



# Knowledge, Attitude and Perception of HIV/Aids Among Antenatal Women and its Correlation with their Socio-Demographic Profile: Study from a Tertiary Care Centre of Northern India

Manisha Upadhyay<sup>1</sup>  · Kusum Lata<sup>2</sup> · Tek Chand Yadav<sup>3</sup> · Rajiv Mahendru<sup>1</sup> · Sunita Siwach<sup>1</sup> · Pinkey Lakra<sup>1</sup>

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## Abstract

**Purpose of Study** To evaluate the knowledge, attitude and perception of HIV/AIDS among antenatal women and to correlate them with their socio-demographic profile.

**Methods** We conducted this study on 400 pregnant women attending the antenatal clinic of our hospital for the first time irrespective of their period of gestation, age and parity. All the participants were interviewed with the help of a predesigned questionnaire which included their socio-demographic details and questions to assess their knowledge and attitude toward HIV/AIDS. Data were analyzed using SPSS version 22 and expressed in the form of percentage, frequency distribution, mean, standard deviation and p value.

**Results** Antenatal women of the study population were having unsatisfactory knowledge about HIV/AIDS and prevention of MTCT. 26% women were totally unaware of any entity like HIV. 44% participants did not know the most common way of spread of HIV. Only half of the subjects knew the correct preventive measures for HIV/AIDS. 54% knew about MTCT, but only 24% knew about its transmission through breast milk. Knowledge and attitude was found to be significantly improving with socioeconomic status.

**Conclusion** Indian antenatal women have poor awareness and wrong perception about HIV/AIDS and its mother to child transmission (MTCT). Targeted educational interventions can be formulated to increase awareness among antenatal women about prevention of vertical transmission of HIV.

**Keywords** HIV/AIDS · Antenatal women · Knowledge · Attitude · Mother to child transmission (MTCT) · Cross-sectional study

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Manisha Upadhyay, MS is a Assistant Professor, Department of Obstetrics and Gynaecology, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India; Kusum Lata, MD is a Assistant Professor, Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, Delhi, India; Tek Chand Yadav, MD is a Assistant Professor, Department of Medicine, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India; Rajiv Mahendru, MS is a Professor, Department of Obstetrics and Gynecology, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India; Sunita Siwach, MD is a Associate Professor, Department of Obstetrics and Gynecology, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India; Pinkey Lakra, MD is a Associate Professor, Department of Obstetrics and Gynecology, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonapat, Haryana, India.

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Extended author information available on the last page of the article

## Introduction

HIV/AIDS is a major global health issue. In 2018, approximately 37.9 million people were living with HIV. The global prevalence of HIV was 0.8% among adults [1, 2]. India has a population of 1.34 billion people which is the second largest in the world [3]. Despite being home to the world's third largest population affected with epidemic of HIV/AIDS, India has low HIV prevalence [4]. According to UNAIDS, 2.1 million Indians were suffering from HIV in 2017 [1]. In 2015, NACO reported that HIV prevalence among adult population is 0.26% and 0.22% among females [5]. Antenatal women could play a very important role in prevention of vertical transmission if they have adequate knowledge about HIV and its preventive practices. Hence, the purpose of this study is to assess the knowledge, attitude and perception of antenatal women toward HIV/AIDS and to correlate it

with their socio-demographic profile so that effective plans can be formulated to educate and increase awareness about HIV and its preventive practices. This will definitely help in prevention of maternal to child transmission.

## Material and Methods

Our study was a questionnaire-based cross-sectional study conducted on pregnant women attending antenatal clinic in a tertiary care center of northern India. The study was ethically approved by the institutional ethical committee of BPS GMC (W), Khanpur Kalan, Sonapat, Haryana (Registration No.–BPSGMCW/RC 421/IEC/19). Ante natal women were recruited by simple random sampling technique. The sample size was calculated to be 396 using master 2.0 software considering this population with expected probability of awareness as 50% at confidence level 95%, acceptable error 5% and non-response rate 5%. We interviewed 400 antenatal women after written informed consent and explaining them that non-participation will not affect their antenatal care and treatment. Consent was taken by participants or their legally authorized representative in case of illiterate participants. Pregnant women attending antenatal clinic for the first time and willing to participate were included in the study irrespective of their period of gestation, age and parity. Those who were sick to communicate and not willing to participate were excluded. All the participants were interviewed with the help of a predesigned questionnaire which comprised of two sections. First section included the socio-demographic details of the participants like age, education, occupation, marital status, parity, and they are classified in different socioeconomic status (SES) according to modified Kuppuswamy scale. Second section included questions to assess their knowledge and attitude toward HIV/AIDS.

Data were analyzed using Microsoft excel 2013 and SPSS version 22. Descriptive statistics were used for quantitative variables and were expressed as mean, standard deviation or frequencies and percentages. For comparing categorical data, Pearson's Chi-square test or Fisher's exact test was carried out as appropriate. For all statistical tests,  $P < 0.05$  was considered to be statistically significant.

## Results

Women who participated in our study were between the age group of 18 to 43 years with mean age of  $24.60 \pm 4.01$  years. All of them were married. Majority of population (68.5%) belonged to rural area. 91.5% were housewives. The socio-demographic details of the participants are tabulated in Table 1.

**Table 1** Socio-demographic profile of participants

Socio-demographic characteristics		Frequency <i>n</i> = 400	percentage
Age (years)	<20	19	4.8
	20–24	195	48.8
	25–29	139	34.8
	30–34	36	9.0
	≥ 35	11	2.8
Residence	Rural	274	68.5
	Urban	126	31.5
Education	Illiterate	39	9.7
	Primary	44	11
	Secondary	108	27
	Senior secondary	99	24.8
	Graduate and above	110	27.5
Occupation	Housewives	366	91.5
	Employed	34	8.5
Socioeconomic status	Lower	2	0.5
	Upper lower	130	32.5
	Lower middle	129	32.2
	Upper middle	102	25.5
	Upper	37	9.3

Among all the participants, only 296 (74%) women had heard about HIV and rest 26% percent were totally unaware of any entity like HIV. Media was the most common source of information followed by hospital, school and friends.

Participants were asked about their belief on various possible routes of transmission of HIV. Only 54% women knew about MTCT, and 24% knew about its transmission through breast milk. Sixty-four percent women knew about the sexual route of its transmission, 55% knew that it could be transmitted through needles, and 48% knew about its transmission through blood transfusion. It also became evident that approximately 20% women have variable myths about the transmission of HIV like it spreads by shaking hands, kissing, mosquito bite, sharing utensils, toilet, etc.

Out of all the participants, 44% did not know the most common way of spread of HIV and 45% mentioned sexual contact as the most common mode of spread.

Knowledge about HIV in antenatal women was evaluated using various questions as demonstrated in Table 2. Only 17% women knew that HIV and AIDS are not same and 63% knew the correct place for HIV testing. Only half of the subjects knew the correct preventive measures for HIV/AIDS. Approximately 75% of our participants were unaware or had incorrect knowledge about the vulnerable groups for HIV/AIDS.

Participants were also interviewed about their attitude and perception for HIV/AIDS. Four women were already HIV

**Table 2** Knowledge regarding HIV/AIDS among study participants

Questions	Response of participants		
	Yes	No	Do not know
HIV and AIDS are same?	110 (27.5%)	70 (17.5%)	220 (55%)
Do you know about the symptoms?	48 (12%)	152 (38%)	200 (50%)
Can HIV be appreciated by look of patient?	8 (2%)	244 (61%)	148(37%)
HIV/ AIDS can be cured?	164 (41%)	92(23.3%)	144 (36%)
Do you know where HIV testing is done?	255 (63.7%)	2 (0.5%)	143 (35.8%)
Preventive measure against infection includes?			
Single partner	220 (55%)	32 (8%)	148 (37%)
Condom use	218 (54.5%)	20 (5%)	162 (40.5%)
Use of sterile needles	236 (59%)	12 (3%)	152 (38%)
Blood screening	184 (46%)	24 (6%)	192(48%)
Avoiding Breastfeeding	130 (32.5%)	116(29%)	154(38.5%)
No physical contact	114 (28.5%)	158 (39.5%)	128 (32%)
No smoking and drinking alcohol	70 (17.5%)	162 (40.5%)	168 (42%)
Abstinence	70 (17.5%)	128 (32%)	202 (50.5%)

positive. Attitude of majority of women toward HIV was found to be negative in our study as majority of them (74%) denied when they were asked if they could get HIV. Fifty-eight percent thought that they could not get HIV as they are practicing monogamy and their partners are unaffected. Others had variable reason for this belief like no needle injuries or blood transfusion in past or that they are healthy or no family member is affected, etc. Fifty-seven percent of the participants were interested in knowing their HIV status to remain healthy by early diagnosis and treatment. Rest did not find any need of getting tested for HIV as they were practicing monogamy and were healthy. When participants were enquired about the precautionary measures they should take while taking care of a HIV-infected family member only 16% knew the right ways. Thirty-two percent women of our study did not want to disclose their HIV status if positive due to the fear of social seclusion and defamation which shows that still HIV is a social taboo. This can only be extracted out by education and awareness. Thirty-one percent antenatal women did not consider HIV testing important during pregnancy.

When we studied the proportion of participants who have heard of HIV/AIDS according to age group we found that among the participants below the age of 20 years only 31% have heard of HIV/AIDS, while this proportion was 71% in 20–24 year age group, 83% in 25–29 year age group, 79% in 30–35 year age group, and 50% in participants of > 35 years of age.

We also correlated the knowledge of participants with their mean age, education, residential status as demonstrated in Table 3.

The mean age of participants who had good knowledge about HIV/AIDS and MTCT was significantly more than the participants with poor knowledge. Knowledge correlated

with education by calculating percentage of participants with different educational status having good knowledge. *P* value was calculated by comparing knowledge of all literate women with illiterate ones, and it was found to be significant ( $<0.05$ ). It is evident from Table 3 that knowledge improved with educational status. Knowledge of urban population is significantly more than rural population (*P* value is calculated according to percentage distribution).

Knowledge about HIV/AIDS also improved with socio economic status as depicted in Fig. 1.

We found in our study that attitude toward HIV/AIDS is changing with educational and residential status. The percentage of literate participants with positive attitude is significantly more than the illiterate participants (*P* value  $<0.05$ ). Percentage of urban population with good attitude toward HIV is significantly more than rural population (*P* value  $<0.05$ ). If we see the percentage distribution of participants according to different socio economic status it is evident that attitude toward HIV/AIDS and MTCT is improving with socio economic status as depicted in Fig. 2.

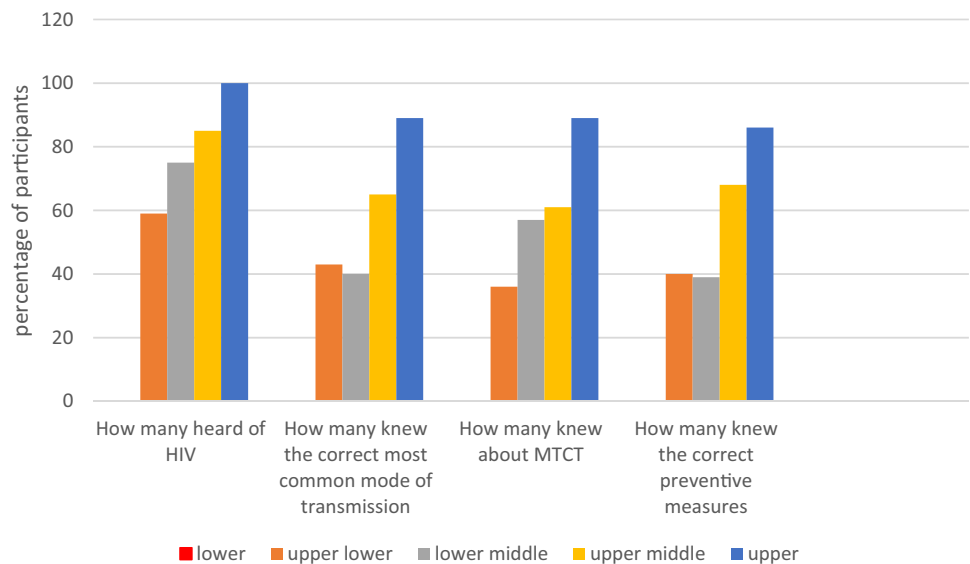
## Discussion

HIV/AIDS is no longer restricted to high-risk behavior groups. Epidemic is spreading rapidly among antenatal women. Women of childbearing age are a very vulnerable category because of their low status in society, ignorance about safe sex practices and little influence on their husband's behavior. That is why knowledge and awareness about HIV is very important among these women. They should know how to protect themselves and their babies from this disease. But still there is a barrier of embarrassment, shyness and sociocultural beliefs associated with

**Table 3** Correlation of knowledge of participants with their socio-demographic profile

	Participants who heard of HIV		How many knew the correct most common mode of transmission?		How many knew about MTCT?		How many knew the correct preventive measures?	
	Yes	No	Yes	No	Yes	No	yes	No
Mean Age ± SD	25.04 ± 3.72	23.43 ± 4.60	25.31 ± 3.79	23.88 ± 4.14	25.01 ± 3.62	24.17 ± 4.41	25.25 ± 3.77	23.97 ± 4.16
P value	0.001		0.001		0.036		0.001	
<i>Education</i>								
Illiterate (n = 38)	5(13.2%)	33(86.8%)	4(10.5%)	34(89.5%)	2(5.3%)	36(94.7%)	4(10.5%)	34(89.5%)
Total literate (n = 362)	293 (80%)	69	205 (56%)	157	215(59%)	147	201(55%)	161
P value	0.001		0.001		0.001		0.001	
<i>Residence</i>								
Rural (n = 273)	186(68.1%)	87(31.9%)	130(47.6%)	143 (52.4%)	132(48.4%)	141(51.6%)	122(44.7%)	151(55.3%)
Urban (n = 127)	112(88.2%)	15(11.8%)	79(62.2%)	48(37.8%)	85(66.9%)	42(33.1%)	83(65.4%)	44(34.6%)
P value	0.001		0.007		0.001		0.001	

**Fig.1** Percentage of participants having good knowledge about HIV in different socio economic status



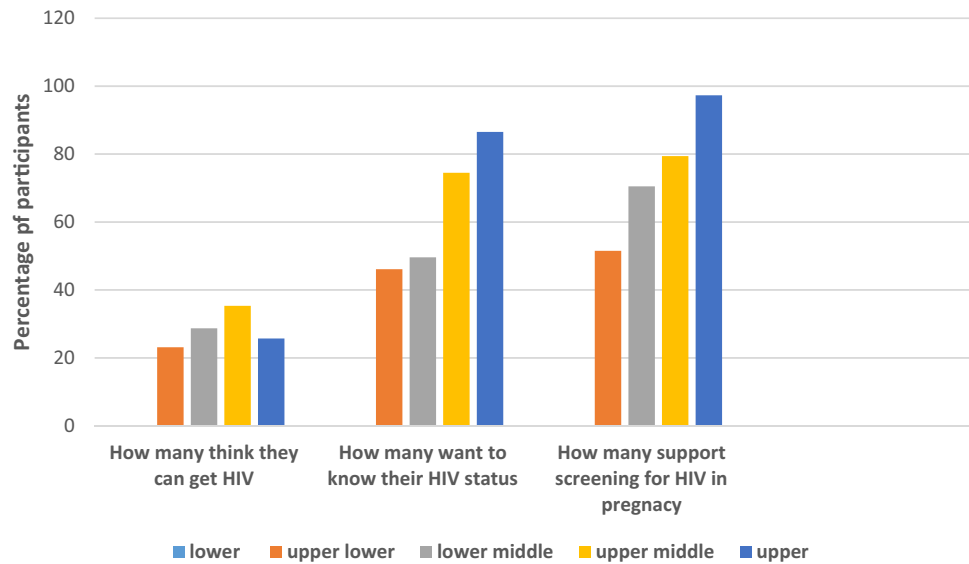
sexually transmitted infections (STIs) and HIV/AIDS that need to be overcome. With increasing HIV infection among antenatal women, pediatric AIDS has become an important public health problem. [5]. Large proportion of HIV-infected antenatal women are still unaware of their HIV status. To overcome this, Center for disease control and prevention (CDC) and ACOG issued recommendation for universal screening of HIV [6, 7]. According to National family health survey (NFHS) of Haryana (2015–16), only 18.5 percent of antenatal women were tested for HIV in last five years [8]. Awareness about HIV among antenatal women will definitely help in the reduction of vertical transmission, but implementation of any preventive strategy for MTCT needs the assessment

of existing knowledge and attitude of antenatal women toward HIV/AIDS.

Few studies were conducted in India to assess the knowledge and attitude of antenatal women regarding HIV/AIDS and concluded that the level of awareness and knowledge of HIV/AIDS among antenatal women seems to be superficial and more education about MTCT is needed which is in agreement to results of our study [9, 10]. We also compared our results with other two studies done in Ethiopia and China and found that they also have low level of knowledge about MTCT [11, 12]. Hence, there is a worldwide need of taking steps to increase knowledge on MTCT.

In our study, though women showed positive attitude toward screening and disclosure of HIV/AIDS, it does not

**Fig. 2** Change of attitude of antenatal women toward HIV/AIDS with improvement of their socio economic status



seem to be an honest response. Majority of them agreed for routine HIV testing in antenatal women, but according to NFHS-4 (2015–16) of Haryana only 18.5 percent of antenatal women were tested for HIV in last five years. [8] Seventy-three percent women in our study were ready to take care of HIV-infected family member but when four already HIV-infected women of our study were asked that if they are being taken care of by their family members their response was “not really.” The stigma of getting HIV by touch or close vicinity still exists in the society.

Media was the most common source of knowledge about HIV/AIDS among antenatal women in our study similar to many other studies [10, 13]. As people are more attracted and influenced by media, its use should be further encouraged for making people aware and educated about HIV/AIDS. The contribution of health personnel and schools in educating women about HIV is comparatively less. So health workers should be encouraged for not missing any opportunity to educate antenatal women regarding HIV/AIDS during antenatal health visits. Schools should also be encouraged to include education about HIV in their curriculum. Friends and family being the least common source of information shows HIV is still a taboo in society.

HIV/AIDS has long been viewed as an urban disease, but this is no longer true. It has been spreading faster and aggressively in rural areas. [14] This could be due to inadequate HIV surveillance mechanisms, poor health infrastructure, less sensitization and awareness about HIV/AIDS among rural population as supported by our study.

Our study reflected the unsatisfactory knowledge and negative attitude of antenatal women of Haryana toward HIV/AIDS, but it also supported the fact that they can be improved with their educational and socioeconomic status. Women are ready to take care of their HIV-infected family

members but do not know the right precautions which can decrease its spread. So education about HIV/AIDS becomes very necessary.

Our study is the first study of its kind done on antenatal population of northern India. We have highlighted the need for awareness of maternal to child transmission of HIV.

## Conclusion

Present study has identified significant gaps in the knowledge of antenatal women regarding HIV/AIDS. These include myths about the transmission, nature of disease and its prevention. There is significant lack of knowledge about maternal to child transmission of HIV and its prevention. Antenatal women have a skeptical attitude toward HIV/AIDS. We also concluded that the socioeconomic improvement of status improves the knowledge and attitude of antenatal women towards HIV.

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## Compliance with Ethical Standards

**Conflicts of interest** There are no conflicts of interest among the authors.

**Ethical Approval** Ethical approval for study involving human participants have been performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments or comparable ethical standards.



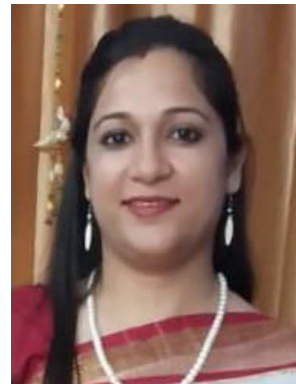
**Informed Consent** All the participants were included after informed and written consent of themselves or their legally authorized representative in case of illiterate participants.

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## About the Author



**Dr Manisha Upadhyay** is currently working as Assistant Professor in department of Obstetrics and Gynecology, BPS Government Medical College, Sonapat, Haryana. She is involved in many academic activities of UG and PG teaching programme. She completed her post graduation in 2015 followed by senior residency from PGIMS Rohtak. She has keen interest in high-risk obstetrics, endoscopy and operative Gynecology. She has presented many research papers in national and international conferences.

## Authors and Affiliations

Manisha Upadhyay<sup>1</sup> · Kusum Lata<sup>2</sup> · Tek Chand Yadav<sup>3</sup> · Rajiv Mahendru<sup>1</sup> · Sunita Siwach<sup>1</sup> · Pinkey Lakra<sup>1</sup>

✉ Manisha Upadhyay  
docmanisha.u@gmail.com

Kusum Lata  
kusumlata86@gmail.com

Tek Chand Yadav  
yadav.tek@gmail.com

Rajiv Mahendru  
dr.rmahendru@gmail.com

Sunita Siwach  
siwachsunita@gmail.com

Pinkey Lakra  
drpinkie\_18@yahoo.com

<sup>1</sup> Department of Obstetrics and Gynecology, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonapat, Haryana 131305, India

<sup>2</sup> Department of Obstetrics and Gynecology, All India Institute of Medical Sciences, Delhi, India

<sup>3</sup> Department of Medicine, Bhagat Phool Singh Government Medical College for Women, Khanpur Kalan, Sonapat, Haryana 131305, India