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### A study of adolescents knowledge regarding HIV/AIDS and its channels of transmission

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#### Abstract

**Aims/purpose:** The HIV/AIDS is undoubtedly the most devastating pandemic mankind has ever faced. Today, the global community seems to be struggling as the disease rips apart the social and economic fabric of the society by killing people in prime of their youth, rendering millions of children orphans and shattering homes and hopes alike. With remote prospects for a cure, the challenge to contain the spread of HIV has become imperative. Although no culture or community is known to be immune to AIDS yet, certain populations are more vulnerable to the disease because of their high-risk behaviours. Adolescents are the most at – risk group for such types of disease than others. The present study was attempted to assess the mode of transmissions among 13 to 17 years old adolescents girls.

**Methodology of study:** The total sample for the present study included 400 adolescents i.e 200 from deferent girls high schools and 200 from women's colleges which are the most of HIV prevalence blocks of the Ganjam district of Odisha state. By using exploratory and the descriptive study design, the researcher attempts to describe female adolescents' knowledge and understanding regarding HIV/AIDS, and the channels of transmission. A scheduled questionnaire was used covering all aspects of HIV/ AIDS and observation methods were also used to collect the data from the adolescent girls. To analysis data the researcher used frequency percentages and the t- tests were computed.

The study revealed that majority of adolescents girls have higher 31 percents of then report the channels of transmissions though sexual intercourses and which is correct answer over all the report of the study indicates that that knowledge about mode of HIV transmission is still poor among the adolescent girls.

**Conclusion and Recommendation:** The present study will help to focuses of adolescents level of knowledge to import for better life for better future because adolescents are the really dormant stat of mind regarding HIV/AIDS the need extra guide line to increase coping skills and need for adequate support system. Right knowledge right action right time can change the life of an individual as well as the society.

**Keywords:** Knowledge, HIV/AIDS, adolescents and transmission

#### Introduction

Adolescents period is the ink with which they curb the course of their life. This period is marked by changes in the person of all developmental dimensions, heightened social expectations, new roles, and uncertainties. It is phase marked by evolving sexuality. They tend to become idealistic and interested in deriving own theories. They like to make their own decisions. They have high emotional sensitivity and the attraction towards opposite sex is on the rise as a natural corollary of growth (Pushpalatha and Sasikala, 2015) [16]. The physical changes that occur at pubescence are responsible for the appearance of the sex drive. The gratification of sex drives is still complicated by many social taboos, as well as by a lack of accurate knowledge about sexuality. Despite their involvement is sexual activity, some adolescents are not interested in or knowledgeable about, birth-control methods or the symptoms of sexually transmitted diseases. Consequently, the rate of illegitimate births and the incidence of venereal disease are increasing.

Adolescence is a transition period from childhood to adulthood spanning age 10 to 19 years. Currently, the world's adolescent population is 1.2 billion. This unprecedented number of adolescents will ensure continued population growth for decades to come, even as family sizes get smaller. An increased world population brings its adolescents increased poverty, decreased access to health-care services, decreased access to education and decreased economic

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opportunity. Adolescence is a period of deep emotional changes. Adolescence is also the period of experimentation, which express the youth to health risks through drugs, alcohol, tobacco use, irresponsible sexual behavior, etc. (Prabhakar, *et al.*, 2009).

**Knowledge Regarding:** Adolescent's knowledge about HIV/AIDS is important especially when it is considered a major challenge posing threat to their development. Lack of knowledge about HIV/AIDS regarding the basic knowledge and its transmissions, may lead to risky sexual behaviour resulting into HIV or the opportunistic infection.

**The nature of the virus:** HIV selectively infects specific white blood cells CD4 that are an essential part of the body's immune defense system. HIV attacks and inactivates these particular kinds of white blood cells. The CD4 helper cells are vital in controlling the body's defense to many diseases. The CD4 helper cells stimulate the production of a large army of white blood cells to fight the infection. The few diseases that do occur in such people can be treated. As more and more CD4 cells destroyed, the efficacy of this treatment is reduced, and so treatment becomes harder to maintain. When the CD4 cell counts falls to 200 or less then the individual develops AIDS. When the CD4 cells are destroyed, the infected person becomes susceptible to range of opportunistic infectious diseases and cancers and the group of such conditions is called AIDS. HIV may also directly infect nerve cells and cause neurological disorders. HIV takes a long time to cause damage. HIV infection is presumed to be live long and the infected person is likely to remain infectious for life (NACO-2008).

**Consequence of HIV/AIDS:** HIV (Human immunodeficiency virus) major public infection has now spread to every country in the world and continues to be a health issue. Statistics show that approximately 40 million people currently living with HIV infection and an estimated 40 million have died from this disease since the beginning of the epidemic. The scourge of HIV has been particularly devastating in sub-Saharan Africa which account for almost 70% of new HIV infections globally. However, infection rates in other countries also remain high. In the United States, approximately 1 million people are currently infected, about 50,000 new HIV infections per year. In 2012 an estimated 156 youth died, out of 1% of the 13,712 people who died that year. Sub-Saharan Africa continues to have the highest number of HIV/AIDS cases, with close to 70 percent of the global total of HIV positive people. A vast majority will die in the next 10 years or so due to the infection and the existing poor socio-economic condition of that region (UNDP 2012). In Odisha 1276 died and in Ganjam 421 died due to HIV/AIDS (ICTC- REPORT-2012).

**Knowledge regarding channels of Transmission of HIV/AIDS:** Knowledge regarding channels of transmission of HIV/AIDS new studies from across the globe established that the vast majority of young people have no idea how HIV/AIDS is transmitted or how to protect themselves from the disease. HIV/AIDS can be transmitted from person to person only if the body fluids like blood, semen and vaginal fluids come in contact with body fluids of an HIV infected or AIDS patients. The causing virus is not transmitted through the air, casual contact, by insects, by food or water. Important thing is to have correct knowledge, take essential precautions and save life from AIDS (UNAIDS 2002).

Several studies conducted on Indian adolescents have found that many male adolescents are sexually active and are likely to indulge in unsafe sexual activities making them vulnerable to STDs including HIV infections (Prabhakar 2009). Children vulnerable to HIV infection may fall under one or more of the following categories: street children, working children, children of sex worker, trafficked children, runaway children, abandoned children, sexually abused children, sexually active children, children using substances and orphans. Bi sexual men who have sex with men (MSM) and injecting drug user (IDUs), sex worker or migrants labourers. Sexual minorities including people who are lesbian, gay, bisexual, and Transgender (LGBT) and covers men, women and all those who don't identify either as men or women (that is transgender). Among the transgender are Hijras, Hijras are essentially biologically born males who don't not identified as men and prefer to identify as women (Rama Murti, 2008).

**Mode of Transmission:** HIV has been isolated from the body fluids of infected persons, including saliva & tears. However, only blood, semen, vaginal infections, and breast milk has been implicated in transmission. Detailed epidemiological studies throughout the world have documented only three modes of transmissions: sexual, parental and mother-to-fetus/infant. The acquired Immune Deficiency Syndrome (AIDS) and the entire spectrum of disease has become a problem of intense international interest. The causing virus is not transmitted through the air, casual contact, by insects, by food or water. Modes of transmissions are:

Worldwide, sexual intercourse is the most frequent mode of transmission of HIV. The virus can be transmitted from an infected person to his or her sex partner (man to woman, woman to man and man to man). Women are more at risk of getting the infection than men. During sexual intercourse (vaginal, anal, and possibly oral), damage to the linings of sexual organs such as vagina or rectum can facilitate transmission of HIV from the infected partner to the uninfected only by exchange of body fluids. The virus is also transmitted during vaginal intercourse (NACO 2007). Both male and female partners can be infected in this way. Risk is equal for both men and women. Usually sexually transmitted diseases as stated are more readily transmitted from men to women than from women to men. It is also not clear how readily the virus is transmitted during vaginal intercourse or what are the chances of infections associated with a single act of intercourse with an infected person. In both vaginal and anal intercourse using a condom or vaginal contraceptives reduces the chances of transmission (Alexis *et al* 2012). It is not known whether getting or other sexual practices, such as oral genital contact or kissing, transmit the virus less. Since HIV is found in semen and sometimes in saliva, and since oral-genital contact transmits other infections, most infectious disease experts recommend avoiding these and any other practices that might be transfer by body fluids. Hetero sexual intercourse may be the major route of HIV transmission in developing countries (IGNOU 2011). Theoretically, the best way to avoid sexually transmitted HIV infection is to avoid intercourse with any unknown person. Since it is usually not possible to identify such persons by their appearance, sexually abstinence or consistent use of condoms and vaginal cream offers the best protection (Sethy 2007) <sup>[24]</sup>.

**Transmission through Blood and Blood Products Transfusion:** Some blood components transmit the virus. Red blood cells, plasma, whole blood, and clotting factor of blood

may contain the virus. Other product prepared from blood is albumin, globulin (gamma globulins), and hepatitis – B Vaccine which have not been shown to pose any risk. The process of separating and manufacturing these products from whole blood inactivates the virus (Mohanta 2008) [5]. In 1998 about 60% HIV patient were blood transfusion related. Most of these people were women. Who had been subjected to transfusion for anemia? As a medical practitioner can play a part in at least preventing the spread of infection (NACO 2011).

**Transmission by sharing Contaminated Needles by Intravenous Drug Users (IDU):** Drugs users, who injected drugs into their veins, are another population group at high risk and with high rates of infection by the AIDS virus. Users of intravenous drug make up 25 percent of the cases of AIDS throughout the country. The AIDS virus is carried in contaminated blood left in the needle, syringes, or other drug related implements and the virus is injected into the new victim by reusing (infected) dirty syringes and needles. Even the smallest amount of infected blood left in a used needle or syringe can contain live AIDS virus to be passed onto the next user of those dirty elements. Drugs users are addicted due to poor health, family disruption, emotional disturbances and sexual disruption either or one reason or another, but they are not going to be changed in their behavior. A part from it by sharing razor and tooth brushes. AIDS virus can be infected in new victim by two reasons. One that blood is a good media which can be transmitted by erosion of mucous membrane of anal cavity or skin of face and secondly saliva is the media for transmission (NACO 2012).

**Maternal – fetal transmission (mother-to-child transmission):** The infected mother can transmit the infection to the baby in the womb or at birth through exposure to infected maternal blood or after birth through breast feeding. The risk of transmission from the infected mother to the baby is not exactly known. It is expected due to high concentration of virus in the blood through infected maternal blood during pregnancy or transfusion of infected blood to the mother during pregnancy and child birth or through breast feeding. This means that one to two percent of newborn babies are already being infected with HIV. The proportion of those who will subsequently develop AIDS and the impact that infection with the virus has on the general health of these children are still being closely studied (OSACS 2012).

**Attitude of the Health Personnel:** Alpanasagar public health analysisist raised issue of the health care needs of HIV positives person's, their relationship with the structure of the health system and health sector reform the attitude of the health personnel and the burden of women by reliance on community care.

### Methodology

**Statement of the problem:** A problem statement is the description of an issue currently existing which needs to be addressed. It provides the context for the research study and generates the questions which the research aims to answer. The statement of the problem is the focal point of any research. A good problem statement is just one sentence (with several paragraphs of elaboration). Over 1,400 people have lost their lives due to AIDS in Ganjam district in the last 14 years as per the latest figures released by Odisha State AIDS Control Society (OSACS-2013), the State-level nodal agency

for fighting the dreaded disease. By the end of October, 12,307 persons in the district were identified as HIV positive while 1,404 persons succumbed to AIDS between 2000 and 2014. As per the reports of 'ARUNA', (a social service non-governmental voluntary organization) working for prevention of AIDS, majority of PLWHA (People Living with HIV/AIDS) are from rural Ganjam district. Large scale migration, ignorance, low female literacy, inadequate prevention activities, stigma and discrimination are the reasons behind the spread of AIDS in the state. Adolescents in India are highly vulnerable to human immunodeficiency virus (HIV) acquired immunodeficiency syndrome (AIDS) and other sexually transmitted infections (STIs) (Hemalata *et al.* 2011) [13].

Present study is an attempt to understand female adolescents' knowledge, regarding the channels of transmission and regarding HIV/AIDS. By this study the researcher desires to understand female adolescents' level of knowledge, their attitude and practices towards HIV/AIDS, and also help them to improve on healthy sexual behaviour so that their vulnerability to the risk of HIV/AIDS will be reduced.

### Significance of the study

The health of adolescents has become a subject of increasing importance throughout the world. This is especially true with regard to their sexual health. Adolescent females experiencing early sexual debut are always been at greater risk of contracting HIV/AIDS. Adolescents become sexually active without knowing the facts and risks involved in it for its short term and long term health effects. This study helps in analyzing the knowledge base of female adolescents, their attitude towards the infection and also the current practices contributing to vulnerability to HIV/AIDS and helps in reducing such vulnerability among the female adolescents.

### Scope of the study

The present study was conducted in both the rural and urban areas of Odisha. Adolescent girls enrolled for education in the girls' high schools and +2 Junior colleges are studied. Data pertaining to adolescents' knowledge, towards HIV/AIDS and its Transmission. The age group of the respondents is between 14 to 17 years. The study includes only female adolescent girls. The study will aid in understanding their knowledge, of HIV/AIDS and also gives scope for generating awareness among them. This study provides the scope for suggesting measures to overcome the serious issues that affect adolescents in terms of contracting HIV/AIDS. The study also extends its scope for enabling adolescents to be protected against the transmission of HIV/AIDS by improving upon their knowledge.

### Objectives

1. To study the To study the socio-demographic profile of the adolescent respondents;
2. To assess knowledge pertaining to HIV/AIDS among adolescent girls.

### Research Design

The formidable problem that follows the task of defining the research problem is the preparation of the design of the research work, popularly known as the "Research Design". A research design is the arrangement of conditions for collection and analysis of data in manner that aims to combine relevance to the research purpose with economy in procedure. For this study the researcher has adopted exploratory study and the

design adopted to carry out this research is the descriptive design. By using this design, the researcher attempts to describe female adolescents' knowledge and understanding about HIV/AIDS. Knowledge regarding HIV/AIDS where including respondents basic knowledge of the HIV/AIDS' and it's channels of transmission.

**Universe of the study:** Ganjam alone contributes 38 percent of the state's PLHIV and 37 percent of AIDS deaths. Latest figures from Odisha State AIDS Society estimate HIV infections among 7637 people, of whom 281 are from ANC centers, and 531 are children, while AIDS related deaths are reported to be 461 2015. There is a huge proportion of males who migrate to Gujarat, Andhra Pradesh, Maharashtra, and Uttar Pradesh for work in shipyards, mills and diamond cutting industries, leaving behind their spouses/wives in Ganjam. Ten community health centers and 15 primary health centers are distributed across the district in different blocks. There are five ART centers in the state of Odisha, including one at the M.K.C.G. Medical College in Berhampur, the district's major city, and another four link centers in the district recently introduced by the state AIDS society. Ganjam district has 26 functional individual counseling and testing centers (ICTCs) (Das 2012). Which was conservative, backward and more prevalence of HIV/AIDS district of the state had special significance in this study.

Aska and Bhanjanagar blocks selected for the study which is most HIV prevalence blocks in these both blocks there is no train root but Berhampur is the nearby railways station which is Major transit point for out migrants in Odisha This station is known for its labour traffic and collection of high revenue to East Cost Railways. And also it is import points for migrants who all are landless and marginal farmers as well as workers the notorious 'Dadan' which is the association of

unemployed poor young mass.

**Sampling Procedure:** There are a total of 22 blocks in Ganjam district among them 12 blocks have reported HIV/AIDS cases. Aska reported the most prevalence of HIV/AIDS. The researcher decided to study 2 blocks under the age group 13-17years are available. They are Aska and Bhanjanagar. As per the latest reports, out of the 14 districts of the country most affected with the AIDS/HIV the Ganjam district is being placed eighth and has been graded 'A' status as more than one percent people of the total population are infected with HIV. Bhanjanagar is the neighbor block of Aska, it is also reported one of the prevalence block of Ganjam district is having 152 positive cases and hot spots are available. While the main Anti Retroviral Treatment (ART) centre is functioning at MKCG Medical College and Hospital here are four link centers at Aska, Bhanjanagar, Khallikote and Polasara. "The move will help in the regular check-up and treatment of these children at the ART centers" the (District Collector, Ganjam, 2011). Considering the fact that these geographical areas are occupied by people with lower level of literacy and also living below poverty, the risk associated with HIV/AIDS infection to significantly higher these two blocks have been chosen for this present study. Aska is the highest no. and Bhanjanagar is the 2<sup>nd</sup> highest blocks in the district as the prevalence status. The universe of the study comprises all female adolescents between the age group of 13 -17 years. They are students admitted for education in IX, X, XI and XII in Govt. schools and +2 junior Colleges of Ganjam Dist. of Odisha state. There is a mix of students from tribal, rural, coastal villages, town or city; with a mixed culture components comprising this universe the names of Institutions and particulars of these universe and samples are clearly given in Table 1.

**Table 1:** Distribution of Universe and Sample.

Dist	Blocks	Schools/ Colleges	Universe	Percentage	Sample
Ganjam	Aska	Govt. Girl's High School	250	40%	100
		Niranjan Women's College	250	40%	100
	Bhanjanagar	Govt. Girl's High School	250	40%	100
		Sabitri Devi Women's College	250	40%	100
			1000		400

The total number of units in the universe of this study comprises 1000 female adolescents. The population is further stratified in to different strata constituting the schools to which this adolescent belongs. A sample of 25% is drawn from different strata chosen from the universe. The size of the sample selected for this study is 400. Hence proportion wise considering the sampling technique applied is proportionate in nature. The list of students from each institute, that projects the universe, was collected and then every 5<sup>th</sup> student constitutes the chosen sample and was interviewed. This selection of every 5<sup>th</sup> person from the sample is systematic sampling under the random sampling design. To sum up, this study adopts the proportionate stratified random sampling design.

Respondents are true representations of the female adolescent population. Therefore, the results of this study can be generalized to a larger population of female adolescents. The study thus was conducted in 2 govt. Girls high schools and 2 junior colleges 2 women's colleges located in the 2 prevalence blocks of Ganjam District. Further, the investigation found that these places as most suitable and convenient for conducting the investigation which is

presumed to bring accuracy in the data to be collected.

### Analysis of Data

All relevant collected data were tested and processed through the Statistical Package for Social Sciences (SPSS). Simple tables were made so as to make comparison between variables possible. Statistical tests such as t-test was applied so as to test the research hypothesis and thereby arrived at better conclusion. The analyzed data was presented in a scientific manner that gives better easy understanding to all concerned with this research.

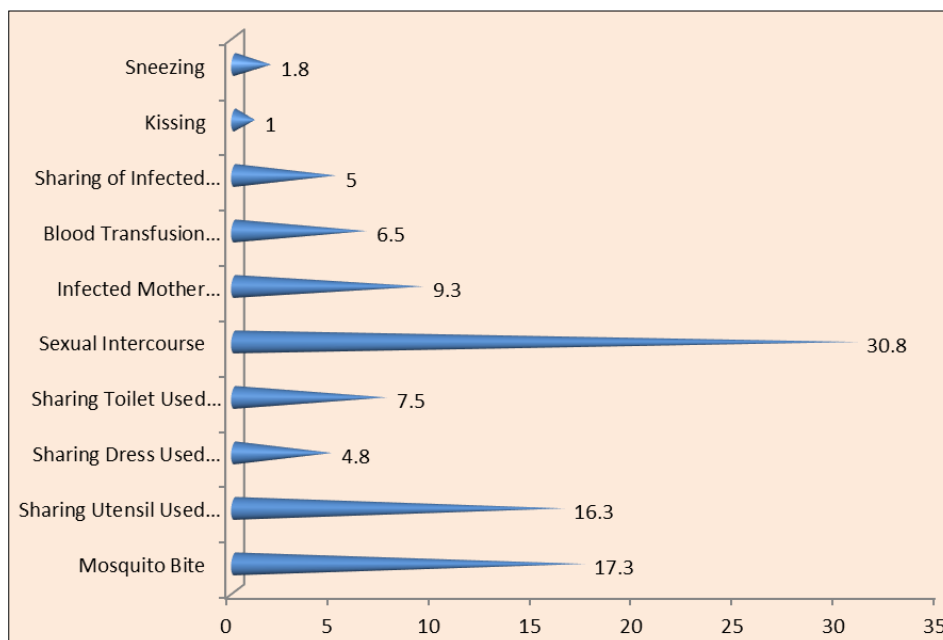
### Results and discussion

The findings of the study were done based on the objectives and hypotheses of the study. The results of the present research derived through the use of interview schedules. All the data were coded and transformed to a master data sheet for computer programming. Statistical Package for Social Sciences (SPSS) was used for descriptive statistics and for testing relationship between variables using tests of significance correlations test and the findings of the study is both descriptive and analytical.

**Table 2:** Knowledge regarding channels of transmission of HIV/AIDS.

S. No	Channel of Transmission	Frequency (N=400)	Percentage (%)	't' Test
1.	From one Person to Another			
	Mosquito Bite	69	17.0	
	Sharing Utensil Used by HIV Person	65	16.0	
	Sharing Dress Used by HIV Person	19	5.0	
	Sharing Toilet Used by HIV Person	30	7.5	
	Sexual Intercourse	123	31.0	
	Infected Mother to Child	37	9.0	
	Blood Transfusion with Infected Blood	26	6.5	3.06*
	Sharing of Infected Needles and Syringe	20	5.0	
	Kissing	04	1.0	
	Sneezing	07	2.0	
	Right answer	206	51.5	
	Wrong answer	194	48.5	
2.	Vulnerable population for HIV AIDS Infection			
	Migrant Worker	156	39.0	
	Low Status of Women	74	18.5	3.35*
	Prisoners	19	4.8	
	Adolescents	58	14.5	
	Street Children	29	7.3	
	All the Above	64	16.0	

Note:\* 0.01 level of significant.

**Fig 1:** Channel for HIV Transmission from one Person to Another.

With regard to respondents' knowledge about the channels for HIV transmission, it is observed from the above table that 31% percent of them reported the channels of transmission through sexual intercourse, while 9.0 percent of them reported as infected mother to child, 6.5% of the respondents reported it to be transmission of infected blood.

On the other hand 17 percent of the respondents reported mosquito bite as channel for HIV transmission and 16.3 percent reported as sharing utensils used by HIV person; 12.5% reported sharing dress and toilet used by HIV person. This shows that knowledge about mode of HIV transmission is still poor among the adolescent girls continuing their education in the urban based schools and colleges of Ganjam District.

The above table also shows the respondents knowledge about different vulnerable groups to HIV infection. It is seen that 39 percent of the respondents perceived migrant workers to be the vulnerable groups while 18.5% of the respondents reported that women living in low status as the vulnerable

groups and this reveals that the respondents do not have adequate knowledge about the groups of people vulnerable to be infected by HIV. Whereas only 16% results have given by the respondents and which is the hundred percent right answers.

HIV does not spread like a cold and is therefore relative difficult to catch. No one case has been reported of HIV being transmitted by contact with air, tears, sweat, shaking hands, hugging, coughing, sneezing, using swimming pool, toilet seats, sharing towels, bed, linen, utensils, being bitten by mosquitoes or other animals, or any other form of everyday contact. Saliva, uncontaminated by blood, has not been implicated as a mechanism of transmission.

### Conclusions

Adolescents are an important part of the population, yet they are not properly addressed. Adolescents should not be isolated and sheltered from issues such as sexuality and reproductive health since they are at an age when they may begin

experimenting and could be misguided and confused in their choices. External factors have a tremendous impact on how adolescents think and behave. These include: social environment, family, peer pressure, educational opportunities, career opportunities, social status, recreational activities and so on.

- Knowledge about mode of HIV transmission is poor and interestingly (28%) of adolescent respondents had no idea about what is condom, its use or availability whereas (49.5%) do not have adequate knowledge about treatment.
- Knowledge about mode of HIV transmission is poor among the adolescent's girls continuing their education in the Ganjam District.
- This study conducted on the adolescents, it has been noticed that most of the adolescents tend to be largely unaware of human sexuality and reproductive health. So their knowledge on HIV/AIDS is incomplete and insufficient to live a healthy life without being helped by various different community setting with the help of the peer educators.
- Adolescents' awareness level of the issues related to health, nutrition and family life is low. The rigorous efforts made by the NGOs, Govt. Organizations, international agencies and mass media, etc. have been able to generate some awareness of HIV/AIDS. But the understanding of the causes, modes of transmission and preventive measures, treatment of HIV/AIDS is still low.

### Recommendations

The adolescent girls in schools or out of schools do not have access to sex education which sometimes leads them towards risky behavior. The teachers are also not so comfortable and competent enough to provide sex education to the students, and especially to adolescent girls. Sexual health being a sensitive issue in the traditional society; it is neither the parents nor the teachers who feel comfortable in providing education to the adolescent girls on sexual and reproductive health. Thus the knowledge could be imparted in different community setting with the help of the peer educators.

### Implications of the present study

It has been noticed that most of the adolescents tend to be largely unaware of their sexual health and reproductive system. In India youth is not a homogenous group and different sub-populations of young people are exposed to different risk settings. Thus, the risk perception and behavior of the young people (13-35) are likely to determine the future direction of HIV/AIDS in the country.

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