



## Assessment of Knowledge, Attitude and Practice of HIV/AIDS Among Adolescents :A Comparative Study of Two Districts of Punjab

Onam Gupta<sup>1</sup>, Dhruvendra Lal<sup>2</sup>, Tanvir Kaur Sidhu<sup>3</sup>

<sup>1</sup>Under Graduate Student MBBS, <sup>2</sup>Post Graduate Resident, <sup>3</sup>Professor, Department of Community Medicine, AIMSRS, Bathinda, Punjab.

### Abstract

**Background** : Adolescence is a transitional stage of physical and psychological and behavioral changes, thus bringing about transformation from childhood to adulthood and from the period of puberty to legal adulthood (age of majority). Physical growth and development are accompanied by sexual maturation; often leading to intimate relationships. Adolescents represent a rapidly growing share of people living with HIV worldwide. In 2014, about 2.0 million adolescents between the ages of 10 and 19 were living with HIV worldwide. Adolescents account for about 5 per cent of all people living with HIV and about 12 per cent of new adult HIV infections. As per WHO HIV is 2nd leading cause of death among adolescents. In Dist. Ferozepur 71158 people have been tested out of which 875 i.e. 1.23% are found to be positive till Feb 2014. Although the government of India conducts HIV Sentinel Survey annually to monitor outcomes and impacts of national efforts and monitor trends in HIV prevalence amongst the major population groups hence school education has been described as a 'social vaccine'. **Materials and Methods:** A cross-sectional study was conducted among adolescents (14 to 19 years) in randomly chosen co-educational schools in District Ferozepur and District Bathinda. Adolescents from 14 to 19 years in randomly chosen schools were included in the study. Pre-designed, pre-structured, pre-tested questionnaire was introduced to the participants by interviewer in English and Hindi. Privacy of the schools and the participants was maintained by not mentioning their names anywhere in the study. Data was collected regarding Knowledge, attitude and practice regarding HIV/AIDS. **Results:** A total of 370 adolescents from District Ferozepur and 401 adolescents from District Bathinda were enrolled in our study. All the adolescents i.e. 100% (District Ferozepur) and 99.8% (District Bathinda) had heard name of HIV/AIDS. TV, internet and moral education in school were the main source of information. Large number of adolescents knew that sexual contact could be the mode of transmission of HIV/AIDS. Many of them, 78.1% (Dist. Ferozepur) and 71.82% (Dist. Bathinda) knew that HIV/AIDS could be prevented by using condoms. A few adolescents had history of previous sexual exposure out of which 8 (Dist. Ferozepur) and 48 (Dist. Bathinda) used condoms. The comparison made between the knowledge, attitude and practice of HIV/AIDS among the adolescents of Bathinda and Ferozepur was found to be statically significant. **Conclusion:** Various interventions at different level is required to awareness regarding HIV. This could be achieved through incorporation of information regarding HIV, its transmission, and prevention into their schools' curricula, indulging them in IEC activities, by Red cross training and educating, and motivating parents to increase knowledge regarding HIV/AIDS among their children as they can play an important role in providing the information. This would help in transmission of accurate information at the grass root level and would thus aid us in reducing the misconceptions and myths regarding HIV.

**Keywords:** HIV/AIDS; Adolescents; Knowledge; Attitude and Practice.

**Corresponding author:** Onam Gupta Under Graduate Student MBBS, AIMSRS, Bathinda, Punjab.  
Email: [ogonamgupta66og@gmail.com](mailto:ogonamgupta66og@gmail.com)

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## INTRODUCTION

Adolescence is a transitional stage of physical, psychological and behavioral changes, thus bringing about transformation from childhood to adulthood and from the period of puberty to legal adulthood (age of majority). Physical growth and development are accompanied by sexual maturation, often leading to intimate relationships<sup>(1, 2)</sup>. As per 2011 there are 7.2 billion people in this world, out of that 1.2 billion lives in India<sup>(3)</sup> and 243 million i.e. 20.9 per cent of the population are adolescents, between 10 to 19 years<sup>(4)</sup>. As per WHO In the early stage (10–13 years), independence-dependence struggles are heralded by rapid physical changes with the onset of puberty (8–11 years in females and 9–11.5 years in males). The middle stage (14–16 years) is characterized by an increased scope of feelings, and increased importance of peer group values and more risk-taking behaviors. The late stage (17–19 years) represents emerging adults who have successfully transitioned into accepting responsibility for their behaviors<sup>(5)</sup>. The primary drivers of the HIV epidemic in India are unprotected paid sex/commercial sex work (87.1%), unprotected anal sex between men (1.5%) and Intravenous Drug Users (IDUs) (1.6%). Apart from that, 5.4% accounted for parent to child transmission of the infection (PTCT)<sup>(6)</sup>. Adolescence is a phase of experimentation and risk that includes early sexual debut, sexual coercion and violence, trafficking, and substance abuse. Along with these, other factors such as the lack of knowledge about HIV/AIDS, inaccessibility to healthcare services and commodities, lack of education and life skills, and early marriage have increased their vulnerability to HIV/AIDS. With growing urbanization, liberal attitudes and mingling of both genders in school and social contexts, there is an increasing opportunity for boys and girls to party together and also consume alcohol.<sup>(7,8,9)</sup> Such occasions are known to increase the likelihood of their indulgence in sexual activity.<sup>(10)</sup> The Centers for Disease Control and Prevention (CDC) estimates that 26% of the approximately 50,000 new HIV infections diagnosed in 2010 were among youth 13 to 24 years of age.<sup>(11)</sup> Adolescents and young people represent a rapidly growing share of people living with HIV worldwide. In 2014, about 2.0 million adolescents between the ages of 10 and 19 were living with HIV worldwide. Adolescents account for about 5 per cent of all people living with HIV and about 12 per cent of new adult HIV infections. Regions with the

highest numbers of HIV-positive adolescents are sub-Saharan Africa and South Asia. Every hour, 26 adolescents (15-19) were newly infected with HIV in 2014 (220,000 total)<sup>(12)</sup> Whereas in Punjab the estimated adult cases (PLWHA) as per 2011 estimation is 31,961 i.e. 0.18% and in Dist. Ferozepur 71158 people has been tested out of which 875 i.e. 1.23% are found to be positive till Feb 2014.<sup>(13)</sup> In terms of HIV positivity, the proportion of males was more as compared to females. Also, males who test positive rarely divulge their HIV serological status to their partners or spouses thereby making females oblivious to the transmission risk<sup>(14)</sup>. Adolescents often encounter difficulties of a more personal nature, such as, dealing with their sexuality and peer pressure<sup>(15)</sup>. Thus, they are gullible and ready to experiment making them more vulnerable to HIV. Also, issues like sex and sexual behavior are still tabooed subjects for discussion between parents and children and even in a formal set-up between teachers and students in many parts of India. Hence, adolescents are likely to have more misconceptions and be misinformed, and in the long run, pose risk of HIV/AIDS<sup>(16)</sup>. Many school-going children may be victims of sexual abuse<sup>(17)</sup>. Since India has emerged as a major player in the global HIV epidemic, and given the importance of adolescents in the Indian epidemic, the lack of information on knowledge, perceptions, and behaviors regarding HIV risk and preventive behaviors among Indian adolescents is alarming<sup>(18)</sup>. Despite the high prevalence of HIV/AIDS, it has been reported that many adolescents do not know the modes of transmission of this disease. Program managers and policy makers have often recommended that schools can act as the center point for disseminating information and education on HIV/AIDS. Hence school education has been described as a 'social vaccine', and it can serve as a powerful preventive tool. In India, there is a wide gap between the inputs in the HIV/AIDS curriculum for schools and the actual education that is imparted<sup>(19)</sup>. They are a rich human resource and an important part of the development process. Good health of adolescents will help in raising the health status of the community. Ironically, very little work has been done to comprehend the nature of the epidemic in Asia, especially in India which harbours the third highest HIV-affected population in the world. Although the government of India conducts HIV Sentinel Survey annually to monitor outcomes and impacts of national efforts and monitor trends in HIV

prevalence amongst the major population groups<sup>(20)</sup> Aim of the present study to assess knowledge, attitude and practice regarding HIV/AIDS in adolescen.

## MATERIAL AND METHODS

A cross-sectional study was conducted among adolescents (14 to 19 years) in randomly chosen co-educational schools in District Ferozpur and District Bathinda. Adolescents from 14 to 19 years in randomly chosen schools were included in study. Consent was taken from the individual school principals to conduct the study. Also informed verbal consent was taken from the participants. Predesigned, prestructured, pre tested questionnaire was introduced to the participants by interviewer in English and Hindi. Privacy of the schools and the participants was maintained by not mentioning their names anywhere in the study. To calculate sample size following formula was used:

$$\text{Sample size (n)} = 4pq/L^2$$

Where: n: Sample size

p: expected prevalence or proportion

$$q: 100 - p$$

L: permissible error (here 5%, i.e. for 95% confidence limit)

Prevalence of awareness about HIV/AIDS according to KAP study conducted among high school students in Municipal Corp. School, Pune by Pankaj Kumar et al was 63%. So using the above formula our sample size comes out to be 372.96 (373). Adolescents (9<sup>th</sup> to 12<sup>th</sup> class) who were given permission by the school to participate in this survey were included in the study and adolescents who were absent during the time of study and adolescents reluctant to participate in the study were excluded. The data was analyzed using MS Excel.

## RESULTS

A total of 370 adolescents from Ferozpur, out of which 176 were males and 194 were females and 401 adolescents from Bathinda out of which 282 were males and 119 were females from enrolled in our study. All the adolescents from District Ferozpur and 99.8% from District Bathinda had heard name of HIV/AIDS. TV in 74%, moral education in school in 68.9% and internet in 68.4% was the medium of information in District Ferozpur (Fig 1) as compared to 74.8% (TV),

54.36% (moral education) and 61.6% (internet) in District Bathinda (Fig 2). A small number of adolescents (8.1%) from District Ferozpur and 30.7% from District Bathinda thought HIV and AIDS were same and the difference in knowledge between the two districts regarding the terms HIV and AIDS was highly significant ( $p < 0.001$ ) (Table 2). 60.8% of adolescents said that they had been imparted sex education in school and the association between the sex education in school and the knowledge regarding the terms HIV and AIDS was not significant ( $p > 0.05$ ). 20.3% adolescents were imparted sex education at home and 49.6% were imparted sex education in school in District Ferozpur. In contrast a very small number i.e. 18.7% were imparted sex education at home in District Bathinda. Large number i.e. 91.6% adolescent knew that sexual contact could be the mode of transmission of HIV/AIDS. 88.6% of male adolescent & 94.3% female adolescents from Ferozpur (Figure 3) and 87.6% of male adolescent & 79.8% female adolescent from Bathinda (Figure 2) knew that sexual contact could be the mode of transmission of HIV/AIDS. Male adolescents had more knowledge regarding sexual contact as mode of transmission ( $p < 0.05$  significant) and the difference in knowledge regarding sexual contact as a mode of transmission between Bathinda and Ferozpur was highly significant ( $p < 0.01$ ) (Table 2). 78.1% from Ferozpur and 71.82% from Bathinda knew that HIV/AIDS could be prevented by using condoms and the association between the knowledge of sexual contact as a mode of transmission and its prevention by using condom was significant ( $p < 0.05$ ) in District Ferozpur. 64.6% adolescents in District Ferozpur and 56.36% adolescent in District Bathinda knew HIV/AIDS could be avoided by remaining faithful to their single partner. 9 (2.4%) adolescents had previous history of sexual contact out of which 8 (2.2%) used condoms in Ferozpur. On the other hand, 52 (12.9%) adolescents from Bathinda had history of previous sexual exposure out of which 48 (11.9%) used condoms. The difference in history of sexual contact and the use of condom between the two districts were both found to be highly significant ( $p < 0.001$ ) (Table 3). 21.1% adolescents didn't know that IV drug users were at high risk of getting the disease, but 91.9% had knowledge that HIV/AIDS could be prevented by not sharing needles, syringes and razor blades in Ferozpur and 0.8% (3 adolescents) were indulged in sharing the same. In District Bathinda, 83.64% of adolescents had the knowledge that HIV/AIDS could be

prevented by not sharing needles, syringes and razor blades. The difference between the number of adolescents sharing needles, syringes in Bathinda and Ferozpur was found to be extremely significant ( $P < 0.001$ ) (Table 3). Large number of adolescent i.e. 96.2% in Ferozpur and 89.8% in Bathinda said that HIV/AIDS could be transmitted by blood transfusion and 86.2% (Ferozpur) and 72.81% (Bathinda) knew that the disease could be prevented by prior blood testing and the association between the knowledge regarding transmission and prevention by blood transfusion and testing was extremely significant ( $p < 0.001$ ). 23.8% adolescents (Ferozpur) and 43.4% adolescents (Bathinda) had the misconception that HIV/AIDS could be transmitted by eating, drinking from same plate/glass of the infected person. 88.9% (Ferozpur) and 83.3% (Bathinda) said that they would continue friendship with a HIV+ve friend, the difference in attitude between the adolescents of two districts was significant ( $p < 0.05$ ) (Table 3). Many adolescents (83.5%, Ferozpur) had fair knowledge that HIV/AIDS could not be transmitted by sharing same clothes of HIV infected person and similarly large number (75.9%) had knowledge that the disease could not be transmitted by sharing toilets. 43.2% (Dist. Ferozpur) and 43.6% (Dist. Bathinda) adolescents had the misconception that the disease could be transmitted through mosquito bite. A very large number of adolescents i.e. 94.3% (Ferozpur) and 85.8% (Bathinda) had fairly good knowledge that HIV/AIDS decreases the body ability to fight against infections and around 24.7% (Ferozpur) and 38.40% (Bathinda) adolescents had the misconception that AIDS is curable using medicines. 34.9% (Ferozpur) and 40.39% (Bathinda) adolescents thought HIV could be prevented by vaccination and the difference in knowledge in this regard was extremely significant ( $p < 0.001$ ) between the two districts (Table 2). A very large number of adolescents (88.4% Ferozpur) and (85.3% Bathinda) said that they would take care of anyone diseased with HIV/AIDS. 25.4% of adolescents from Ferozpur and 37.2% from Bathinda said that a diseased teacher should not be allowed to continue teaching in any school. 71.6% (Ferozpur) and 42.1% (Bathinda) adolescents said that they would buy grocery or other items from a HIV+ve shopkeeper. 76.8% (Ferozpur) and 60.3% (Bathinda) agreed to the fact that a HIV positive student should be allowed to continue studying with them. Almost 95.1% (Ferozpur) and 88.5% (Bathinda) adolescents said

that if their known is affected with this disease, they would recommend him to go for treatment.

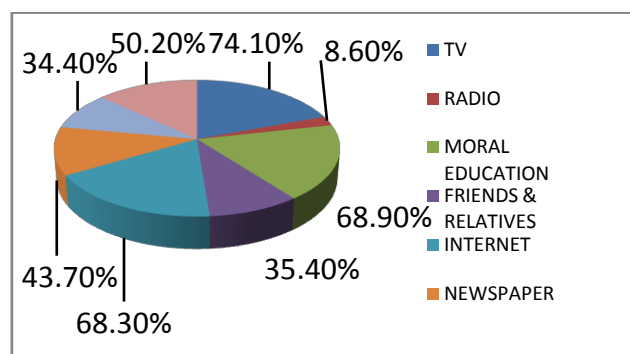


Figure 1: Source of information regarding HIV/AIDS (District Ferozpur)

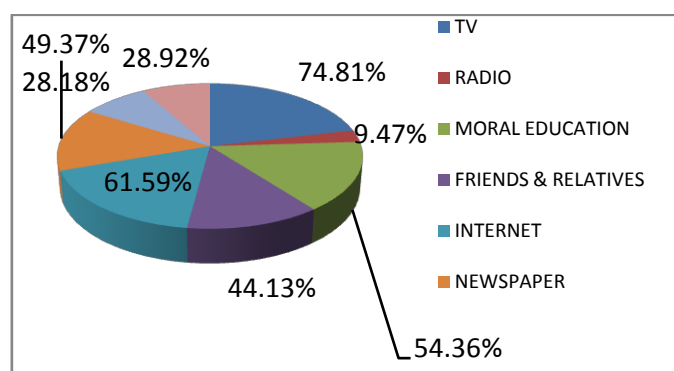


Figure 2: Source of information regarding HIV/AIDS (District Bathinda) Can HIV/AIDS be transmitted by sexual contact?

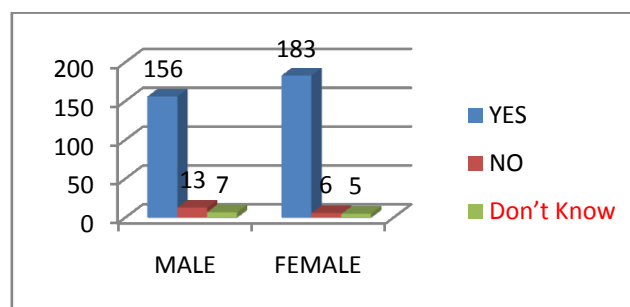


Figure 3 (District Ferozpur)

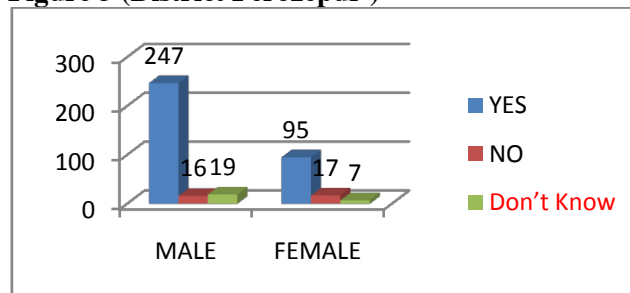


Figure 4 (District Bathinda)

**Table 1 : Comparison of knowledge of HIV transmission between district Ferozpur and bathinda**

Questions regarding transmission: Correct Response	MALE	FEMALE	MALE	FEMALE
	District Ferozpur		District Bathinda	
Mother to child?(yes )	155(41.9%)	177(47.8%)	218(54.4%)	106(26.4%)
Sharing needles, syringes and razor blades?(yes)	164(44.3%)	183(49.5%)	246(61.3%)	100(24.9%)
Inject able / IV Drug users?(yes)	111(30%)	128(34.6%)	169(42.1%)	64(16.0%)
Blood transfusion?(yes)	170(45.9%)	186(50.3%)	247(61.6%)	113(28.2%)
Mosquito bite?(no)	74(20%)	86(23.2%)	113(28.2%)	54(13.5%)

**Table 2: Comparison of knowldge between Bathinda and Ferozpur**

Variable (Correct response )	Bathinda	Ferozpur	P value
HIV/AIDS same thing?(No)	237	330	P<0.001
By Sexual contact?(yes)	342	339	P<0.01
Prevented by using Condom?(yes)	288	289	P>0.05(0.5399)
Is Vaccine available?(no)	151	185	P<0.001

**Table 3: Comparison of attitude and practice between Bathinda and Ferozpur adolescents.**

Variables	Bathinda (401 )		Ferozpur (370)		P value
	Yes	No	Yes	No	
Take care of HIV infected person?	343	58	327	43	p>0.05(0.2898)
Continue friendship with HIV +ve Friend?	334	67	329	41	P<0.05(0.03193)
Had sexual contact?	52	349	9	361	P<0.001
Used Condom?	48	353	8	362	P<0.001
Shared needles /syringes?	39	362	3	367	P<0.001

## DISCUSSION

Adolescents often encounter difficulties of a more personal nature, such as, dealing with their sexuality and peer pressure. In 2012 globally, the leading causes of death among adolescents were road injury, HIV, suicide, lower respiratory infections and interpersonal violence. As per WHO, HIV is 2<sup>nd</sup> leading cause of death among adolescent .In our study of 100% of adolescents from District Ferozpur and 99.8% knew and heard about HIV/AIDS. In our study TV, internet and Moral education are the most common source of information regarding HIV/AIDS among adolescents and a less number of adolescents said that they had been given sex education at home

while 50-61% adolescents said that they had been given sex education in school. Since HIV is generally associated with unsafe sex practices and premarital sex in the Indian society; it is considered a taboo and thus the HIV-positive adolescents face discrimination at different levels: medically, professionally, academically, and even socially. More number of adolescents from District Ferozpur as compared to District Bathinda knew that HIV/AIDS could be prevented by using condoms during sexual contact and this was found to be highly significant (p<0.01). The difference in history of sexual contact and practice of using of condom during sexual activity was found to be highly significant (p<0.001) in both districts of Punjab. More number of adolescents from District

Bathinda were indulged in sharing needle/syringes as compared to District Ferozepur and this difference was highly significant ( $p < 0.001$ ). Issues like sex and sexual behavior are still tabooed subjects for discussion between parents and children and even in a formal set-up between teachers and students in many parts of India. Hence, adolescents are likely to have more misconceptions and be misinformed, and in the long run, pose risk of HIV/AIDS and that's why there are lots of misconceptions about modes of transmission of HIV/AIDS amongst the students. So it is pertinent to study misconceptions about the modes of transmission. If these misconceptions continued it reflect in the behavior of people towards People living with HIV/AIDS (PLWHA) leading to stigma about the disease and PLWHA. The misconception regarding the mode of transmission of HIV/AIDS like transmitted by eating, drinking from same plate/glass of HIV/AIDS infected person, transmitted by sharing toilets, transmitted by mosquito bite, transmitted by sharing same clothes of HIV infected person and regarding the curability of disease with medicine and prevention by vaccination were more in adolescents of District Bathinda as compared to adolescents of District Ferozepur. The knowledge regarding the blood transfusion as a mode of transmission of HIV/AIDS and its prevention by prior blood testing was slightly more in District Ferozepur as compared to District Bathinda. This lack of knowledge and attitude in District Bathinda gives an indication of poor IEC/BCC activities running under NACP for adolescents. The significant variation of responses amongst two districts of same state points out the lag of uniform implementation of various strategies of Programme in India. There was positive attitude of adolescents taking care of HIV/AIDS infected. Although adolescents had fair knowledge and have good attitude towards HIV/AIDS but yet there are misconceptions regarding its transmission.

### CONCLUSION

Awareness regarding HIV must further increase among them. This could be achieved through incorporation of information regarding HIV, its transmission, and prevention into their schools' curricula, indulging them in various activities at health centers as and when any IEC activities are carried out and moreover parents should also indulge themselves and impart them with more information regarding the disease. This would help in transmission of accurate information at the grass root level and would thus aid us in reducing

the misconceptions and myths surrounding HIV. Thus a collective effort and various different interventions at different levels and cities are needed so as to have bright future of these adolescents. Although various intervention and preventive strategies against HIV have been formulated for majority of the HIV seropositive population, a more 'adolescent-centric' approach is necessary to combat such cases. Public health policy should recognize adolescents as a separate section, design and implement prevention strategies keeping in mind their vulnerability and sensibilities for greater effectiveness of these programs uniformly throughout the country.

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