

**KNOWLEDGE ABOUT HIV/AIDS AMONG SENIOR SECONDARY  
SCHOOL STUDENTS IN JAMNAGAR, GUJARAT**

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**ABSTRACT**

*A number of knowledge, attitude, behavior and practice (KABP) studies conducted in different parts of India reveal a widespread ignorance and misconceptions about the disease among adolescents. Hence, this study was undertaken to assess the extent of knowledge, beliefs and attitudes of adolescent students towards HIV/AIDS in two senior secondary schools of Jamnagar, Gujarat. The findings of Jamnagar revealed that (i) all the students under study had heard of the disease; (ii) though the sample subjects included both the biology and non-biology stream students but no major difference was found in the knowledge level regarding mode of transmission of HIV/AIDS between the two groups; (iii) most of the subjects had misconceptions about the pandemic; and (iv) books were on the top of the list followed by TV and newspapers as leading sources of information regarding HIV/AIDS for the students.*

*The authors suggest that a specific chapter on HIV/AIDS should be included in the school curriculum which could make them aware of the problems of HIV/AIDS epidemic.*

**Keywords:** HIV/AIDS pandemic, Adolescent, Information sources and High-risk behaviour.

AIDS is a pandemic disease without borders. The latest figures compiled by the National AIDS Control Organisation (NACO) show that an estimated 5.21 million adults are living with HIV in India as compared to 5.13 million in 2004. Adolescent age group is an important segment of population and potential resource for prevention of HIV/AIDS transmission. Today, around 25 per cent of the world's AIDS cases are in their twenties and it is assumed that these people might have been infected with HIV/AIDS during their adolescent period. Adolescent stage is generally inquisitive. During this period, a boy or a girl wants

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to be independent, very often starts experimenting with-intravenous drugs or sex, both making them vulnerable to contracting HIV/AIDS. Our AIDS prevention and control efforts remain largely concentrated on those who are already practicing high-risk behavior like the commercial sex workers, intravenous drug users, long route drivers, etc. Since prevention is the only key to the control of HIV/AIDS, empowerment of youth with sufficient knowledge about it is important. A number of knowledge, attitude, behavior and practice (KABP) studies conducted in different parts of India reveal a widespread ignorance and misconceptions about the disease among adolescents. Hence, this study was undertaken to assess the extent of knowledge, beliefs and attitudes of adolescent students towards HIV/AIDS in two senior secondary schools of Jamnagar, Gujarat.

## **MATERIALS AND METHOD**

The present study was conducted during January-February 2002 in two randomly selected co-educational schools of Jamnagar, Gujarat, The two schools were selected by random sampling technique. XII<sup>th</sup> standard students from both biology and non-biology sections were taken as sample subjects for the study. A total of 358 students in the age bracket of 16-18 years were included in the study of which 155 were from biology and 203 were from non-biology stream. A pre-tested close-ended schedule was administered to each of the samples in their respective classrooms. The entire schedule was explained to the sample students and all the queries raised by them were clarified. Care was- taken to minimize consultation amongst the school children. It was subsequently followed by an open discussion on HIV/AIDS with the students. During discussion, misconceptions and apprehensions regarding HIV/AIDS were clarified. Data were analysed using EPI INFO 2000.

## **FINDINGS AND DISCUSSION**

### **Knowledge regarding HIV/AIDS**

Out of the total of 358 students studied, 155 (43.2%) of them were from the biology stream and 203 (56.8%) were from non-biology stream; 227 were males and 131 were females (Table 1). From the findings in Table 2, it is noticed that all the students had already heard of AIDS and a large majority (96%) of them knew that AIDS prevails in India. But a lower proportion of non-biology students (82.7%) had known the correct abbreviation of HIV/AIDS in comparison to the biology-stream students (94.2%). Similarly, a higher proportion of biology students were aware of the fact that HIV is caused by a virus and a fatal disease for which no vaccine is available for its cure. In the present study, 90.5 per cent of the subjects knew that HIV/AIDS is caused by an infective agent while in another study by Basir Gaash et al, only 48.44 per cent of the respondents knew

about this. Out of the total of 358 students, 76 (21.2%) of them had the misconception that AIDS can be cured.

Though significantly a higher proportion of biology students were aware of the fact that AIDS cannot be transmitted through casual contacts like kissing, hugging, shaking hands and sharing utensils but many of them from both the streams had some misconceptions about the disease. Similar misconceptions have also been reported by other studies. So, awareness campaigns to spread the information on HIV/AIDS may be designed to educate the adolescents about the non-availability of effective vaccine to cure HIV/AIDS. The misconceptions regarding the causes and modes of transmission of HIV/AIDS among adolescents need to be uprooted from their minds. Also, the high risk behavior practiced by them should be discouraged. Interestingly, irrespective of their subject streams they belonged to, majority of the students had the correct knowledge regarding other modes of transmission (Table 3). 97.41 per cent of the biology-stream students knew that it transmits through infected needle while it was 96 per cent for non-biology stream students. Similarly, 80.7 per cent of the non-biology students had known that HIV/AIDS is transmitted through intra-venous drug use (IVDU) while the figure was 88.38 per cent for the biology stream students.

**TABLE 1**  
DISTRIBUTION OF SUBJECTS

Subjects	Male	Female	Total	%
Biology	112	43	155	43.2
Non-biology	115	88	203	56.8
TOTAL	227	131	358	100

The findings revealed that 88.8 per cent of the students had heard of condoms. Biology-stream students were significantly had more knowledge about screening of blood donors (85.8%) and sex with single partner (78.6%) as preventive measures of HIV/AIDS contamination in comparison to non-biology students, 71.4 per cent and 67.4 per cent respectively. The knowledge regarding other aspects of preventive measures like the use of sterilized needles, sexual abstinence, health education and proper use of condoms was equally seen between both the groups (Table 4). No major difference was observed in between both the stream of students regarding the knowledge of high-risk groups. A significantly higher proportion of biology students (80.64%) considered drug abusers as a high-risk group (Table 5). Interestingly, 87.09 per cent of the biology students and 88.1 per cent of non-biology students stated that sex-education could be a preventive measure for HIV/AIDS (Table 4). With regard to the major sources of information on HIV/AIDS, data presented in Table 6 reveal that the students got the information from books (81.8%) followed by TV (78.2%), newspapers (58.6%) and the health personnel (33.2%). Only 29.6 per cent of the adolescents mentioned radio as a source of information for HIV/AIDS. More discussion and interaction by school-teachers and health persons with the students can sensitize them more to read about HIV/AIDS and improve their knowledge level on the disease.

**TABLE 2**

KNOWLEDGE OF STUDENTS REGARDING GENERAL ASPECTS OF HIV/AIDS

Information	Biology (n-155)			Non- biology (n-203)			Total (n-358)			Z	P
	Y	N	DK	Y	N	DK	Y	N	DK		
Heard of AIDS	155 (100)	0	0	203 (100)	0	0	358 (100)	0	0		
Expansion of AIDS	146 (94.2)	9 (5.8)	0	168 (82.7)	35 (17.3)	0	314 (87.7)	44 (2.3)	0	3.54	<0.01
Abbreviation of HIV	136 (87.75)	19 (12.25)	0	81 (39.9)	122 (61.1)	0	217 (60.6)	141 (39.4)	0	11.05	<0.01
Causative org i) Virus	154 (99.35)	0	1 (0.65%)	170 (83.7)	0	30 (14.7)	324 (90.5)	0	31 (8.6)	5.86	<0.01
Causative org ii) Bacteria	0	0	0	3 (1.4)	0	0	3 (0.83)	0	0		
Prevails in India	150 (96.78)	2 (1.29)	3 (1.93)	194 (95.56)	9	0	344 (96)	11 (3)	13 (1)	0.06	>0.05
AIDS is Fatal	143 (92.25)	10 (6.45)	2 (1.29)	159 (4.5)	36 (17.7)	8 (3.19)	302 (84.3)	46 (12.8)	10 (2.7)	3.87	<0.01
AIDS is Curable	36 (23.22)	112 (72.25)	7 (4.51)	40 (19.7)	157 (77.3)	6 (2.9)	76 (21.2)	269 (75.1)	13 (3.6)	1.08	>0.05
Anti-AIDS Vaccine	7 (4.51)	139 (89.67)	9 (5.8)	50 (24.6)	131 (64.5)	22 (10.8)	57 (15.9)	270 (75.4)	31 (8.6)	6.06	<0.01

(Figures in the parenthesis indicate percentage) (Y-Yes, N-No, DK-Don't Know)

**TABLE 3**

## KNOWLEDGE OF STUDENTS REGARDING MODE OF TRANSMISSION

Mode	Biology (n=155)			Non-biology (n=203)			Total (358)			Z	P
	Y	N	DK	Y	N	DK	Y	N	DK		
Casual Contact i) Kissing	13 (8.38)	142 (91.6)	0	54 (26.6)	149 (73.4)	0	67 (18.7)	291 (81.2)	0	4.7	<0.01
ii) Hugging	4 (2.58)	151 (97.4)	0	39 (19.2)	164 (80.7)	0	43 (12)	315 (87.9)	0	5.49	<0.01
iii) Handshake	4 (2.58)	151 (97.4)	0	29 (14.2)	174 (85.7)	0	33 (9.2)	325 (90.8)	0	4.23	<0.01
Sharing utensils	8 (5.16)	145 (93.94)	2 (1.29)	61 (30.2)	127 (62.5)	15 (7.3)	69 (19.2)	272 (75.9)	17 (4.7)	8.06	<0.01
Sex with multiple partners	143 (92.25)	9 (5.82)	3 (1.93)	182 (89.6)	11 (5.4)	10 (4.8)	325 (90.7)	20 (5.5)	13 (3.6)	0.88	>0.05
Infected needle	151 (97.41)	3 (1.93)	1 (0.64)	195 (96)	6 (2.9)	2 (0.98)	346 (96.6)	8 (2.5)	4 (0.8)	0.75	>0.05
Blood and blood product	152	2	1	194	6	3	346	8	4	1.4	>0.05
From infected mother to child	147 (94.8)	5	3 (1.93)	187 (92.1)	11 (5.4)	5 (2.4)	334 (93.2)	16 (4.4)	8 (2.2)	1.04	>0.05
IV drug use	137 (88.38)		6 (3.87)	164 (80.7)	19 (9.3)	20 (9.8)	301 (84)	31 (8.6)	26 (7.2)	2.07	<0.05
Drinking from same glass	16 (10.32)		4 (2.58)	55 (27)	125 (61.5)	23 (11.3)	71 (19.8)	260 (72.6)	27 (7.5)	1.35	>0.05

(Figures in the parenthesis indicate percentage) (Y-Yes, N-No, DK-Don't Know)

**TABLE 4**

## KNOWLEDGE OF STUDENTS REGARDING PREVENTIVE MEASURES FOR HIV/AIDS

Preventive Measures	Biology (n=155)			Non- biology (n=203)			Total (358)			Z	P
	Y	N	DK	Y	N	D	Y	N	DK		
Heard of condom	142 (91.61)	7	6 (3.8)	176 (86.6)	13 (6.4)	14 (6.8)	318 (88.8)	20 (5.5)	20 (5.5)	1.52	>0.05
Proper use of condom	137 (88.38)	12 (7.74)	6 (3.87)	172 (84.7)	18 (8.8)	13 (6.4)	309 (86.3)	30 (8.3)	19 (5.3)	1	>0.05
Screening of blood donors	133 (85.8)	13 (8.38)	9 (5.8)	145 (71.4)	24 (11.8)	34 (16.7)	278 (77.6)	37 (10.3)	43 (12)	3.4	<0.01
Sex with single partner	121 (78.6)	23 (14.8)	1 (0.64)	137 (67.4)	43 (21.1)	23 (11.3)	258 (72)	66 (18.4)	24 (6.7)	2.6	>0 01
Sterilized needle	133 (85.8)	16 (10.32)	6 (3.87)	162 (79.8)	23 (11.3)	18 (8.8)	295 (82.4)	39 (10.8)	24 (6.7)	1.51	>0.05
Health education	125 (87.09)	14 (9.03)	6 (3.87)	179 (88.1)	17 (8.3)	7 (3.4)	314 (87.7)	31 (8.6)	13 (3.6)	0.2	>0.05
Sexual abstinence	66 (42.5)	81 (52.25)	8 (6.45)	86 (42.3)	41 (20.1)	76 (37.2)	152 (42.4)	122 (34)	84 (23.4)	0.96	>0.05a

(Figures in the parenthesis indicate percentage) (Y-Yes, N-No, DK-Don't Know)

**TABLE 5**

## KNOWLEDGE OF STUNDENTS REGARDING HIGH RISK GROUPS

High Risk Groups	Biology (n=155)			Non- biology (n=203)			Total (358)			Z	P
	Y	N	DK	Y	N	DK	Y	N	DK		
i) IV drug users	125 (80.64)	13 (8.38)	17 (10.96)	126 (62)	47 (23.1)	30 (14.7)	251 (70.1)	60 (16.7)	47 (13.1)	4.05	<0.01
ii) Prostitutes	143 (92.25)	1 (0.64)	11 (7.9)	177 (87.1)	10 (4.9)	16 (7.8)	320 (89.3)	11 (0,3)	27 (7.5)	1.6	>0.05
iii) Recipient of : multiple blood transfusion	130 (83.87)	13 (8.38)	12 (7.74)	161 (79.3)	16 (7.8)	26 (12.8)	291 (81.2)	29 (8.1)	38 (10.6)	1.1	>0 05
iv) Homosexuals	79 (50.96)	42 (27,09)	34 (21.93)	93 (45.8)	54 (26.6)	56 (27.5)	172 (48)	96 (26.8)	90 (25.1)	0.97	>0.05
v) Drivers	40 (25.81)	78 (50\3)	37 (23.87)	66 (32.5)	91 (44.8)	46 (22.6)	106 (29.6)	169 (47.2)	83 (23.1)	0.28	
Non-high risk groups											
i) Persons looking after AIDS patients	21 (13.54)	104 (67.09)	30 (19.35)	89 (43.8)	73 (35.9)	41 (20.1)	110 (30.7)	177 (49.4)	71 (19.8)	6.17	<0.01
ii) Frequent blood donors	52 (33.54)	66 (42.5)	37 (23.87)	85 (41.8)	76 (37.4)	42 (20.6)	137 (38.2)	142 (39.6)	79 (22)	0.09	>0.05

(Figures in the parenthesis indicate percentage) (Y-Yes, N-No, DK-Don't Know)

**TABLE 6**  
SOURCES OF INFORMATION FOR STUDENTS ABOUT AIDS

Sources	Biology (n=155)	Non-biology (n=203)	Total (358)
Books	131 (84.51)	162 (79.8)	293 (81.8)
TV	129 (83.22)	151 (74.3)	280 (78.2)
Newspaper	111 (71.6)	99 (48.7)	210 (58.6)
Teachers	96 (61.9)	77 (37.9)	173 (48.3)
Health Personnel	68 (43.87)	51 (25.1)	119 (33.2)
Radio	67 (43.22)	39 (19.2)	106 (29.6)
Friends	76 (49.03)	00 (00)	76 (21.1)
Pamphlets	66- (42.5)	36 (17.7)	102 (28.4)

(Figures in the parentheses indicate percentage)

Adolescents form a sizeable proportion of the population. As per the National Family Health Survey (NFHS-2) 1998-'99, approximately 22 per cent of India's population was adolescents in the age group of 15-19 years. In 1992, the World Health Organization (WHO) recommended the young children and adolescents as a potential resource for spreading messages on HIV/AIDS for its prevention. Therefore, a subject on HIV/AIDS in school education was introduced all over the globe. Already one decade has passed and a dramatic progress has been made in teenage education in many countries like Thailand and Sri Lanka. While in India, progress in this regard is slow. A recent Indian study applying the Libert and Murphy Technique Scale of Assessment for measuring the performance scores of adolescents aged 19 years or less, revealed that: most of them fared an average 'poor' or at best a 'fair' score which was statistically much lower in the case of female adolescents in relation to HIV/AIDS. Our AIDS prevention and- control efforts remain largely concentrated on those who are already practicing high-risk behaviour like the commercial sex workers, intravenous drug users, long-route drivers, etc. The current study was conducted solely upon urban students residing and studying in Jamnagar who are supposed to be better informed than their rural counterparts.

## CONCLUSION

It was observed, that though the general level of "knowledge of senior secondary school students about HIV/AIDS was not so poor but they had a number of misconceptions about it. It is also becoming clear that the students have no reliable means of obtaining correct information on the subject



of HIV/AIDS which led them to develop misconceptions. Besides, the school authorities and the other concerned should come forward to design awareness campaigns for the benefit of the students so as to help them develop proper understanding of what HIV/AIDS is, how does it spread? and how to prevent it? So, the authors recommend the inclusion of a specific chapter on HIV/AIDS in the school curricula which could help in preventing and curbing the spread of the. epidemic to a great extent.

### Lkkj ká k

भारत के विभिन्न भागों में ज्ञान, दृष्टिकोण, व्यवहार एवं अभ्यास संबंधी संचालित अनेक अध्ययनों से किशोरों में रोग के विषय में फैली व्यापक अनभिज्ञता तथा गलत अवधारणाओं के बारे में पता चला है। इसलिए यह अध्ययन जामनगर, गुजरात के दो सीनियर सेकेण्ड्री स्कूलों में एचआईवी/एड्स के प्रति किशोर छात्रों के ज्ञान, विश्वास तथा दृष्टिकोण की सीमा का आंकलन करने के लिए संचालित किया गया था। जामनगर में प्राप्त निष्कर्षों से यह पता चला है कि (I) अध्ययन के अर्न्तगत छात्रों ने उक्त रोग के बारे में सुना था, (II) यद्यपि सैम्पल में लिए गए छात्रों में जीव विज्ञान तथा गैर जीव-विज्ञान विषय वाले छात्र शामिल थे, किन्तु दोनों वर्गों के बीच एचआईवी/एड्स रवे संचरण-माध्यम के बारे में ज्ञान में कोई बड़ा अन्तर नहीं पाया गया था, (III) अधिकांश छात्रों में इस सर्वलौकिक महामारी के बारे में गलत अवधारणायें विद्यमान थीं, तथा (IV) छात्रों के लिए एचआईवी/एड्स के बारे में सूचनायें प्रदान करने के प्रमुख साधन के रूप में टी.वी. तथा समाचार पत्र के पश्चात पुस्तकें तथा उनकी सूची में सर्वोच्च साधन थीं।

### REFERECNES

1. Farghaly AG, Kamal MM (1991) Study of Opinion and Level of Knowledge about AIDS Problem amongst Secondary School. Students and Teachers in Alexandria. *J Egypt Public Health Assoc.*, 66 (1-2): 209-225.
2. Neter T (1989) World AIDS DAY. *World Health*, October, p. 25-26.

3. Bhatt SD and Dhoundiyal NC (1998) AIDS Prevention through School Health Education: Some Sensitive Issues. *Health for the Millennium*, 24 (1): 25-26.
4. Young People and HIV/AIDS: Opportunity in Crisis (2000) WHO/ UNICEF/ UNAIDS.
5. Bena SK, Khelendra RK, Chaudhary BN, Ramaswamy J, Bhattacharya J, Chawla U, Bandopadhyay S and Dutta KK (1992) AIDS- A Study of Knowledge, Attitude and Belief of Undergraduate Students of Delhi University. *Indian Journal of Community Medicine*, New Delhi.
6. Amalraj ER, Chadra Shekhar N, Solomon S and Sanbandem P (1995): First Year Medical Students' AIDS Knowledge and Attitude. *Ind. Journal of Comm.Med.*,(X: 36-40.
7. Sharma AK, Sehgal N, Kants, Choubey D and Bhardwaj A (1997) Knowledge, Attitude, Belief and Practice Study on AIDS among Senior Secondary Students. *Ind. Journal of Com. Medicine*, XXIV (4): 168-71.
8. Bhasin SK, Pandit R, Kanan AT and Dubey KK (1999) Impact of IEC Intervention on Knowledge regarding AIGS amongst Senior Secondary School Children of East Delhi. *Indian Journal of Community Medicine*, XXIV (4): 167-71.
9. Saxena A, Krishna G, Chandra M, Srivastava VK et al (2000) Public Health in the New Millennium. *Souvenir* of the Joint National Conference of Indian Public Health Association, Indian Association of Epidemiology and Indian Society for Malaria and other Communicable Diseases, Asia, p. 9.
10. Rao VS, Subba Rao W and Rao BV (2001) A study of awareness on AIDS amongst the Student Population in Kamman Town, Andhra Pradesh. *Souvenir* of the Indian Public Health Congress, New Delhi, Abstract No. 124.

11. Sharma SR, Mohapatra SC and Gupta JNP (2002) The Sociological Intervention Package (SP) for Developing Awareness on High-risk Behaviour in AIDS. *Ind. Journal of Community Med.*, XXVII: 69-73.
12. Basir G et al (2003) Knowledge, Attitude and Belief on HIV/AIDS among Female Senior Secondary Students in Srinagar District of Kashmir. *Health and Population: Perspective and issues, National institute of Health Family Welfare*, New Delhi, 26 (3): 101-109.
13. Wadhva SK et al (1997) Knowledge and Attitude of Secondary Students towards HIV/AIDS. *HIV/AIDS Reason in India*, p. 184-188.
14. Gugnani et al (1993: A. study of Existing Knowledge about AIDS among Undergraduates of a Nigerian University. *J Comm. Dis.*, 25 (2): 52-56.
15. IIPS/ORC MARCO: National Family Health Survey of India 1998-99 (2002) NFHS-2; J & K, October; p. 149-50.
16. School Health Education to Prevent AIDS and STDS (1992): *WHO*, AIDS Series, No 10:1.

Lal et al (2008) studied about awareness on HIV/AIDS among Senior Secondary School Children of Delhi. A total of 2592 students belonging to Classes IX to XI in selected schools participated in the study. The findings in the study reiterated the need for re-enforcing school AIDS education. There was a strong need school education must directly address stigmatizing attitudes about HIV/AIDS, gaps in HIV/AIDS knowledge and awareness of HIV- related health resources. Bhalla et al (2005). 72.Â conducted a similar study on knowledge and attitude about HIV/AIDS among school children in Jamnagar, Gujarat. They observed that although a significant proportion of students heard about HIV/AIDS, still they were carrying lot of misconceptions regarding HIV/AIDS.