

# HIV/AIDS Awareness, Attitude and Perception among School, College Students and Hospital Workers

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## ABSTRACT

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**Objective:** To find out the level of awareness, attitude and perceptions of HIV/AIDS among School students, Pharmacy college students and hospital workers. **Setting:** PSG Sarvajana Higher Secondary School, PSG College of Pharmacy and PSG Hospital. **Study design:** Class XI and Class XII School students, III year and Final year Bachelor of Pharmacy Students and third grade hospital workers. **Participants:** 98 School students, 92 College students and 77 hospital workers participated in the study. **Statistical analysis:** Percentage and Chi-Square for comparison between the groups. **Results:** The awareness of Pharmacy college students was higher than School students. School students had better knowledge than hospital workers. **Conclusion:** Education has an impact on awareness and effective program design for each group could improve the understanding and behavior of the study population regarding HIV/AIDS.

**Keywords:** AIDS, Awareness, College, HIV, Hospital workers, School students

## INTRODUCTION

National AIDS Control Programs (NACP) was initially launched to cover surveillance, blood transfusion and health education after the first few cases of Acquired Immuno Deficiency Syndrome (AIDS) were reported in 1986.<sup>1</sup> Thereafter, National AIDS Control Organization (NACO) was launched in 1992, initiated National AIDS Control Projects (NACP) which was implemented through State AIDS control bodies in 25 states and in 7 Union territories. The first two programs of NACP in 1992 and 1999 had focussed on creating awareness and transmittance of the disease. The third program of NACP in 2006-2011 focussed on targeted intervention groups, care, support and treatment for People Living with Human Immuno Virus and AIDS (PLWHA) and for these financial resources were allocated by the Ministry of Health and now, NACO has entered its fourth phase.<sup>2</sup>

The current technical report on HIV estimates released by the state NACO committee states that there is improvement in understanding of the disease in India. The prevalence of adult HIV was 0.39% in 2004 and it decreased to 0.31% in 2009. Thus India has reached great heights in its efforts in halting the progression of the disease.<sup>3</sup>

In India, children aged less than 15 years account for 4.4% and are prone for this infection, whilst people aged 15-49 years account for 82.4% and 13.2% from people above 50 years of age. The estimates showed that the infection rate was 61% among men and 39% among women. Among the high prevalence states, HIV prevalence in Tamilnadu has declined from 0.37% in 2008 to 0.33% in 2009. Tamilnadu has become a pioneer in care, support and treatment of people with HIV/AIDS. There were many programs organized by Tamilnadu State AIDS Control Society (TANSACS) to create awareness among public, school and college students and support services to people with AIDS. One such initiative was Information, Education and Communication (IEC) program to create awareness on Reproductive Tract Infections (RTI), Sexually Transmitted Infections (STI), and HIV/AIDS among high risk groups, vulnerable groups, and among general population. It promotes behavioral change for prevention of new infections and promotes community involvement in care and support for PLWHA. To achieve the current target of "zero new infections, zero discrimination and zero AIDS related deaths" TANSACs has framed several programs for targeted intervention groups, blood safety, promotion of condoms, and Prevention of Parent to Child (PPTCT). Currently NACO is operating at district levels through District AIDS Prevention and Control Units (DAPCU) and there are 32 DAPCUs in Tamilnadu.

In India, 31% HIV infections were among youngsters. They are more vulnerable to STI because of lack of awareness, misconceptions and tendency to experiment.<sup>4,5</sup> To reach the youngsters several programs are framed at school and college

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levels. Relevant messages on safe sex, sexuality and relationships are developed and distributed as posters, booklets, hoardings and print material. So, educating youth before they become sexually active can lay a foundation for responsible lifestyle, safe sex and healthy relationships. Youth Unite for Victory on AIDS (YUVA) aims at 'AIDS prepared campus, AIDS prepared community and AIDS prepared country'. Red Ribbon Club is a voluntary on-campus initiative in schools and colleges which provides youth with access to HIV/AIDS information, and voluntary blood donation.

Some of the significant structural and social factors that increase the vulnerability to HIV infections among adults are high poverty, large scale migration, lack of awareness, cultural myths, misconceptions, stigma regarding sex, male resistance to condoms, and women discrimination.

Many studies have reported that education plays a major role in increasing the awareness, behaviour, and attitudes towards HIV/AIDS among schools, colleges and public.<sup>6,7</sup> Studies indicate that there is a wide gap between the inputs by the government and the actual scenario regarding the knowledge, awareness and attitude on HIV/AIDS. With this background, the present study has been conducted to assess the awareness and attitude regarding HIV/AIDS among school students, pharmacy college students and hospital workers. This study could highlight the strengths and lacunae in the interventions initiated by NACO.

## METHODS

### Study area and design

This study was conducted from July 2010 – November 2010 in PSG Sarvajana Higher Secondary School, PSG college of Pharmacy and PSG Hospitals in Coimbatore district, Tamilnadu state. Ethical clearance was obtained from the Department of Clinical Research Board of PSG Institute of Medical Sciences and Research.

### Study population

The study population comprised of class XI and class XII students, pre-final and final year students of Bachelor of Pharmacy students, and hospital workers. The school authorities, college authorities and hospital authorities were informed about the study and verbal was obtained from them to conduct the study.

### Data collection

Information was collected using a pre-designed questionnaire. The questionnaire was based on studies reported in Indian Journals. For the survey, the students were asked to gather at specified times other than class hours. Totally the questionnaire had 50 questions with 8 sections,

and each section focused on different aspects of the disease such as socio-demographic information, knowledge of HIV/AIDS, source of knowledge, knowledge of modes of transmission, methods of prevention, symptoms of HIV/AIDS, attitudes towards PLWHA and knowledge of NACO. The participants present on the day of data collection were included in the study. All the subjects were explained about the study and the questions were explained to them in detail to ensure complete comprehension. The study investigators explained the queries raised by the participants. For the school students and hospital workers tamil version of the questionnaire and for the pharmacy students English version of the questionnaire was used.

### Scoring

Each correct answer was given the score of 1 and wrong or unmarked response was scored as 0.

### Data management and analysis

Data was analyzed by Graph Pad Prism Software, 4.03 version. The total score of each category was computed, converted to percentage and Chi-square test was used to compare the difference between the groups. P value <0.05 was considered statistically significant.

## RESULTS

### Socio-demographic characteristics of the participants

Totally 267 subjects participated in the study. Among them 98 school students, 92 pharmacy students and 77 hospital workers recorded their responses. (Table-1) Among the school students, 38 students were from Standard XI and

Table 1: Socio-demographic Characteristics Of The Respondents			
	Workers	School (High School)	College (Pharmacy undergraduates)
<b>Number of respondents (n)</b>	77	98	92
Mean Age ± SD	39.05±0.93	16.26±0.08	21.83±0.17
<b>Gender</b>			
Male	57	57	57
Female	20	41	35
<b>Marital status</b>			
Married	72	-	-
Unmarried	5	-	-
<b>Hospital worker</b>			
Security	35	-	-
Security helper	17	-	-
House keeper	13	-	-
Sweeper	8	-	-
Driver	4	-	-
Average education of hospital workers	6.2±0.5	-	-

60 were from Standard XII. The mean age of the school students was 16 years. The ratio between boys and girls in the school students was 54:41. 40 pre-final and 52 final year pharmacy students participated in the study and they were bachelor of pharmacy students. The mean age of the pharmacy college students was 21 years. The gender distribution was 57 boys and 35 girls. The hospital workers included were 57 men and 20 women. The mean age was 39 years. Most of them were married (93%) and very few were unmarried (7%). Most of the hospital population comprised securities (45%), security helpers (22%), and very few of them were housekeeping (17%), sweepers (10%) and drivers (5%). Majority of the study population was Tamil speaking group and the remaining were Telugu and Malayalam speakers. (Table-1)

### Knowledge of HIV/AIDS

All the school and college students had heard of HIV/AIDS while only 92% of the workers have heard about it. Only 1/3<sup>rd</sup> of the school and only 10% of the workers could rightly point that it is caused by a virus. Most of them had the belief that only female sex workers will get AIDS. Small percentage of the study population (16%, 10%, and 5% of workers, school & college respectively) still feel that there is a cure for HIV/AIDS. About two-thirds of the workers and college students and one half of the school students rightly pointed about the association between the STD and AIDS. Most of the study population was not aware about the asymptomatic stage in HIV infection. The awareness level regarding the concept of window period was 16% among the workers, 29% among the school students and 35% among the college students. The overall knowledge of HIV/AIDS was 49% among the workers, 63% among the school students and 66% among the college students. There was no difference regarding the knowledge of HIV/AIDS between the school and college students, but there was significant difference between the college students and workers. ( $p < 0.05$ ) (Table-2)

### Knowledge about NACO

The symbol of NACO has well reached in the college group (72%) and to a lesser extent among the school students and workers (57% & 55% respectively). Most of them were not aware of the NACO. (25%, 15%, 6% known among college, school and workers group respectively). Red Ribbon Express is at least known to half of the college group, whereas the reach of this campaign is very less among the school students and Hospital workers group (28% & 10%). Majority of the study groups were not aware about Integrated Counseling and Testing Center (ICTC) (20% in college, & 7% in school and workers group respectively). The campaigns of NACO have reached only to 50% of the college group, and very less in the school (15%) and workers group (6%). Most of the

participants felt that HIV/AIDS is a costly disease and awareness about free Anti Retroviral Therapy (ART) centers was not known to most of them (49%, 36%, 26% in college, school & workers group respectively) (Table-2)

### Source of information

With regard to sources of information about HIV/AIDS, three-fourths of the school and college students and one half of the workers reported television as the major source of information. Radio was also mentioned as the main source of information by workers group (45%). As much as 57% of college, 48% of school students and 40% of the workers have obtained information from the print media, while friends remained an important source of information among the college students (46%). Public campaigns regarding HIV/AIDS have reached to a very less extent among the study groups i.e., 36% among college students, 27% among hospital workers, and 15% among college students. The reach of health workers were also less such as 23%, 19%, 16% among the college, school and workers group. (Table-3)

### Mode of transmission

With regard to transmission of HIV infection most of the of the study population (2/3<sup>rd</sup>) was aware that the infection is transmitted through sex and that polygamy increases the risk of transmission. Blood transfusion as a mode of transmission of HIV/AIDS is well known to the college students (72%) but less aware among the school students (50%) and the workers group (35%). Sharing needles as transmission is well known in the college group (75%) and less known among the school and workers group (60%, 44% among school & workers group respectively). Nearly 3/4<sup>th</sup> of the school students were aware about mother to child (MTC) transmission. Knowledge regarding MTC was poor among the school and workers group (49%, 26% among school & workers group respectively). However, very few assumed that the infection is transmitted through air, mosquitoes or insects (3%, 11%, 20% among school, college and workers group respectively). (Table-2)

### Methods of prevention

In the present study most of the participants were aware about the condoms as a method of prevention of HIV/AIDS (70%, 60%, 52% among college, workers & school students respectively). There is a misconception about the existence of a vaccine that could prevent HIV/AIDS (18%, 26%, 41% of college, school students & workers group respectively). Three-fourths of the college and school students insisted on hygienic practices. (Table-2)

### Symptoms

The college students were aware about the symptoms of the disease (64%), while the school students and workers had less

Table 2: Awareness of HIV/AIDS

	Workers	School (High School undergraduates)	College (Pharmacy undergraduates)
	% Correct response	% Correct response	% Correct response
<b>KNOWLEDGE OF AIDS</b>			
1. Have you heard of AIDS	92	100	100
2. Causative agent for AIDS	10	38	55
3. Does HIV transmit genetically?	67	83	84
4. Do you think only female sex workers will get AIDS?	60	75	72
5. Do you think HIV is dangerous?	71	90	87
6. Can STDs increase the risk of getting AIDS?	62	55	67
7. Can AIDS patients live without its symptoms?	16	29	35
8. Can AIDS be cured	65	85	90
9. Do you believe on assurance of curing AIDS given by unauthorized medical practitioners?	50	87	88
<b>% Total Correct responses</b>	55	71	75
<b><math>\chi^2</math>*</b>	4.826 (p<0.05)	\$0.228 NS	
	##7.934 (p<0.01)		
<b>KNOWLEDGE ABOUT NACO</b>			
1. Do you know what this symbol is?	55	57	72
2. Have you heard of Red Ribbon Express?	10	28	55
3. Do you know where HIV can be tested? (ICTC)	7	7	20
4. Do you know about National AIDS Control Organization?	6	15	25
5. Have you come across the campaigns of NACO?	6	13	20
6. Do you know that the Indian government is giving free ART medication?	33	40	52
<b>% Total Correct responses</b>	26	36	49
<b><math>\chi^2</math>*</b>	1.983 NS	\$2.946 NS	
	##10.325(p<0.01)		
<b>KNOWLEDGE REGARDING MODE OF TRANSMISSION</b>			
1. Whether sex transmits AIDS?	60	61	60
2. Whether polygamy can transmit AIDS?	59	69	74
3. Do you think blood can transmit AIDS?	35	72	50
4. Can sharing needles transmit HIV?	44	75	60
5. Can HIV be transmitted from mother to child?	26	65	49
6. Can HIV be transmitted by air?	80	89	97
7. Can HIV be transmitted by insects?	80	89	95
8. Does avoiding mosquito bites prevent HIV transmission?	74	92	90
<b>% Total Correct responses</b>	57	77	72
<b><math>\chi^2</math></b>	*4.280(p<0.05)	\$0.421 NS	
	##8.164 (p<0.01)		
<b>KNOWLEDGE REGARDING METHODS OF PREVENTION</b>			
1. Use of Condoms can reduce the risk of HIV/AIDS	60	52	70
2. Monogamy can prevent AIDS transmission	61	53	57
3. Screened blood is essential to prevent AIDS transmission	37	57	60
4. Disposable needles can reduce transmission of AIDS	35	57	60

5. Is there a vaccine against AIDS?	59	74	82
6. Do hygienic practices prevent transmission of AIDS?	39	75	77
<b>% Total Correct responses</b>	49	68	62
<b>X<sup>2</sup></b>	*2.195 NS	\$0.549 NS	
	###6.673 (p<0.01)		

**KNOWLEDGE REGARDING SYMPTOMS OF AIDS**

1. Recurrent fever	33	46	66
2. Extreme weight loss	40	69	88
3. Chronic cough	24	24	36
4. Prolonged diarrhea	37	45	77
5. Skin problems	40	76	71
6. Cancer	25	15	
<b>% Total Correct responses</b>	38	45	64
<b>X<sup>2*</sup></b>	0.741 NS	\$6.533	
	###12.505 (p<0.001)	(p<0.05)	

\*Comparison between Hospital workers and School students, #Comparison between Hospital workers and College students  
\$Comparison between School students and College students, NS Not Significant

knowledge regarding the symptoms of HIV/AIDS (45%, 38% in school & workers group). (Table-2)

**Attitudes towards treatment and care (PLWHA)**

In our study, majority of college students had a favorable attitude towards PLWHA, stating that such patients should not be outcast from the society (61%) and that they should not be quarantined (77%) or socially discriminated (62%). Social discrimination aversion was reported by most of the school students (85%), but restriction at home (63%), job (62%) and as an outcast (59%) was also insisted by the school group. The overall favorable response among the workers was much less (40%). (Table-4)

**DISCUSSION**

The vision of NACO is that every person living with HIV has access to quality care and treated with dignity. NACO is committed to create awareness, endeavor people with

**Table 3: Source of Knowledge**

	Workers	School (High School)	College (Pharmacy undergraduates)
1. Television	55	71	73
2. Radio	45	39	30
3. News papers	40	48	57
4. Public campaigns	27	15	36
5. Rallies	17	2	39
6. Health workers	16	19	23
7. Friends	20	5	46
8. Relatives	3	7	12
9. Neighbours	5	2	11

**Table 4: Attitudes Towards PL WHA**

	Workers	School (High School)	College (Pharmacy undergraduates)
	<b>% Correct response</b>	<b>% Correct response</b>	<b>% Correct response</b>
1. Should HIV patients be outcaste from the society?	45	41	61
2. Should HIV patients be quarantined?	39	64	77
3. Do you think HIV patients should be separated at home?	20	37	36
4. Can HIV positive hold a job?	16	38	46
5. Do you feel that social discrimination of AIDS is more dangerous?	62	85	69
<b>% Total Correct responses</b>	36	53	58
<b>X<sup>2</sup></b>	*5.183(p<0.05)	\$0.324 NS	
	###8.852(p<0.01)		

\*Comparison between Hospital workers and School students  
#Comparison between Hospital workers and College students  
\$Comparison between School students and College students  
NS Not Significant

accurate, complete information regarding HIV/AIDS, and aims at building an enabling environment for those infected with HIV at state, district and at grass root level. To achieve these, several programs are conducted to promote condoms as effective mode of protection and to emphasize treatment of STD. NACO has tie ups with many corporate companies, has public/private partnerships in eradicating the threats of HIV, several memorandum of understanding for financial assistance to provide services such as free ART etc. In India, a number of international organizations are working with



NACO such as United Nations Program on HIV/AIDS (UNAIDS), Australian AID (AusAID), British AID (DFID), US Government Assistance (USG), German AID (GTZ), Bill and Melinda Gates Foundation (BMGF), Clinton Foundation (CF), Global Fund for AIDS, TB and Malaria (GFATM), International Labor Organization (ILO), United Nations Development Program (UNDP), United Nations Office of Drug Control & Crime in South Asia (UNODC), World Bank (WB), World Health Organization (WHO) and The International AIDS Vaccine Initiative (IAVI) to address HIV/AIDS issue by contributing their technical expertise and financial resources.

In India, adolescents (10-19yrs) comprise about 1/5<sup>th</sup> of the total population and Adolescent Education Program (AEP) was launched to cover the secondary and senior secondary schools throughout India. The third phase of NACP has a well framed approach to reach the youngsters through AIDS education, condom promotion, and improvement of established blood transfusion systems. The AEP, Red Ribbon Clubs and Link Workers Scheme are few initiatives of NACO to reach the youngsters. AEP focuses on avoiding harmful behavior like drug use, irresponsible sexual behavior and their relationships to HIV/AIDS.

The present study revealed that all the participants have heard of AIDS, but many of the workers could not relate the causative agent. This is comparable to the observations in previous studies.<sup>8</sup> Most of the study population has a wrong belief that only female sex workers and truck drivers will get AIDS. Only 2/3<sup>rd</sup> of the participants were aware about the fact that STI increases the risk of HIV/AIDS. Nearly 70% of the study participants were unaware that a healthy person can be a carrier, and transmit HIV.<sup>9,10</sup> This finding is less than the reports of NACO/UNICEF. Some of the study population still believes on the assurance of AIDS cure by unqualified medical professionals, which has to be taken care.

The symbol of NACO is known to most of the school and college students and to a lesser extent in the workers group. Red Ribbon Express, the world's largest mass mobilization campaign was conceptualized by Rajiv Gandhi Foundation and implemented by NACO. The project aimed at creating awareness, promotion of safe behavioral practices and curtails stigma and discrimination against PLWHA. Ministry of Railways, Nehru Yuva Kendra Sangathan (Ministry of Youth Affairs and Sports) and UNICEF are the other main partners of this initiative. Publicity to mobilize people are carried out through radio, TV, News papers, and outdoor activities prior to the train's arrival at the station. The Red Ribbon Express was known only among half of the college students. The study findings also reveal that NACO is less known among the participants. Apart from this, the services of NACO such as ICTC and campaigns related to HIV/AIDS

have also reached the participants poorly. Though NACO has taken several initiatives like awareness promotion through booklets, brochures, folders, short films which were produced by SACS, the outreach is less among the study population which is revealed from the study. There are about 355 ART centers in India and 12% of it is in Tamilnadu. Most of the school and workers population had not known about this fact and believe that treating AIDS is costly. One half of the college students had knowledge regarding the ART medicines and free issue by the government, the result of which is more than the previous reports.<sup>11,12</sup>

The major route of transmission of HIV/AIDS is still the heterosexual route (87.1%), followed by parent to child (5.4%) and 1% among injectable drug users. The sexual mode of transmission is well known to the participants and the fact that polygamy can increase the risk of HIV/AIDS is understood better, which is in consensus with previous reports.<sup>13,14</sup> In India, access to safe blood is possible through 1103 blood banks including 130 blood separation units and 10 model blood banks. Blood safety and transmission via sharing of needles and syringes is aware among the school and college students and to a lesser extent among workers which is similar to previous studies.<sup>15</sup> In India, condom use has been promoted since 1960 under National Family Planning Program for contraception, and its promotion was intensified with the reports of HIV. Since condoms are the most efficient method of preventing HIV/AIDS, several programs are launched by NACO such as Condom Social Marketing Program (CSMP) and Condom Vending Machine Program (CVMP). The awareness of condom as preventive methods of HIV/AIDS is well known to 2/3<sup>rd</sup> of the study groups. Previous findings have also reported the same.<sup>9</sup> Few of the workers and school students still believe that a vaccine could prevent HIV transmission, which needs to be clarified. Hygienic practices as methods of prevention are well understood by the school and colleges and less exposed to the workers. Prevention of parent to child program has been launched in India in 2001, and school and college students were found to be aware of the same, while workers were not. The symptoms of AIDS such as significant weight loss, recurrent fever, diarrhea and opportunistic infections were understood by college groups and less aware among others.<sup>10</sup>

The major source of information was found to be television and print media among college and workers group, followed by radio, public campaigns and health workers. Friends appeared to be an important source for discussion regarding HIV/AIDS. Several programs were initiated by SACS by programs through Sun TV and print media and these have reached general public, schools and colleges. Community Care Centers play a major role in providing treatment, care and support to PLWHA. Under NACP-III, there are 96

centers attached to ART centers and provide counseling, drug adherence, nutrition, treatment of opportunistic infections, and seek better community and family response towards PLWHA. There are hotlines/help lines in about 10 states in India to get clarified regarding HIV/AIDS. Though favorable attitudes have been expressed by all the study groups, some misconceptions about HIV/AIDS exist. Some of the study population expressed that PLWHA has to be outcast, quarantined in home and discrimination in work place. These are some of the issues that have to be addressed and clarified as previously reported.<sup>16,17</sup>

The study findings reveal that the knowledge about HIV/AIDS in college students is higher than the school students, while the school students have better knowledge when compared to the workers. This shows that education plays a major role in the awareness, and perceptions about HIV/AIDS. This study could not be extrapolated since the sample size was less and not a cross sectional study.

### Recommendations

HIV/AIDS curriculum should be included and frequent updating should be done. Use of different methods such as films, group discussions, dramas, puppet shows and role-plays must be incorporated. Frequent interpersonal communication and sensitization on stigma-related issues on HIV is recommended in schools and colleges. There is a strong need that school and college education must directly address the stigmatizing attitudes about HIV/AIDS, lacuna in knowledge, awareness and health resources. Better training programs with clear objectives, messages and appropriate methodologies could be planned to reach the hospital workers since they come across the patients infected with HIV/AIDS.

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