

Knowledge and Belief about HIV/AIDS among the Higher Secondary Standard of Schoolgirls of Paschim Medinipur, West Bengal, India

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KEYWORDS Adolescents. Awareness. Healthcare. Medinipur. Sexually Transmitted Diseases

ABSTRACT The present study has investigated the awareness pertaining to Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) among the rural schoolgirls of Paschim Medinipur District of West Bengal. Four hundred and sixty eight (468) schoolgirls (aged 15 to 19 years) were chosen from Daspur II Block of Paschim Medinipur District. A pre-tested questionnaire was used to collect data, which comprises 55 questions on the knowledge and awareness about various aspects of HIV/AIDS like modes of transmission, diagnosis, treatment and sources of information. Majority of the girls heard the term HIV/AIDS, while few have some misconceptions pertaining to transmission of the virus and preventive measures. Health professionals and teachers were the main sources of information regarding HIV/AIDS, while more than ninety-eight percent of them were not aware about their own HIV infection status. Exposure to mass media, better education of the parents and regular contact with teachers and health professionals helped the rural girls together information about HIV/AIDS.

INTRODUCTION

The Acquired Immune Deficiency Syndrome (AIDS), caused by Human Immunodeficiency Virus (HIV), and one of the major sexually transmitted diseases (STDs), remains the most serious of the infectious disease challenges to public health. Approximately 3.7 million people in India were living with HIV in 2006, and moreover, the estimated number of persons in the world living with HIV and deaths due to AIDS would be 33.2 million and 2.1 million, respectively within a year (UNAID 2007). India's epidemic continues to affect a large number of people, mostly because of a paucity of awareness pertaining to HIV/AIDS and inadequate access to HIV prevention and treatment services. HIV affects the immune system and reduces the body's defensive mechanism to protect against various infectious diseases and cancer. Treatment is available to delay the death of persons suffering from the disease. However, the disease cannot be cured completely. In India, prevalence of HIV is found to be higher in Maharashtra, Andhra

Pradesh and Karnataka. Moreover, Manipur, Mizoram and Nagaland show the highest prevalence of HIV infected patients in the northeastern part of India.

Heterosexual intercourse is the principal mode of transmission of HIV infection in India, accounting for nearly seventy-five percent of all HIV infections (Satpathy and Shaikat 1997). Adolescence is a transition phase between childhood and adulthood in which physical, sexual and psychosocial changes occur. Adolescents, as defined by World Health Organization (WHO), are the persons between 10 and 19 years of age (WHO 1998). Adolescents aged 10-19 years accounting for nearly twenty-three percent of the total population of India are exposed to the risk of being victims of HIV/AIDS (UNAID 1997). Generally, in developing countries, an adolescent's knowledge about sexuality and methods of preventing sexually transmitted infections (STIs) is not sufficient (Population Reports 1995; Brown et al. 2001). They are likely to engage in high-risk behavior due to lack of information about sexuality and risk of infections and the means to protect them from such infection (Dehne and Riedner 2005). The study found that a large proportion of adolescents were not aware about sexually transmitted diseases and AIDS while, more than half (54.8%) of the adolescents have never heard about AIDS (Rahman et al.

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2009). However, the same study also revealed that, about one-tenth of them had better knowledge on AIDS in terms of mode of transmission and prevention. Dehghani et al. (2017) found that the Iranian schoolgirls also had misconceptions regarding the transmission of HIV/AIDS. It has been found that boys know better than girls about the transmission and preventive measures of HIV/AIDS (Aggarwal and Kumar 1996; Srivastava et al. 2011; Sunil and Arigle 2014) because most parents do not discuss topics related to sexual issues and hence many teens turn to peers and to the media and get inaccurate information. The risk of becoming infected with HIV during unprotected sex is two to four times greater for a woman (even higher in adolescent women) than for a man (Population Reports 2001).

National AIDS Control Organization (NACO) has taken many initiatives pertaining to identification of newly infected individuals and prevention measures against AIDS. One of such steps is the Integrated Counseling and Testing Center (ICTC). In different parts of India and West Bengal, ICTCs have been established and these centers are regularly reporting new cases of HIV. Since 2009, the Adolescent Reproductive and Sexual Health (ARSH) program under the aegis of National Rural Health Mission (NRHM) has been started in West Bengal known as *Anwasha* Clinic, where reproductive and sexual health counseling is provided to the adolescents. Reports of ICTC of different Districts of West Bengal show the increasing trend of new cases of HIV infection, however, the plausible reasons behind this increasing trend remain unearched due to paucity of primary level information about the patients and his or her regular lifestyle.

Objective

Keeping the abovementioned scenario in mind, the present study has investigated the knowledge and belief about HIV/AIDS and its mode of transmission and prevention, among the adolescent rural schoolgirls at Daspur II Block, under Ghatal Subdivision of Paschim Medinipur District of West Bengal. This study also tried to assess the awareness about HIV/AIDS among the adolescent girls.

METHODOLOGY

Study Area

Daspur II Block under Ghatal Subdivision of the District Paschim Medinipur of the State of West Bengal has been selected for the present study. This particular area has purposely been chosen for certain reasons. Firstly, in 2015, report of ICTC of Sonakhali under Daspur II Block showed enrolment of 110 new HIV positive cases, and among them, 20 were pregnant mother and some are children (Report of ICTC, Sonakhali R.H., Daspur II, Paschim Medinipur 2015). Secondly, it has been found that majority of the males of this area are regularly migrating to other States of India for different occupations at a younger age. The counselor of *Anwasha* clinic reported a higher prevalence of HIV positive cases among them due to their regular visit to brothel, unsafe sex, alcohol addiction, and on their return, their wives became infected. During counseling it has been seen that many higher class schoolgoing boys and girls are sexually active at the age of 15 and 16 years. Few cases of unwanted pregnancies followed by forced abortions were also reported. Due to lack of knowledge pertaining to safe sex, the prevalence of STDs and reproductive tract infections (RTIs) are regularly found in the area of Daspur. Among adolescents, girls are more vulnerable to STDs including HIV/AIDS, especially through heterosexual intercourse, than their male counterparts. This increased vulnerability is attributable to certain facts, which include early sexual initiation, inability to negotiate for safe sex, lack of sex education, lack of access to contraception and reproductive health issues and most importantly lack of awareness about STDs. The people of this area are found to have a vague knowledge regarding HIV/AIDS, which is a mixture of myths, rumors and wrong perceptions (Yadav et al. 2011).

Study Population

All 468 students of class XI and XII from nine senior secondary high schools situated in Daspur II Block of Paschim Medinipur in West Bengal, were included in the study.

Data Type

A pre-tested, structured, close-ended questionnaire was prepared comprising of 55 ques-

tions on the knowledge and awareness about various aspects of HIV/AIDS and STDs, which includes the etiology, modes of transmission, diagnosis, treatment and sources of information of the said diseases. Information pertaining to the myths related with HIV was also collected from each study participant.

Data Analysis

The dependent variable was “good knowledge” and “poor knowledge” score. The independent variables were caste, religion, class, stream, sex, age, father’s educational status, mother’s educational status, father’s occupation, mother’s occupation, family type and family size. Data was collected manually, checked for errors and entered into the computer. The computer software Statistical Package for Social Sciences (SPSS) version 16.0 was used for the analysis.

Ethical Consideration

Permission to carry out the research was obtained from the appropriate school authority. School students were enrolled after obtaining verbal consent from each of them. Parents were also informed regarding the study. Participation was purely voluntary and they were also assured that the study would not have any detrimental effect on them.

RESULTS

The socio-demographic profile (table not shown) shows that the mean age of the study participants is 16.4 ± 0.8 years, ranging from 15 to 19 years. An overwhelming majority (89.7%) are Hindu and the rest are from the Muslim community. Majority of them (99.6%) belong to the general and scheduled caste while less than one percent is Scheduled Tribe. Nearly eighty-six percent of students are studying in the arts stream. Most of the parents have attained a primary level of education and fathers of nearly half of the study participants are engaged in agriculture as the principal source of income.

The general awareness or knowledge regarding HIV/AIDS among the participants has been shown in Table 1. An overwhelming majority of the study participants have reported that they have heard about HIV/AIDS and know the full form of both the abbreviations and identify HIV as a virus. However, only 62.3 percent of the students could differentiate between HIV and AIDS. It has been found that only 46.4 percent have the knowledge that AIDS is caused by HIV. However, significantly less number of students (24.8%) has the awareness on the issues that HIV can live in human body for years before it is developed to AIDS. Nearly forty percent of the girls know the fact that a person can be infected with HIV for five or more years without getting AIDS. Few (20.9%) students reported that people who had been infected with HIV show seri-

Table 1: General awareness/knowledge regarding HIV/AIDS among the study participants

<i>General awareness/ knowledge regarding HIV/AIDS</i>	<i>Yes</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>Don't know</i>	<i>%</i>
Ever heard about HIV/AIDS	430	91.9	35	7.5	3	0.6
Are HIV and AIDS same thing?	68	14.5	293	62.3	107	22.9
AIDS caused by HIV	217	46.4	123	26.3	128	27.4
HIV is a virus	407	87	26	5.6	35	7.5
HIV stands for Human Immune Deficiency Virus	406	86.8	20	4.3	42	9
AIDS stands for Acquired Immune Deficiency Syndrome	378	80.8	24	5.1	66	14.1
HIV can live in human body for years(sometimes 10 to 15 years) before it is noticed or developed into AIDS	116	24.8	93	19.9	259	55.3
All body secretion may contain HIV	194	41.5	80	17.1	194	41.5
Outside human body HIV could not survive in a room environment for many months	98	20.9	128	27.4	242	51.7
HIV infected person can be identified just by looking at him/her	55	11.8	325	69.4	88	18.8
Person with HIV can look and feel healthy	211	45.1	137	29.3	120	25.6
Person can be infected with HIV for five or more years without getting AIDS	182	38.9	34	7.3	252	53.8
HIV infected persons show symptoms of infection immediately	98	20.9	259	55.3	111	23.7
Test for HIV after a week of having sex will identify a person's infection	167	35.7	101	21.6	200	42.7
TB and HIV can be present together in AIDS patients	163	34.8	66	14.1	239	51.1
HIV can infect children also	339	72.4	44	9.4	85	18.2

ous signs infection immediately. Only 41.5 percent were aware that all body secretion might contain HIV. 72.4 percent of respondents agreed that HIV could infect children also. Among the respondents 45.1 percent opined that persons with HIV can look and feel healthy. Only 34.8 percent of the respondents agreed that Tuberculosis (TB) and HIV can be present together in AIDS patients.

Table 2 depicts the knowledge about mode of transmission of HIV/AIDS among the participants. The awareness regarding modes of transmission (unprotected sexual intercourse, infected blood transfusion, sharing of needles and syringes and vertical transmission of HIV from infected mother to baby) was found very high among the schoolgirls. The respondents (>90%)

who ever heard about AIDS were asked about the mode of transmission of AIDS, and among them 86.8 percent of students were aware that HIV can be acquired by sharing razor in a saloon, eighty-four percent of students knew that one could get HIV infection by sharing infected syringes, 88.2 percent of students knew about HIV transmission is possible from a pregnant women to her child or through breastfeeding, 78.6 percent of students were aware that HIV is transmitted through bodily fluids like blood, semen, vaginal secretion and breast milk, 77.6 percent were aware that having sex with more than one partner increases the chance of getting HIV infection, 86.8 percent of the students were aware about getting HIV if transfused with HIV infected blood. But only 54.7 percent knew correctly

Table 2: Frequency of awareness/knowledge about mode of transmission of HIV/AIDS (N= 468)

<i>Mode of transmission of HIV/AIDS</i>	<i>Yes</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>Don't know</i>	<i>%</i>
HIV is transmitted through bodily fluids like blood, semen, vaginal secretion and breast milk	368	78.6	30	6.4	70	15
HIV can transmitted through unsafe sex with multiple partner	363	77.6	40	8.5	65	13.9
HIV can be transmitted through blood transfusion	406	86.8	27	5.8	35	7.5
HIV can be transmitted from an infected mother to her child at birth or through breastfeeding	413	88.2	13	2.8	42	9
HIV can transmit through sharing a infected syringe	393	84	37	7.9	38	8.1
HIV can transmit by sharing a razor/blade in a saloon	406	86.8	15	3.2	47	10
Sharing unsterilized instrument/ personal item like toothbrushes with someone who is HIV infected can transmit HIV/AIDS	256	54.7	111	23.7	101	21.6

Table 3: Prevalence of certain misconceptions about HIV/AIDS transmission (N=468)

<i>Misconception regarding mode of transmission</i>	<i>Yes</i>	<i>%</i>	<i>No</i>	<i>%</i>	<i>Don't know</i>	<i>%</i>
Witchcraft and other spiritual factors can cause HIV/AIDS	40	8.5	294	62.8	134	28.6
HIV is airborne	84	17.9	296	63.2	88	18.8
HIV is waterborne	68	14.5	297	63.5	103	22
HIV can transmit through handshake	60	12.8	332	70.9	76	16.2
HIV can transmit through hugging	76	16.2	307	65.6	85	18.2
HIV can transmit through sharing food	175	37.4	192	41	101	21.6
HIV can transmit through cough/ sneeze	230	49.1	152	32.5	86	18.4
HIV can transmit through sharing cloth	104	22.2	265	56.6	99	21.2
HIV can transmit through sharing bed	89	19	264	56.4	115	24.6
HIV can transmit through sharing toilet	123	26.3	237	50.6	108	23.1
HIV can transmit through use of common shop	124	26.5	246	52.6	98	20.9
HIV can transmit through sweat	67	14.3	270	57.7	131	28
HIV can transmit through working together	22	4.7	375	80.1	71	15.2
HIV can transmit through mosquito bite	295	63	105	22.4	68	14.5
HIV can transmit by sitting beside a HIV infected person	64	13.7	326	69.7	78	16.7
HIV can transmit through touching an infected person	34	7.3	343	73.3	91	19.4
HIV can transmit through deep kissing a person who already infected with HIV	273	58.3	71	15.2	124	26.5
HIV can transmit through donating blood	182	38.9	216	46.2	70	15
HIV can transmit by using a public telephone	16	3.4	378	80.8	74	15.8
HIV can transmit when a person got tattoo	88	18.8	218	46.6	162	34.6

that sharing unsterilized instruments or personal items like toothbrushes with someone who is HIV infected can spread HIV/AIDS.

Table 3 shows the misconception regarding transmission of HIV/AIDS among the participants. Nearly fifty percent of the students thought that coughing and sneezing spread HIV. 58.3 percent of students believed that HIV infection spreads by deep kissing a person who is already infected with HIV. 38.9 percent of students thought that it is possible to get HIV infection after donation of blood. However, sixty-three percent of students had a misconception that HIV can spread by mosquitoes bite. Few of the study participants also opined that sharing toilet, eating food with HIV positive individuals, and sharing cloths with an HIV infected person may transmit the infection from one person to another.

Table 4 illustrates the knowledge about preventive measures of HIV/AIDS among the participants. Majority (more than 80%) of the participants, who have heard about HIV/AIDS, were aware of various preventive measures like condom use, blood safety, pushing injections with sterilized disposable syringes and needles and so on. More than fifty percent opined that sexual relationship with single non-infected partner decreases the chance of infection. 51.5 percent of the students were aware that medicine cannot cure an HIV infected person.

Table 5 depicts the knowledge of the study participants regarding availability of healthcare services. Only 27.8 percent were aware about government sponsored HIV testing centre (ICTC) and 47.6 percent are found to be aware that knowing own HIV status can help preventing HIV/AIDS. However, an overwhelming majority (>50%) of them do not know their own HIV status.

Table 6 shows the sources of information regarding HIV/AIDS among the girls. The principal sources of information regarding HIV/AIDS

Table 5: Prevalence (%) of knowledge regarding availability of healthcare services (N=468)

<i>Variable of healthcare services</i>	<i>Yes</i>
Knowledge about Government sponsored HIV testing Centre (ICTC)	27.8
Do you know that knowing your own HIV/AIDS status can help preventing HIV/AIDS	27.6
Do you know your HIV status?	44.7

Table 6: Prevalence (%) of sources of information regarding HIV/AIDS (N=468)

<i>Source of information</i>	<i>Percentage</i>
Television	47.6
Radio	9.8
Newspaper or magazine	30.1
Health professional	68.2
NGOs	6.2
Friends	48.3
Teachers	51.3
Parents	23.3
Road side play	11.3
Wall writing/Hoarding	20.1

were health professionals (68.2%). However, teachers (51.3%), friends (48.3%) and television (47.6%) are other important sources of their knowledge pertaining to HIV/AIDS. Newspaper or magazine, parents, wall writing or hoardings, roadside plays, radio and NGOs are some other sources from which they are getting information on HIV/AIDS.

DISCUSSION

HIV/AIDS infection is rapidly spreading in India. Poor awareness pertaining to this disease and cause of its spreading was thought to be the principal matter in rural parts of the country. The present small-scale study has tried to as-

Table 4: Prevalence (%) of knowledge regarding preventive measure of HIV (N=468)

<i>Variable regarding preventive measure of HIV</i>	<i>Having knowledge</i>	<i>Without knowledge</i>	<i>Not sure</i>
Knowledge about vaccine HIV infection	24.1	39.1	36.8
HIV can be cured by herbal medicine	8.5	51.5	40
Knowledge about safe sex	36.1	39.1	24.8
Condom use can decrease the chances of getting HIV infection	53.6	9.4	37
HIV can prevent by sexual relationship with single partner	51.1	9.8	39.1
HIV can prevent by blood safety	84.8	3.4	11.8
HIV can prevent by safe injection practice	86.3	4.3	9.4

sess the awareness level of the adolescents about HIV/AIDS in a rural area of Paschim Medinipur District of West Bengal. The study also measured the knowledge and perception of the schoolgoing adolescent girls' about HIV/AIDS.

The present study evidently showed that an overwhelming majority (more than 90%) of the students, though residing in a rural setting, had heard about HIV/AIDS, which is significantly higher than the prevalence (64.8% for rural adolescents) given by National Family Health Survey at the country level (NFHS 2006). Majority of the adolescents had correct knowledge about the modes of HIV/AIDS transmission. In the present study more than eighty percent were aware about the transmission of HIV/AIDS through sharing razor in a saloon, by sharing infected syringes, from pregnant women to her child or through breastfeeding. Nearly eighty percent were aware that HIV is transmitted through body fluids like blood, semen, vaginal secretion and breast milk and more than seventy-five percent opined that having sex with more than one partner increases the chance of getting HIV infection. An overwhelming majority of the participants are aware that a person may be infected if transfused with HIV infected blood. But only half of them knew correctly that sharing unsterilized instruments or personal items like toothbrushes with someone who is HIV infected can spread HIV/AIDS. The present study corroborates with a couple of studies among the Gujaratis, which showed a similar prevalence of awareness pertaining to the transmission of HIV/AIDS from one individual to another (Singh et al. 2009; Yadav et al. 2011). On the contrary, Chakrovarty et al. (2007) found less awareness regarding the transmission of HIV/AIDS among the higher secondary students of Kolkata. Another study conducted among secondary school children of Delhi showed that a substantial number of students are aware about the main sources of transmission of HIV/AIDS through unprotected sexual intercourse and using needles and syringes used by an infected person (Lal et al. 2008). Similar findings were observed in a study done amongst 2,400 secondary school students from Mumbai, in which only fifty percent of students knew about the sexual route of transmission of HIV/AIDS. However, in this study many were not aware of the fact that getting a tattoo also has a risk of acquiring HIV infection. Nearly 72.4 percent were aware that HIV could infect children also.

It has been found from the present study that the students have misconceptions about the transmission of HIV. Many of them (63%) opined that the infection might be transmitted through mosquito bites, which also corroborates with a study done by Singh et al. (2009). A few of the students have misconceptions that it can be transmitted by air and water, shaking hands and sharing food with infected persons and more or less, half of them (49.1%) have the idea that HIV can be spread by coughing or sneezing. The present study also showed similar findings pertaining to misconceptions about the transmission of HIV through mosquito bites, which has been shown by Das et al. (2016) in a recent study among the schoolgoing children of rural West Bengal. Such misconceptions were also evident from many studies done in many parts of India (Goyal and Bhardwaj 2003; Malle-shappa et al. 2012; Verma et al. 2014). These misconceptions regarding the transmission of HIV/AIDS are may be due to low literacy rates among the parents, as only about twenty percent of the students have reported that they have received any information regarding the infection from their parents. It has been observed that most of the parents do not communicate with their children freely and feel shy to consult regarding HIV/AIDS with them. Another reason of their misconception may be their hesitating conversation with other local people and also with their friends. They perceived that they do not have a clear concept about mode of transmission of HIV/AIDS and thus speak with their peers in a restricted way.

Though the data is not shown, it has been observed that the girls, who showed better knowledge about HIV/AIDS, were from the family where the parents have attained a better education. Majority of the students reported health education in their school by the health professional as the principal source of information regarding HIV/AIDS. Moreover, about half of the study participants also gathered information from their teachers. Information from television regarding the transmission of HIV/AIDS has also been evident from the present study, which corroborates with a study conducted in Delhi (Lal et al. 2008). Similar evidence has also been shown in another study among the senior secondary students of a government school in Chandigarh where television was found to be a principal source of information (Sodhi and Me-

hta 1997). A study conducted in Gujarat showed that the main sources of information regarding HIV/AIDS were friends (77.39%) and television (69.28%) (Singh and Jain 2009), which is also somewhat lies in the line of present study. Apart from promoting school-based AIDS education programs these findings imply that appropriate health related programs on television should be promoted as a significant source of information.

Awareness about different methods of prevention was found to be low. More or less half of the participants heard about safe sex practice and condoms being most important preventive modes. This finding was comparatively higher as compared to the findings by Das et al. (2016) and even higher than that of the school students of Delhi (Lal et al. 2008). The present study, on the other hand, shows less awareness regarding the use of condom as the best preventive measure than the studies done by others (Chakrovarty et al. 2007; Yadav et al. 2011). However, an overwhelming majority of the girls are aware that safe injection practices and blood safety are important preventive measures.

Removal of misconceptions among adolescents, adults, youth and the general population is very important. Else, it might lead to create a phobia among the masses. Discrimination of HIV/AIDS patients in the society has a negative impact on various healthcare programs. Scientific knowledge about HIV/AIDS is very much important for the adolescents, which will permit them to take right decisions regarding sexual life and how they can protect themselves against HIV infection. Thus, it is necessary to educate young people so that they can protect themselves from getting infected. Awareness and intervention programs pertaining to improvement of knowledge of HIV/AIDS has been recommended elsewhere (Sarma et al. 2017). Various government and non-government organizations (NGOs) around the world have undertaken programs to raise awareness among people regarding HIV/AIDS. To stop spreading of HIV/AIDS in India, the Tenth Five Year Plan (2002-2007) was developed with targets set to achieve ninety percent coverage of schools and colleges through education programs and eighty percent awareness among the general population in rural areas. Assessment of awareness level among the adolescents is important because it helps determine the impact of previous awareness and

prevention efforts made by the government and also to gauge the need for interventions.

CONCLUSION

In conclusion, the present study depicts a moderate level of knowledge among the high school students in Daspur II Block of Paschim Medinipur. Despite the presence of knowledge, a number of misconceptions and negative attitudes toward HIV/AIDS were also observed.

RECOMMENDATIONS

The study also suggests the necessity of classroom educational programs on HIV/AIDS and STDs and should include the school headmasters and other teachers. Repeated awareness programs should be organized to make the schoolteachers realize that school education is an effective solution to prevent the spreading of the HIV/AIDS epidemic. HIV counseling and screening test, public awareness programs, AIDS education programs by the government health agencies, group discussions, dramas, puppet shows and role-plays in or near school campuses can help to de-stigmatize the concept of HIV/AIDS. Initiation of sex education is very much necessary in secondary school curriculum to reduce the spreading of HIV/AIDS infection, which may decline the prevalence of death due to such infection.

ACKNOWLEDGEMENTS

The authors are indebted to the study participants for their unhesitating help in answering all the questions. The Department of Anthropology, Vidyasagar University is acknowledged for providing the logistical support.

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Paper received for publication on August 2017
Paper accepted for publication on December 2017