

# Is HIV/AIDS challenging among high school students in Rasht, Iran? A descriptive-analytical study

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## Abstract

**Introduction:** Acquired immunodeficiency syndrome (AIDS) is one of the most serious health problems and one of the deadliest communicable infectious diseases of this century. Increasing knowledge and changing wrong beliefs and behaviors is the best way to prevent this disease. The purpose of this study was to determine the knowledge and attitude of high school students about AIDS.

**Material and methods:** This descriptive-analytical study was performed on 500 high school students at secondary high school level in experimental field in Rasht City. At first, some schools were randomly selected as clusters and then, the required samples from each school were selected by systematic random sampling. The research tool used in this study was a questionnaire consisting of three sections: general information, knowledge assessment, and attitude assessment. The data were entered into SPSS software and analyzed using  $\chi^2$  test.

**Results:** In terms of knowledge level, 347 (69.4%) students had sufficient knowledge, 142 (28.4%) presented medium, and 11 (2.2%) insufficient level of AIDS knowledge. In terms of attitude level, 354 (70.8%) had positive attitude, 145 (29%) had neutral attitude, and 1 (0.2%) had negative attitude. There was a statistically significant difference between the level of knowledge of students with gender, educational grade, and school type ( $p = 0.0001$ ).

**Conclusions:** The results of this study indicate the necessity of continuation of formal and informal education, and efforts of educational, health, and cultural officials in order to teach AIDS control and prevention methods.

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**Key words:** AIDS, HIV AIDS knowledge, attitude, students with HIV, Rasht City.

## Introduction

Acquired immunodeficiency syndrome (AIDS) is one of the most serious health problems and one of the deadliest communicable infectious disease of the present century [1]. The emergence of AIDS and lack of knowledge on the dis-

ease can easily put adolescents at risk. It often infects people at the age of onset of sexual activity, which coincides with the onset of adolescence [2, 3]. The World Health Organization announced in 2010 that the number of people with the disease in developing countries was up to five times

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higher than those recorded [3]. In some countries, for cultural or religious reasons, young girls and women tend to maintain their virginity before marriage, and sometimes, they initiate the types of sexual intercourse that are associated with a higher risk of human immunodeficiency virus (HIV) transmission. On the other hand, there are street children, who sometimes practice prostitution for shelter or food, or they get raped due to lack of parents. Therefore, the prevalence of HIV infection in this group is also high [4].

There is currently no specific cure or vaccine to prevent the disease. New therapies and antiretroviral drugs only prolong the life of patients [5]. AIDS is considered as a disgraceful disease in Iran, which causes the patient to be rejected by the society and family. Thus, AIDS causes isolation, depression, humiliation, and suicide in the affected group [6]. Adolescents are at risk for AIDS because of lack of access to information on the disease, prevention methods, and risky sexual behaviors. Education and promotion the awareness of at-risk people is of high importance [7, 8]. The trend of the disease has decreased in European and American countries due to education and awareness programs, but it is progressing in Asian countries.

According to experts, since HIV transmission occurs mostly through sexual contact with an infected person, contaminated blood and blood products, and needles and syringes, raising people's awareness on HIV/AIDS can greatly help in reducing the growing rate of AIDS [9]. As studies show, misconceptions and lack of awareness on this disease are very common among adolescents, and it is clear that good quality education for all children and adolescents is essential in the fight against this epidemic to save lives that are endangered by ignorance and fear of the disease [10]. The important point is that although schools have a fundamental commitment to implement and develop adolescent AIDS prevention/intervention programs, the fears of many Iranians who believe that AIDS education increases risky behaviors, have caused sex education on HIV/AIDS transmission not taken seriously in schools and universities. Therefore, it is necessary to recognize the knowledge, beliefs, and even common misconceptions among people, especially this group of adolescents on AIDS.

## Material and methods

### Study design and population

The present study is a descriptive-analytical study, and it was conducted in two parts: knowledge assessment was done with a descriptive-analytical method, and attitude assessment was completed using a descriptive method. The statistical population was high school students in Rasht. In this study, two-stage random sampling method was used.

### Study tools

A questionnaire was used in this study. Students were explained that an incorrect answer in the questionnaire had

no negative score. Respondents were not restricted to complete the questionnaire during one session. After completing the questionnaire, each respondent was provided with an answer sheet containing correct answers. The research questionnaire consisted of 31 questions in three parts. In Mazloomi *et al.* study, the validity of this questionnaire was verified and validated by several experts in the field of infectious diseases and health education [3]. Cronbach's  $\alpha$  index was applied to measure its reliability and to confirm the internal consistency of the questionnaire. The reliability of the questionnaire was calculated as 0.80 by Cronbach's  $\alpha$ . The first part of the questionnaire was on students' general and demographic information, such as gender, parental education, parental occupation, educational background, and school type. The second part was about the students' awareness, which consisted of 20 questions. The students' answers to the questions were "yes" or "no". A correct answer to question had a 1 score and no answer or wrong answer had a 0 score. Zero to 10 was considered as insufficient knowledge, 11-15 as medium, and 16-20 as sufficient. The third part of the questionnaire was assessing students' attitude. The scoring method was based on a 5-point Likert scale, including "strongly disagree" (score 1), "disagree" (score 2), "neutral" (score 3), "agree" (score 4), and "strongly agree" (score 5). However, this method of scoring was reversed for questions 2, 3, 5, 6, 7, 8, 9, 10, and 11. To obtain the overall score of the questionnaire, the sum of scores for all questions was calculated. The score ranged from 11 to 55. A score between 11 and 25 was considered as negative (undesirable) attitude, score 26-40 as neutral attitude, and score 41-55 was deemed positive (desirable) attitude. The sample size was estimated as 500 responders [11].

In this research, participants were not subjected to any harm in any way, whatsoever. Respect for the dignity of participants was prioritized. Full consent was obtained from the responders prior to the study. The protection of participants privacy was ensured. An adequate level of confidentiality of the research data was confirmed. Anonymity of individuals and organizations participating in the research was also confirmed. In the current study, any deception or exaggeration about the aims and objectives of the research was avoided.

### Statistical analysis

After data collection, the information were entered into SPSS software version 16, and  $\chi^2$  test was used to investigate the significant relationship between the data and variables studied. The significance level of tests in this study with  $p < 0.05$  was considered as two-way and statistical significance.

## Results

In this study, a total of 500 students from the secondary level of high school in the experimental field were investigated. The frequency and percentage of students' gender, age, parents' education, parents' occupation, type of school, level of knowl-

**Table 1.** Frequency of demographic findings in the subjects

Variable	Frequency	Percentage
Gender		
Male	186	2/37
Female	314	8/62
Total	500	100
Age		
15	93	6/18
16	237	4/47
17	159	8/31
18	11	2/2
Total	500	100
Father's education		
Undergraduate education	24	8/4
Diploma	99	8/19
Associate degree	45	9
Bachelors' degree	159	8/31
Higher education	173	6/34
Total	500	100
Mother's education		
Undergraduate education	15	3
Diploma	121	2/24
Associate degree	48	6/9
Bachelors' degree	201	2/40
Higher education	115	23
Total	500	100

edge, and attitude about AIDS are shown in Table 1. According to Table 2, there was a statistically significant difference between the level of students' knowledge and gender ( $p = 0.0001$ ). The frequency of people with sufficient knowledge on AIDS was significantly higher in male students than females (Table 2). In this study, a statistically significant difference was found between the level of students' knowledge and their educational level ( $p = 0.0001$ ); so that, people with higher level of education had a higher level of awareness than those with lower level of education (Table 3). Data analysis and  $\chi^2$  test revealed that there was a significant difference between the level of students' knowledge and the type of school ( $p = 0.0001$ ). People attending public schools presented a higher level of awareness than those in private schools (Table 4).

## Discussion

HIV is a serious medical phenomenon, but it is more important as a personal behavior and social and cultural phenomenon, with adolescents identified as at-risk population for HIV infection [3]. Daily, 6,000 people under the age of 25 are getting infected [12]. The importance and seriousness of the problem

**Table 2.** Level of knowledge of secondary high school students on AIDS by gender

Variable mode	Frequency	Percentage
Father's job		
Laborer	20	4
Employee	227	4/45
Freelance job	173	6/34
Other	80	16
Total	500	100
Mother's job		
Employee	168	6/33
Freelance job	35	7
Housewife	231	2/46
Other	66	2/13
Total	500	100
Educational level		
10	254	8/50
11	229	8/45
12	17	4/3
Total	500	100
School type		
Public school	297	4/59
Private school	203	6/40
Total	500	100
Level of awareness		
Insufficient	11	2/2
Medium	142	4/28
Sufficient	347	4/69
Total	500	100
Attitude level		
Negative	1	2/0
Neutral	145	29
Positive	354	8/70
Total	500	100

of AIDS and its growing prevalence among adolescents contributed to the uprising of the "Healthy People by 2010" program, which objectives are to increase the awareness of Iran's students about AIDS. Moreover, Iran has also emphasized the prevention and treatment of AIDS in its fourth plan of economic, social, and cultural development [13]. Our study showed that 69.4% of students had sufficient knowledge on AIDS. In this respect, the results of our study were consistent with those of Ranjbar *et al.* [11]. Also, 70.8% of students had a positive attitude towards AIDS. Our study was in line with the study of Arab *et al.* [14], Ranjbar *et al.* [11], and Mazloomi *et al.* [3].

The present study showed that the percentage of people with sufficient knowledge was significantly higher in male stu-

**Table 3.** Level of secondary high school students' knowledge on AIDS based on grade

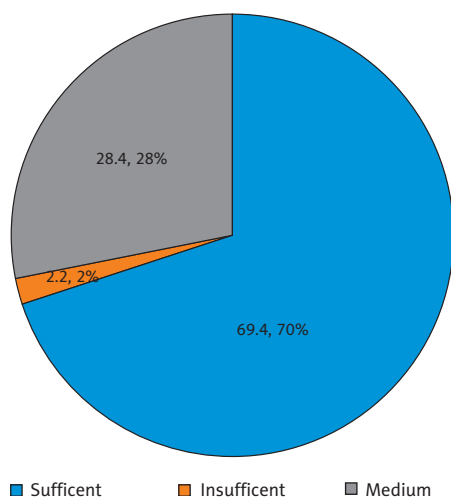
Parameter	Level of awareness			Total		
	Sufficient	Medium	Insufficient			
Grade						
10	Frequency	189	64	1	254	0.0001
	Percentage	4.74	2.25	4.0	0.100	
11	Frequency	142	77	10	229	
	Percentage	.062	6.33	4.4	0.100	
12	Frequency	16	1	0	17	
	Percentage	1.94	9.5	00.	0.100	
Total	Frequency	347	142	11	500	
	Percentage	4.69	4.28	2.2	0.100	

\*Based on  $\chi^2$  test

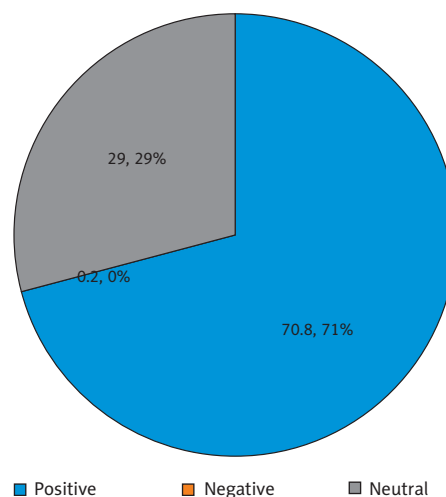
**Table 4.** Level of secondary high school students' knowledge on AIDS based on school type

Parameter	Level of awareness			Total		
	Insufficient	Medium	Sufficient			
School type						
Public school	Frequency	1	66	230	297	0.0001
	Percentage	0.3	22.2	77.4	100.0	
Private school	Frequency	10	76	117	203	
	Percentage	4.9	37.4	57.4	100.0	
Total	Frequency	11	142	347	500	
	Percentage	2.2	28.4	69.4	100.0	

\*Based on  $\chi^2$  test



**Figure 1.** The level of knowledge of study subjects towards HIV



**Figure 2.** The level of attitude of study subjects towards HIV

dents than in the female group. In this respect, our study was inconsistent with the study of Ranjbar *et al.* [11] and Mazloomi *et al.* [3], in which females were more aware than the male group. This difference may indicate a lack of proper education for female students in our study, which emphasizes the need for further improvement of the educational level of this at-risk group.

Increasing the educational level means creating the capacity in students to teach higher-level science. Therefore, it is expected that with the increase in the level of education, students will be more knowledgeable. Therefore, according to this general rule, there was a statistically significant difference between the level of knowledge and level of educa-

tion among high school students ( $p = 0.0001$ ). The participants with higher educational level presented a higher level of awareness than those with lower educational level. In this respect, the results of our study were not in line with that of Ranjbar *et al.*, in which there was a significant relationship between educational level and knowledge [11]. This result confirms our understanding of students' awareness, which suggests that as the educational level grows, the awareness should increase. Awareness and attitude are two close-related factors that unfortunately, sometimes does not receive much attention as needed in the educational aspect.

The type of school can also be an effective element in students' awareness. Exceptional talents schools, given the type, level, and quality of education, can increase the students' awareness and knowledge more than other schools. In this study, there was a significant difference between the level of students' knowledge and the type of school ( $p = 0.0001$ ). People in public schools presented a higher level of awareness than responders from private schools. This discrepancy could be due to the selection of exceptional talents schools throughout the city as public schools and the greater number of students compared to the other schools under study.

In this study, we focused only on high school students in District 2, Rasht City, which has limited our study community. All information obtained from the students remained confidential. The results of the research were published in the form of group information, and the results were presented without mentioning names and personal details. However, the sample size was rather small. Basing the study on a larger sample size could have been generated more accurate results. The scope of discussions was one of the other limitations of this study. Since we did not have many years of experience of conducting researches and producing academic papers of large size, the scope and depth of discussions in the paper were compromised on many levels compared to the works of experienced scholars. It is recommended to pay more attention in educating about this disease in order to raise the awareness and attitude of different segments of society, especially in high-risk groups, such as students, to control the disease in the future.

## Conclusions

The level of knowledge and attitude of the subjects was relatively good, although there were some uncertainties and misunderstandings about the most important ways of transmitting and not transmitting the disease as well as prevention methods. The results of this study and other related researches indicate the necessity of continuing formal and informal education, and efforts of educational, health, and cultural authorities in order to teach AIDS control and prevention methods. In addition, the results of this study can draw the attention of health authorities and social planners of the country to the factors, which influence students' knowledge and attitude. Failure to pay attention to these factors can affect the physical and mental health of students who are the future of this country.

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## Conflict of interest

The authors declare no conflict of interest with respect to the research, authorship, and/or publication of this article.

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