per block. For sampling purposes, some smaller states were combined with nearby larger states [13]. The IHDS conducted two and half hour interviews in each household, on topics such as caste, consumption, income, agriculture, education, health, employment, gender relations, etc. The survey instruments were translated into 13 Indian languages and were administered by local interviewers. IHDS was jointly organized by researchers from the University of Maryland and the National Council of Applied Economic Research (NCAER), New Delhi. [14-15]. This study used eligible women data for reproductive age women from IIHS-II dataset. Present study is based on 35259 reproductive age women (15-49 years) dataset.

Outcome Measurements

The outcome variable in this study was awareness of HIV/AIDS and correct knowledge of HIV/AIDS prevention methods. Awareness of HIV/AIDS measured by asked the questions; have you ever heard of HIV/AIDS, and correct knowledge of HIV/AIDS of prevention methods, measured by correct answers to HIV transmission modes and HIV prevention methods. Correct knowledge of HIV/AIDS as constructed based on given below questions [16]. There are many beliefs about how people can get HIV/AIDS. For each of these beliefs, asked the questions to respondent whether you think that is a way people can get HIV/AIDS.

1. By an injection with a needle that has been used on a person with HIV/AIDS?
1. By getting blood transfusion with blood is infected with HIV/AIDS?
2. By having sex with a person infected?
3. By mosquito bite?
4. By sharing food or utensils with a person infected with HIV/AIDS?
5. By sharing clothes with a person infected with HIV/AIDS?

A women was considered to have correct knowledge of HIV/AIDS prevention methods if she responded positively (yes) to questions 1-3 and responded negatively (No) to question number 4-6. The indicator was dichotomized as comprehensive knowledge of HIV/AIDS prevention methods (coded as 1) and did not have correct knowledge of HIV/AIDS prevention methods (coded as 0).

Defining Predictor Variables

Important Socioeconomic and demographic predictors such as age of women, education of women, education of husband, religion, social group, wealth quintile, HIV/AIDS known person, HIV/AIDS tested, currently used contraceptive and regions of residence were included as predictor variables in the present study based on the several studies done in past about awareness of HIV/AIDS and correct knowledge of HIV/AIDS prevention methods [17-21].

Analytical approach

To identify levels, differentials and determinants of awareness and correct knowledge of HIV/AIDS prevention methods among reproductive age women, bivariate and multivariate analyses with spatial techniques Moran's and LISA were performed. Bivariate analyses were performed to examine the nature of association between awareness of HIV/AIDS, correct knowledge of HIV/AIDS prevention methods and selected individual, household and community background characteristics. Multivariate analyses used logistic regression to investigate which factors best explain and predict the awareness of HIV/AIDS and correct knowledge of HIV/AIDS prevention methods [22]. All statistical analysis is done using Excel, QGIS 2.14.3, DIVA-GIS, R CRAN and STATA 13.1 after adjusting study design and sampling weight.

Results

Background characteristics of the women

Table 1 represents the weighted percentage distribution of reproductive age women (age 15-49 years) by selected individual, household and community characteristics. More than two fifth (46.5%) rural women and more than one forth (21.2%) urban women had never been go to school or had not undergone any formal education. More than one forth (23.0%) urban women and only (7.3%) rural women had secondary and above education. As far as religious affiliation is concerned, a distinct pattern emerges between rural and urban. Muslim and other religion (other than Hindu and Muslim) women constituted a relatively higher proportion in urban area while Hindu women were slightly higher proportion in rural area. Almost two-fifths of the women belong to Other Backward Class (OBCs) in both urban and rural area. A relatively higher proportion of Scheduled Tribe and Scheduled Caste women were living in rural area. In economic terms, women from rural areas were found to be

disadvantaged in comparison with urban women. Around one thirds of the rural women belong to the poorest wealth quintile, compared with only 3% urban women only. However, almost two fifth urban women were belongs to richest wealth quintile as compared to only 8.4% rural women. As for the distribution observed across geographical regions, women lived in the Central and East regions were considerably lower in urban areas than rural areas . In the West and South regions, the proportion of urban women was considerably higher in comparison to rural women.

Table 1. Percent distribution of reproductive age women (age 15-49 years) by selected individual, household and community characteristics, IHDS-II (2011–2012.), in India.

Background characteristics	*Rural*		*Urban*		*Total*	
	Sample	***Weighted proportion***	***Sample***	***Weighted proportion***	***Sample***	***Weighted proportion***
Individuals characteristics						
Age of women						
15-24 (Youth)	3713	17.4	1286	11.5	4999	15.5
25-34 (Younger)	8190	34.5	4105	35.1	12295	34.7
35-49 (Older)	11370	48.1	6595	53.4	17965	49.8
Women's Education						
Illiterate	10248	46.5	2560	21.2	12808	38.5
Literate but below Primary	1822	7.8	687	5.9	2509	7.2
Primary but below middle	4133	16.9	2002	17.4	6135	17.1
Middle but below secondary	3284	13.9	2085	16.9	5369	14.8
Secondary and below higher secondary	1995	7.6	1825	15.5	3820	10.1
Higher Secondary and above	1789	7.3	2826	23.0	4615	12.3
Husband's Education						
Illiterate	5329	25.5	1169	10.6	6498	20.8
Literate but below Primary	2081	9.7	720	6.5	2801	8.7
Primary but below middle	4174	18.1	1760	15.8	5934	17.4
Middle but below secondary	4164	19.3	2156	18.6	6320	19.0
Secondary and below higher secondary	3097	13.1	2025	18.1	5122	14.7
Higher Secondary and above	3210	14.4	3433	30.4	6643	19.5
Religion						
Hindu	19514	84.8	9303	78.2	28817	82.7
Muslim	2338	10.7	1978	16.5	4316	12.5
Others	1421	4.6	705	5.3	2126	4.8
Caste/tribes						
Scheduled tribes	2574	10.3	385	2.7	2959	7.9
Scheduled castes	5381	23.7	2262	18.7	7643	22.1
Other backward classes	9308	42.2	4924	43.6	14232	42.7
Others	5989	23.8	4379	35.0	10368	27.3
Wealth quintile						
Poorest	5962	30.0	405	3.0	6367	21.4
Poorer	5960	26.8	1060	8.4	7020	21.0
Middle	4964	20.5	2352	19.4	7316	20.1
Richer	3771	14.4	3557	30.6	7328	19.5
Richest	2616	8.4	4612	38.5	7228	18.0
HIV/AIDS Known person						
No	11649	86.6	8736	87.1	20385	86.8
Yes	1504	13.4	1130	12.9	2634	13.2

HIV/AIDS Tested						
No	8807	76.0	6373	69.6	15180	73.3
Yes	3284	24.0	2841	30.4	6125	26.7
Currently use contraceptives						
No	5551	30.6	2536	24.1	8087	28.5
Yes	15299	69.5	8216	75.9	23515	71.5
Region						
North	5577	13.7	2744	15.7	8321	14.3
Central	5186	25.1	1732	16.1	6918	22.3
East	3913	25.8	2107	14.4	6020	22.2
Northeast	1012	4.4	486	2.3	1498	3.7
West	3086	11.8	1713	21.4	4799	14.8
South	4499	19.2	3204	30.2	7703	22.7
India	**23273**	**100.0**	**11986**	**100.0**	**35259**	**100**
Note: All 'n' are unweighted. Total may not be equal due to some missing cases.						

Socioeconomic differentials and determinants of HIV/AIDS awareness

To identify the differentials and determinants of awareness about HIV/AIDS, this study examined bivariate differentials and multivariate logistic regression by selected individual, household and community characteristics among reproductive age women (table 3). Present study found that there are huge differences between rural and urban in awareness of HIV/AIDS. Analysis indicated that majority of women (82.6%) in urban area were familiar with the disease of HIV/AIDS. However in rural area, more than half (54.4%) of women reported that they had heard about HIV/AIDS while more than two fifth women in rural area don't know anything about HIV/AIDS. When differentials in awareness of HIV/AIDS among women by background characteristics was examined, it was evident that awareness of HIV/AIDS was slightly lower (49.1) among older women (35-49 years), compared (61%) to youth women (15-24 years) in rural area and almost same pattern was reflected in the case of urban area. As expected and highlighted in many studies, education and awareness of HIV/AIDS had a positive relationship. Majority 97 percent (OR=37.61, 95% CI=18.51-76.41, p-value=0.00) of women who had completed higher secondary and more years of schooling had heard about HIV/AIDS, followed by secondary and below higher secondary 89 percent (OR=8.80, 95% CI=6.56-11.80, p-value=0.00), middle but below secondary 76 percent (OR=5.47, 95% CI=4.81-6.19, p-value=0.00), primary but below middle 64 percent (OR=2.87, 95% CI=2.44-3.39, p-value=0.00), literate but below primary 55 percent (OR=2.04, 95% CI=1.82-2.28, p-value=0.00), compared to illiterate 32 percent only in rural area and same pattern was reflected in the case of urban area. Similarity, husband's education also had a positive impact on women's awareness of HIV/AIDS in both rural and urban area.

Although husband's education appeared to be a significant factor for the awareness of HIV/AIDS but it was not as strong a factor as women's education because the wife's education is linked to husband's education. The awareness level varies from 60.0 percent among uneducated to 94.3 percent among women whose husbands had had completed higher secondary and more years of schooling in urban area where as in rural the awareness level varies from 37.1 percent among uneducated to 78.1 percent among women whose husbands had completed higher secondary and more years of schooling. Awareness of HIV/AIDS was higher (91.9%) among other religion (other than Hindu and Muslim), followed by Hindu (54.1%) compared to Muslim women (49.7%) in rural area and same trends were reflected in urban area but it was not found statistically significant. The wealth quintile showed a significant positive effect on the awareness of HIV/AIDS. The highest proportions of women from the richest wealth quintile were aware of HIV/AIDS as compared to women from poorest wealth quintile in both the rural and urban area. Another impotent finding is the regional variation in the awareness of HIV/AIDS. Compared with women from the North region, awareness of HIV/AIDS was found to be more likely among women from the South 83 percent (OR=5.98,

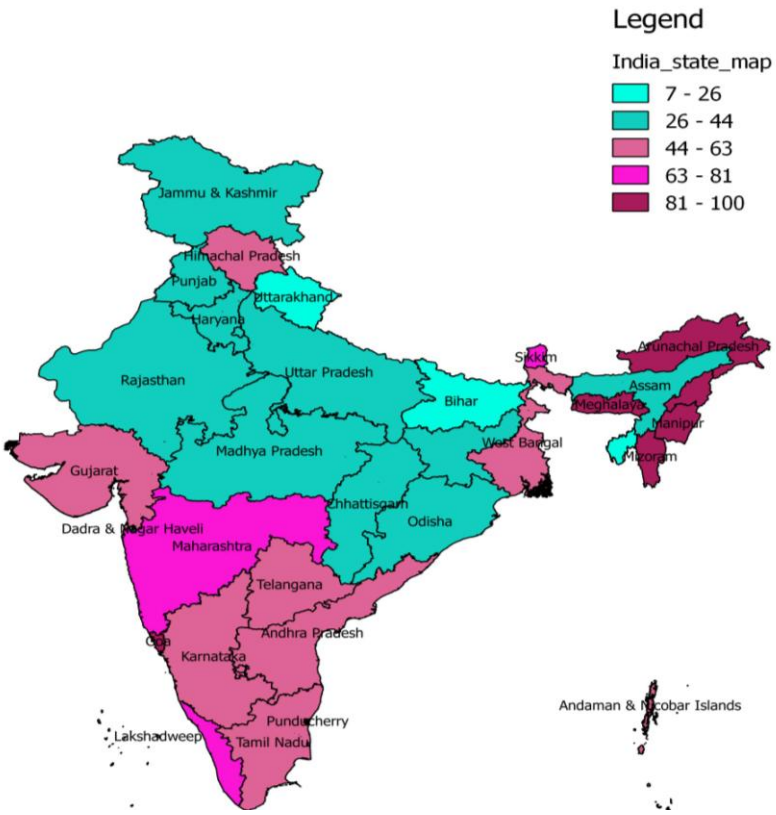
CI=4.92-7.27, p-value=0.00), followed by women belonging to the Northeast region (OR=5.89, CI=4.45-7.81, p-value=0.00) in rural area. Same trends were observed in urban area. This could be because Northeast region and South region have higher prevalence of HIV/AIDS, therefore attention more paid in this region by Government as well as Others agencies. However women from Central region (OR=0.69, CI=0.59-0.80, p-value=0.00), awareness of HIV/AIDS was found to be less likely compared with North region women.

Table 2. Percentage distribution and Estimated effects and significance levels of selected individual, household and community predictor of awareness of HIV/AIDS among reproductive age women (age 15-49 years) in India. IHDS-II (2011–2012.).

Background characteristics	Awareness of HIV/AIDS					
	Rural (n=23273)			*Urban (n=11986)*		
	Yes	***OR (95% CI)***	***P-value***	***Yes***	***OR (95% CI)***	***P-value***
Individuals characteristics						
Age of women						
15-24 (Youth) ®	61.0	1.00		84.0	1.00	0.34
25-34 (Younger)	58.5	1.09 [0.91-1.31]	0.31	86.2	1.16 [0.85-1.58]	0.54
35-49 (Older)	49.1	0.84 [0.70-1.01]	0.06	79.9	0.91 [0.66-1.25]	
Women's Education						
Illiterate ®	32.1	1.00		54.4	1.00	0.00
Literate but below Primary	54.6	2.04 [1.82-2.28]	0.00	71.5	1.87 [1.37-2.54]	0.00
Primary but below middle	63.6	2.87 [2.44-3.39]	0.00	81.8	2.84 [2.37-3.42]	0.00
Middle but below secondary	76.4	5.46 [4.81-6.19]	0.00	90.5	6.13 [4.83-7.77]	0.00
Secondary and below higher secondary	89.0	8.80 [6.56-11.80]	0.00	94.0	8.07 [5.71-11.41]	0.00
Higher Secondary and above	97.1	37.61 [18.51-76.41]	0.00	98.6	34.47 [21.35-55.65]	
Husband's Education						
Illiterate ®	37.1	1.00		60.0	1.00	
Literate but below Primary	46.3	1.05 [0.93-1.18]	0.41	70.5	1.11 [0.92-1.34]	0.28
Primary but below middle	51.0	1.09 [0.97-1.21]	0.14	75.7	1.09 [0.87-1.35]	0.44
Middle but below secondary	57.1	1.09 [1.01-1.17]	0.02	82.4	1.20 [0.98-1.46]	0.07
Secondary and below higher secondary	68.9	1.13 [0.93-1.36]	0.21	88.4	1.18 [0.96-1.46]	0.11
Higher Secondary and above	78.1	1.21 [0.97-1.50]	0.09	94.3	1.31 [0.97-1.77]	0.08
Religion						
Hindu ®	54.1	1.00		83.6	1.00	
Muslim	49.7	0.89 [0.73-1.08]	0.23	75.0	0.96 [0.73-1.26]	0.74
Others	71.3	1.36 [0.98-1.89]	0.07	91.9	1.33 [0.78-2.26]	0.29
Caste/tribes						
Scheduled tribes ®	41.2	1.00		75.2		
Scheduled castes	52.1	1.36 [1.06-1.75]	0.02	79.9	1.33 [0.73-2.43]	0.34
Other backward classes	51.6	1.08 [0.83-1.40]	0.58	80.2	0.93 [0.54-1.60]	0.80
Others	67.2	1.38 [0.92-2.08]	0.12	87.7	1.38 [0.81-2.36]	0.23
Wealth quintile						
Poorest ®	27.7	1.00		47.4	1.00	
Poorer	51.4	1.99 [1.76-2.27]	0.00	59.1	1.52 [1.10-2.10]	0.01
Middle	68.8	2.79 [2.35-3.31]	0.00	77.5	2.58 [1.92-3.47]	0.00
Richer	76.9	3.13 [2.53-3.87]	0.00	85.3	3.18 [2.26-4.48]	0.00
Richest	86.1	5.31 [4.72-5.98]	0.00	90.9	3.62 [2.32-5.65]	0.00
Currently use contraceptives						

No ®	53.9	1.00		81.8	1.00	
Yes	54.7	1.10 [0.96-1.26]	0.18	83.3	1.27 [1.06-1.52]	0.01
Region						
North ®	53.5	1.00		79.1	1.00	
Central	34.2	0.69 [0.59-0.80]	0.00	70.8	0.84 [0.67-1.05]	0.12
East	47.2	1.43 [1.26-1.61]	0.00	79.7	1.29 [1.06-1.56]	0.01
Northeast	80.3	5.89 [4.45-7.81]	0.00	91.0	2.38 [1.63-3.46]	0.00
West	57.5	1.12 [0.95-1.32]	0.16	81.9	0.85 [0.60-1.21]	0.37
South	83.4	5.98 [4.92-7.27]	0.00	92.0	3.64 [2.65-5.00]	0.00
India	**54.4**			**82.6**		
®= reference category						

Figure 1 represents the state wise differentials of correct knowledge of HIV/AIDS prevention methods



Socioeconomic differentials and determinants of correct knowledge of HIV/AIDS prevention methods

In order to find out the correct knowledge of HIV/AIDS prevention methods, women who were aware of HIV/AIDS were asked, "How people can get HIV/AIDS?" and based on the responses to these question, this study constituted the variables of correct knowledge of mode of transmission of HIV/AIDS. Table 3 shows the weighted percentage of correct knowledge of HIV/AIDS prevention methods among reproductive age women in India by selected background characteristics. More than half (55.5%) of the urban women have correct knowledge of HIV/AIDS prevention methods compared to more than two fifth (42.4%) of the rural women. Further it is important to remind that about 58 percent rural women and 45 percent urban women did not know the correct knowledge of HIV/AIDS prevention methods. In both rural and urban areas, correct knowledge of HIV/AIDS prevention methods was high among women who were more educated and also women whose husband were more educated, women belongs to richest wealth category and West and South regions.

Further Table 2 also presents the results of the logistic regression models assessing the correct knowledge of HIV/AIDS prevention methods. Women's education emerged as a vital determinant in the correct knowledge of HIV/AIDS prevention methods. Women with higher secondary and more years of schooling were 1.9 times (95% CI=1.43-2.52, p-value=0.00), women with secondary and below higher secondary were 1.7 times (95% CI=1.21-2.41, p-value=0.00), more likely to have correct knowledge of HIV/AIDS prevention methods as compared to illiterate women in rural area. Similarly, Women with higher secondary and more years of schooling were 2 times (95% CI=1.60-2.62, p-value=0.00), women with secondary and below higher secondary were 1.6 times (95% CI=1.30-2.01, p-value=0.00), more likely to have correct knowledge of HIV/AIDS prevention methods as compared to illiterate women in urban area. Even though husband's education appeared to be a positive association for correct knowledge of HIV/AIDS prevention methods but when one is included in the regression model, the other may not show a strong effect in both rural and urban area. The economic status of women was one of the most significant determinants correct knowledge of HIV/AIDS prevention methods.

As compared with women who were poor, the women from the richest quintile, as well as those from the richer wealth quintile, were 1.6 times (CI=1.33-1.97) and 1.5 times (CI=1.23-1.89), respectively, more likely to have correct knowledge of HIV/AIDS prevention methods in rural area. Similarly, the probability of having correct knowledge of HIV/AIDS prevention methods was found to be more among rich women as compared with poor women in urban area. Similarly in urban area Women belongs the richest, richer were more likely to have correct knowledge of HIV/AIDS prevention methods than women who belongs to poorest wealth quintile. The regional variation shows that the odds of having correct knowledge of HIV/AIDS prevention methods were higher in the South (OR=5.294, CI=4.005–6.999, p-value=0.00), followed by the West (OR=2.88, CI=2.11-3.93, p-value=0.00) and East regions (OR=1.28, CI=1.00-1.63, p-value=0.00) compared with the North region in rural area.

Table 3. Percentage distribution and Estimated effects and significance levels of selected individual, household and community predictor of correct knowledge of HIV/AIDS prevention methods among reproductive age women (age 15-49 years) in India. IHDS-II (2011–2012.).

Background characteristics	Correct knowledge of HIV/AIDS prevention methods					
	Rural (n=11078)			*Urban (n=8626)*		
	Yes	***OR (95% CI)***	***P-value***	***Yes***	***OR (95% CI)***	***P-value***
Individuals characteristics						
Age of women						
15-24 (Youth) ®	40.3	1.00		51.2	1.00	
25-34 (Younger)	43.9	1.05 [0.92-1.21]	0.44	56.6	1.24 [1.07-1.45]	0.01
35-49 (Older)	42.2	1.00 [0.88-1.14]	0.97	55.7	1.24 [1.05-1.46]	0.02
Women's Education						
Illiterate ®	35.1	1.00		41.4	1.00	
Literate but below Primary	35.4	0.72 [0.56-0.93]	0.01	43.8	0.97 [0.69-1.38]	0.88
Primary but below middle	41.7	1.19 [0.88-1.61]	0.26	46.9	1.03 [0.79-1.34]	0.81
Middle but below secondary	39.7	1.19 [0.98-1.45]	0.08	54.1	1.53 [1.30-1.82]	0.00
Secondary and below higher secondary	52.9	1.70 [1.21-2.41]	0.00	61.9	1.62 [1.30-2.01]	0.00
Higher Secondary and above	54.1	1.90 [1.43-2.52]	0.00	65.3	2.05 [1.60-2.62]	0.00
Husband's Education						
Illiterate ®	39.4	1.00		42.9	1.00	
Literate but below Primary	37.8	0.84 [0.61-1.14]	0.25	47.2	0.96 [0.70-1.32]	0.80
Primary but below middle	39.3	0.86 [0.67-1.11]	0.24	47.7	1.01 [0.74-1.38]	0.96
Middle but below secondary	42.4	0.97 [0.78-1.21]	0.80	49.6	1.02 [0.78-1.32]	0.90
Secondary and below higher secondary	46.2	0.93 [0.75-1.16]	0.52	57.4	1.14 [0.85-1.55]	0.37

Higher Secondary and above	45.9	0.94 [0.74-1.18]	0.56	64.5	1.46 [1.12-1.91]	0.01
Religion						
Hindu ®	42.1	1.00		56.7	1.00	
Muslim	41.4	1.21 [0.98-1.48]	0.07	49.7	0.95 [0.76-1.18]	0.62
Others	48.9	1.04 [0.89-1.21]	0.64	53.5	0.69 [0.57-0.83]	0.00
Caste/tribes						
Scheduled tribes ®	40.2	1.00		59.7	1.00	
Scheduled castes	40.0	0.86 [0.70-1.05]	0.13	51.9	0.84 [0.48-1.46]	0.53
Other backward classes	40.8	0.84 [0.63-1.13]	0.23	56.8	0.74 [0.44-1.25]	0.25
Others	47.0	1.07 [0.86-1.33]	0.55	55.4	0.76 [0.47-1.20]	0.23
Wealth quintile						
Poorest ®	26.8	1.00		27.6	1.00	
Poorer	38.1	1.41 [1.14-1.73]	0.00	37.8	1.47 [0.99-2.20]	0.06
Middle	43.7	1.36 [1.16-1.60]	0.00	47.2	1.73 [1.13-2.64]	0.01
Richer	49.9	1.53 [1.23-1.89]	0.00	57.5	2.15 [1.40-3.30]	0.00
Richest	52.0	1.62 [1.33-1.97]	0.00	60.7	2.41 [1.57-3.71]	0.00
HIV/AIDS Known person						
No ®	42.5			55.4	1.00	
Yes	42.4	0.74 [0.55-0.99]	0.04	56.0	0.71 [0.53-0.94]	0.02
HIV/AIDS Tested						
No ®	39.8	1.00		53.8	1.00	
Yes	49.7	1.21 [0.96-1.54]	0.11	60.9	1.19 [1.01-1.39]	0.03
Currently use contraceptives						
No ®	40.6	1.00		53.0	1.00	
Yes	43.5	1.02 [0.87-1.21]	0.77	56.2	1.15 [1.02-1.31]	0.03
Region						
North ®	32.3	1.00		37.6	1.00	
Central	22.5	0.70 [0.50-0.96]	0.03	36.9	0.94 [0.71-1.26]	0.68
East	32.0	1.28 [1.00-1.63]	0.05	44.2	1.57 [1.21-2.04]	0.00
Northeast	40.8	1.42 [0.82-2.44]	0.20	41.3	0.95 [0.58-1.55]	0.84
West	65.0	4.75 [3.93-5.74]	0.00	70.1	4.56 [3.26-6.38]	0.00
South	54.6	2.88 [2.11-3.93]	0.00	66.6	4.29 [3.41-5.39]	0.00
India	**42.4**			**55.5**		
®= reference category						

Discussions

This paper analysed HIV/AIDS awareness and modes through which the HIV/AIDS disease spreads among reproductive age women in India. Present study found that majority of women (82.6%) in urban area were familiar with the disease of HIV/AIDS while only (54.4%) of rural women reported that they had heard about HIV/AIDS, which is indicated in several previous studies from different parts of the country in different communities in both rural areas and urban areas [23-26]. Awareness of HIV/AIDS are not sufficient for prevent the disease, when we talk about correct knowledge of HIV/AIDS it means correct knowledge of HIV/AIDS prevention methods and no any type of misconceptions about getting disease of HIV/AIDS. The results of this study confirmed the findings from other studies [27-28] that a very lower proportion of women were aware correct ways of prevention of HIV/AIDS in urban (55.5%) and rural (42.4%). The results from both bivariate and multivariate analyses confirmed the importance of women's education for awareness regarding HIV/AIDS and correct knowledge of HIV/AIDS prevention methods. The results reveals from this study that women's education shows a significantly positive association with the awareness regarding HIV/AIDS and correct knowledge of HIV/AIDS prevention methods. As expected the awareness of HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods increases with the

women's education level because educated mothers are more likely to take advantage of public health care services and the level of understanding of the information increases with education.

This finding is consistent with the hypothesis and findings from other studies in developing countries which highlighted that level of awareness was lower in illiterate women as compared to women with primary education, women with secondary and above education and women with graduate and above education [29-31]. Women with higher education are more likely have knowledge and also to know the benefits of HIV/AIDS prevention methods compared with women with less education or uneducated women. Educated women are more likely to take advantage of media exposure and public health care services However a study among pregnant women of rural areas, Patna states that the there is no significant association between education and awareness of regarding of HIV/AIDS and study also highlighted that this may be affect due to small sample size [27]. Economic status was found to be another most important factor after women's education for awareness of HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods. Present study found that an association was present between economic status of the women and their level of awareness of HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods, which was found to be statistically significant. Consequently the awareness about HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods increases with the women's economic status. Awareness of HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods was higher among women who belongs to the richest wealth quintile as compared to women belongs to poorest wealth quintile.

Others previous studies from India also established that women belongs from rich household have more knowledge and awareness about HIV/AIDS [17, 18, 20]. One possible explanation could be that the wide range of inequality that exists across economic groups and the programmes are hardly reaching the poor sections of society. The regional variation shows in the awareness of HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods. The awareness of HIV/AIDS were higher in South region, followed by northeast region, West region but when we talk about correct knowledge of HIV/AIDS prevention methods, women belongs to West region were higher knowledge followed by South region and Northeast region. The variations in the awareness of HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods across the different regions of the country may be somewhat linked with the diversity of regions in terms of availability of resources and the state of socioeconomic and demographic. This study reveals that the urban residence, education, economic status and region of residence were found the strong positive association with knowledge of HIV/AIDS as well as correct knowledge of HIV/AIDS prevention methods.

Conclusion and policy Implications

The Findings of the study reveal that there is a wide gap between awareness of HIV/AIDS and correct knowledge of HIV/AIDS prevention methods. The results of the study suggest that many women are not aware of the modes through which HIV/AIDS spreads while women is venerable group of HIV/AIDS epidemic. However general awareness of HIV/AIDS mean women hearing about HIV/AIDS only and it is not enough to avoid getting serious disease of HIV/AIDS. Although 82 percent urban women and 54 percent rural women reported that they had heard about HIV/AIDS, but when question ask them for correct knowledge about HIV/AIDS prevention methods, more than half rural women and more than two fifth urban women did not know the correct answers. Incorrect knowledge of HIV/AIDS, may harm the society. Even though society can offer the best moral support to patient and their families if they are properly educated and aware with this disease. As the awareness of HIV/AIDS and correct knowledge of modes through which HIV/AIDS spreads in the rural areas was very low therefore it should be increased.

A strong community-based campaign is necessary to focus on awareness of HIV/AIDS and comprehensive knowledge of HIV/AIDS prevention methods. Education is currently the only means of preventing the spread of HIV/AIDS. Furthermore research to be needed for find out the more excellent approach to communicate awareness and correct knowledge of HIV/AIDS with the greatest potential approach to reach the least advantaged groups in socioeconomic spectrum, uneducated or

less educated, economically backward and socially censored group in the community, especially in rural areas can also be one of the effective ways of preventing the disease of HIV/AIDS. In addition another important area the needs improvement and focus by knowledge and awareness should be raised by the Government agencies as well as by Non-Government Agencies (NGOs) in both the areas in urban and rural area but the more significance make in rural area and regions where prevalence of HIV/AIDS were higher, which in turn might have influenced the reduce in grow of HIV infection across the country. On the other hand in order to set up these links, further more research needed to be conducted.

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Limitation of the study

The India Human Development Survey-II (IHDS-II) IHDS-II covers multi-topic subjects related men, women and children; HIV/AIDS is one of them. Therefore the study could not explored deep about HIV/AIDS. Data only being available for women represents another limitation of the study, this study could not compared of HIV/AIDS awareness between male and female.

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