

## Knowledge and attitude toward AIDS/HIV among senior school students in Isfahan

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### ABSTRACT

**Background:** Considering the increasing spread of Human Immunodeficiency Virus (HIV) in the Middle East, informing about how it can be transmitted and prevented is the primary weapon against its spread. Determining the public information regarding HIV/AIDS and their attitude toward people with AIDS/HIV can provide basis for appropriate educational program in each community. So, we investigated knowledge and attitude toward AIDS/HIV among senior school students in Isfahan, Iran.

**Patients and methods:** A cross sectional survey among randomly selected high school students in Isfahan city was conducted. The students responded to an anonymous self administered questionnaire after orally consenting to participate in the study. Knowledge and attitude were scored. Descriptive and inferential statistics were used to analyze data by SPSS package.

**Results:** The total knowledge level of 60.2% of students was good, of 34.1% of them was moderate and 5.7% of subjects had poor knowledge levels, and total knowledge level was not significantly different among girls and boys. In the present study there were negative attitudes towards AIDS and HIV positive persons. In 68.6% of students the attitude was moderate, in 23.3% the attitude was good and in 8.1% of students the attitude was poor.

Journal and books were the main information sources in girls and in boys the main information source was TV.

**Conclusion:** Most respondents knew the main mode of transmission of HIV infection. Thus, while mass media approaches could be the most likely strategy for future educational efforts, education intervention in schools programs involving teachers and school consultants can be tailored appropriately to the special needs of students, so as to maximize their effectiveness.

**Keywords:** AIDS, Knowledge, Attitude, Students.

(Iranian Journal of Clinical Infectious Diseases 2008;3(2):93-98).

### INTRODUCTION

AIDS (acquired immunodeficiency syndrome) was first recognized among homosexual men in the USA in 1981 and subsequently in Europe and sub-Saharan Africa and since then there has been an

explosion in HIV transmission (1). There is a growing need for giving special attention to young people in the AIDS epidemic field world wide (2). According to UNICEF reports there are 11.8 million young people between 15-24 years living with HIV/AIDS (2).

Education about how AIDS is transmitted and prevented is the primary weapon against AIDS, because there is no treatment or vaccine to prevent

Received: 15 May 2007 Accepted: 30 January 2008

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its spread and drug therapy is very expensive. However prevention strategies must be culturally specific.

In 1994 UNESCO organized the Asian Regional planning seminar on AIDS and Education and recommended that by the end of 1994 every country in the region should develop a clear written policy on AIDS education, which would form basis of a national action plan for AIDS education within the school system (3).

There were 95 people with HIV/AIDS in Iran in 1987 and in 2004 this number was increased to 7108, the majority of them were young people at the age range of 25-34. In 1987, the transmission modes of infection were mainly via blood and blood products, while in 2004 were shared needles between addicted people (4, 5).

Because of unreasonable fears among most Iranian people that AIDS education promotes high risk behaviors, sexual relations are not openly discussed and so there are limited contents on HIV/AIDS and sex education in the school curriculum.

Knowing the public information regarding HIV/AIDS and their attitude toward people with AIDS/HIV (PWA) can provide a basis for appropriate educational program in each community. So, we investigated knowledge of and attitude toward AIDS/HIV among senior school students in Isfahan city, Iran. We also assessed the sources of their information about AIDS/HIV.

We hope the results would likely provide an empirical cultural basis for developing a specific intervention for preventing HIV infection among young people in Iran.

## **PATIENTS and METHODS**

In a cross-sectional survey a total of 350 high school students participated during spring, 2003.

Ten General high schools (5 girls' school and 5 boys' school) were selected by clustering method

from 5 different educational districts of Isfahan city. To ensure homogeneity of the samples, special- purpose and private high schools were not included. Investigators visited the education manager, also the principals of schools prior to data collection for permission. Students were chosen by randomization method from the public Schools that presented Mathematical, Natural (experimental) and also humane science fields. In general 36 students were selected from each school. Data collection tool was a self administered questionnaire. The questionnaires' items were developed based on a literature review.

During regular school hours the questioners who were two pediatric nurses attended the classrooms, explained the purpose of the study for the students and then asked them to fill in questionnaire voluntarily and anonymously and return them at the same hour.

The questionnaire was divided into four sections: demographic characteristics, knowledge, attitude and beliefs, and source of information regarding AIDS/HIV.

The knowledge items were in six domains as follows:

- 1) Disease characteristics (General information)
- 2) Body fluids containing virus
- 3) Indirect Mode of transmission
- 4) Risky Behaviors
- 5) Person to person transmission
- 6) Preventive measures

The HIV/AIDS knowledge was measured using 42 true/false/not-sure questions, with the correct response scored as "1" and incorrect response or not-sure as "0". The correct responses were summed to yield a single knowledge score. A higher score indicated a higher level of HIV/AIDS knowledge, reflecting more knowledge and less mythical ideas each respondent holds regarding HIV/AIDS. To categorize the student's level of knowledge, a scoring system was developed as follows:

<20: as poor knowledge, 20-29: as moderate knowledge and  $\geq 30$ : as good knowledge.

Attitudes toward HIV/AIDS were assessed with 25 question on a 5 point Likert type scale ranging from "strongly agree" (score 4) to "strongly disagree" (score 0) for positive (true) attitude and from "strongly agree" (score 0) to "strongly disagree" (score 4) for negative (false) attitude and beliefs. Correct responses to 100% of the questions weighed as score 4.

To categorize the students' overall attitude, the scores were considered as follows: Score <2: as poor attitude, score=2-2.99: as moderate attitude and score  $\geq 3$ : as good attitude.

Descriptive statistics were used to analyze data. Inferential statistics (t student,  $\chi^2$ ) were also applied to compare the groups and to evaluate association between knowledge and attitude and demographic characteristics of students through SPSS package. P value <0.05 was considered significant.

## RESULTS

The complete response rate was 90% from a total of 350 high school students participated and the remaining 10% of questionnaires were incomplete.

Regarding general information about the disease the great majority of students knew that AIDS was a life threatening disease, caused by a virus. About two third of them knew that AIDS was a kind of breakdown in the body's immune defenses and also its incubation period was prolonged. In this domain the knowledge level in most of the students (87.7%) was good (table 1).

Regarding body fluids containing virus, most of the respondents (>90%) knew that male and female sexual secretions and blood were the main sources of infection, however only a small percentage (20.9%) of the students knew that salivary glands secretion could be one of the sources of infection.

In this domain, the knowledge level of near half of the students was good and the other half level was moderate (table 1).

Regarding indirect modes of transmission 88.8% of students knew that AIDS could not be transmitted by objects (e.g. telephone, money, ...), however, there were many misconceptions about role of mosquito bite in transmission of virus. About two third of students knew that virus could be also transmitted by menstruation blood and bleeding from injured person with HIV (table 1).

In this field, the knowledge level in near half of the students was good and in 25.6 % of them moderate.

Regarding risky behaviors the majority of students (>90%) knew that HIV was transmitted by intimate contacts and sharing blades, but not by shaking hands and speaking with infected person, however they misbelieved about sharing utensils and dressings. In this domain, two third of students had good level and 22.3% of them had moderate level of knowledge (table 1).

Regarding person to person mode of transmission, the majority (>90%) of the students knew the female to male and vice versus transmission, however about one third of students did not know that virus could be transmitted from female to female, during delivery and breast feeding.

In this domain half of the students had good level of knowledge and one third of them had moderate level (table 1).

In the domain of HIV preventive measures, the majority (>95%) of the students knew that using disposable syringes and having individual blades at barber shop could protect them from HIV infection. However there were some misconceptions: 20% of students thought there was a vaccine to prevent the disease and about two third believed early treatments of patients with AIDS/HIV could be resulted in prevention of infection spread.

**Table 1.** Knowledge levels of students about AIDS

	% of girls			% of boys			% of total students		
	P	M	G	P	M	G	P	M	G
General information	0.6	7.6	91.8	4.7	11.8	83.8	2.7	9.7	87.7
Bodily fluid containing virus	7.6	46.5	51.8	4.1	44.8	51.2	3	45.6	51.5
Indirect mode of transmission	15.9	25.9	58.2	24.1	25.3	50.6	20	25.6	54.4
Risky behaviors	8.9	12.9	78.2	10.6	31.7	57.6	9.8	22.3	67.9
Person to person transmission	12.4	30	57.6	9.5	30.5	60	10.9	30.3	58.8
Preventive measures	1.8	46.4	51.8	4	44.8	51.2	2.9	45.6	51.5
Total knowledge	5.4	28.2	66.4	6	40	54	5.7	34.1	60.2

P=Poor, M=Moderate, G=Good

In this domain the knowledge level of near half of the students was good and half of them moderate. (table 1).

Generally, the total knowledge level of 60.2% of students was good, 34.1% moderate and 5.7% of subjects had poor knowledge levels. Total knowledge level was not significantly different among girls and boys (table 1).

When asked about their attitudes toward person with AIDS (PWA) (e.g. attending schools, visiting their houses, living on their homes ...) 70.6% of males and 57.6% females believed that PWA should be isolated in designated institutions. Half of the students concerned that their regular contacts with PWA might lead to the transmission of infection to their friends and family members. Majority of students believed that PWA was deserved to death and every interaction with PWA would lead to HIV infection. Majority of them also believed that only gay men got AIDS.

The majority of students (98.2% of females and 95.2% of males) thought that prevention measures of infection ought to be educated by mass media, 83.5% of females and 86.5% of males believed that all adolescents should receive sexual education.

About two thirds of students did not believe that IV drug users should be given free needles and about half of them did not believe that the rights of PWA were the same as other patients.

Overall in 68.6% of students (64.5% of boys and 73% of girls) the attitude was moderate, in 23.3%

of them (24.5% of boys and 22.5% of girls) the attitude was good and in 8.1% of students (11.3% of boys and 4.5% of girls) the attitude was poor (table 2).

**Table 2.** Attitude levels towards AIDS/HIV

Attitude	Girls	Boys	Total
Poor	8 (4.5)*	19 (11.3)	27 (8.1)
Moderate	124 (73)	110 (64.5)	234 (68.6)
Good	38 (22.5)	41 (24.2)	79 (23.3)
Total	170 (100)	17 (100)	340 (100)

\* Frequency (%)

The mean score of attitude among girls was  $2.67 \pm 0.41$  and among boys was  $2.56 \pm 0.41$  and this difference was significant ( $t = 2.19$ ,  $p = 0.29$ ).

The study revealed that booklets of Ministry of Health and Medical Education and own readings from different journals and books were the main information sources in girls and the main information sources in boys were TV, booklets and own reading about AIDS.

In 48.8% of girls and 24.9% of boys siblings had no effective role for giving information. School consultants had also no effective role for giving information in 45.9% of girls and 41.2% of boys. Role of the family physician was not significant in education of adolescents.

## DISCUSSION

This study revealed several important findings. The level of HIV/AIDS knowledge among students

was moderate. This finding is similar to a previous Iranian study (6) and studies in other countries (7,8) but is in contrast to the study of Ferrer L. et al that showed good level of HIV/AIDS knowledge among the Chilean university students (9) and also the study of Ganczak M. et al which showed the poor level of HIV/AIDS knowledge among 75% of Arab university students (10).

There were many misconceptions about HIV transmission, e.g. by mosquito bite, sharing utensils and dressing. This problem was also addressed by previous investigators (6,7,11). In our study a considerable proportion of respondents (80%) thought there was a cure for AIDS. This is consistent with Agrawal et al study (11) and the misconception is one of the risk factors for contracting the disease. A total of 20% of the students thought there was a vaccine for prevention of AIDS. This rate is lower than the findings in other studies (9,10,12).

Female students demonstrated a slightly higher level of knowledge in comparison with male students, but the difference was insignificant. This is consistent with the previous study in Iran and other studies (6) and is in contrast with studies of Agrawal et al (11), Singh et al (13) and Aomereore et al (14).

In the present study there were negative attitudes towards AIDS and HIV positive patients. Majority of students believed that PWA should be isolated in designated institutions, PWA were deserved to death and should not receive care, only gay men got AIDS. There were similar reports by a third of students in a previous study in Iran (6) and in the studies of Agrawal et al (11) and Ganczak et al (10).

The present study revealed significant correlation between knowledge level and attitude, which is consistent with the findings in study of Ross et al (15).

Findings showed that the main information sources were T.V, educational booklets and own readings from books and magazines, while

teachers, school consultants, and family members and health professionals were less effective sources for education of the students. It is consistent with Westrupp et al study (16).

Majority of respondents knew the main modes of HIV transmission. Thus, while mass media approaches will be the most likely strategy for future educational efforts, educational intervention programs in schools involving teachers and school consultants can be tailored appropriately to the special needs of students, so as to maximize their effectiveness.

Parents must be included in the agenda of health education plans. Also physicians should be encouraged to promote knowledge level of families at private offices and public health centers.

## ACKNOWLEDGMENT

We are grateful to the research vice chancellor of Isfahan University of Medical Sciences for his financial support, and to the head of Education Organization and principals of schools in Isfahan city, and also all the students who participated in the study.

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