Human immunodeficiency virus/acquired immunodeficiency syndrome knowledge among high school students in Kırıkkale province of Turkey

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Abstract

Background: The purpose of the present study was to assess the existing level of knowledge of high school children about human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) and the sources of their information.

Materials and Methods: A cross-sectional survey was conducted in two high schools in Kırıkkale, Turkey and data were collected by a self-administered questionnaire. Multi-stage sampling technique was used to obtain a representative sample. Results: Four hundred and seventy three participants; 230 males and 243 females were analyzed. Their ages ranged from 15 to 19 years with a mean age of 16.81 ± 1.27. 92.2% of the students claimed to have heard about HIV/AIDS prior to the study with slightly more females than males. Although with some misconceptions, majority of the participants knew that HIV is not transmitted by sharing meals, casual contact, and sleeping in the same room and using the same bathroom. 93.4% identified HIV/AIDS as a life-threatening disease and 27% believe that there is a cure for AIDS. 64% and 22.8% respectively believed that the people can protect themselves by using condoms and by avoiding sexual contact. Internet was preponderantly claimed as the most important source of information about HIV/AIDS. Conclusion: Empirical evidence from this study suggests that the students have a fairly high knowledge of HIV/AIDS. This is not without some misconceptions about the prognosis of the disease. Internet was the major source of HIV/AIDS information.

Key words: Adolescents, human immunodeficiency virus/acquired immunodeficiency syndrome, information, knowledge

INTRODUCTION

Since its emergence in 1981, the human immunodeficiency virus (HIV) pandemic has become one of the most challenging infectious diseases in Public Health. Entering its’ third decade, virtually every country has been affected by it. Estimates of a 2011 report showed that there are 34 million people living with HIV (PLWHA), 2.7 million new infections, and 1.8 million HIV-related deaths worldwide.[1] In Turkey, the first case of HIV was reported in 1985. This was followed by a rapid increase in the number of cases. According to the findings of UNAIDS, in 2008 the number of people that had contracted HIV/AIDS in the world decreased, however, the figures in Turkey turn out to be the opposite. The essential reasons of this increase may be explained by the perception that “there is no HIV in Turkey,” “there is no priority for HIV/AIDS” according to the Turkish Republic’s Health Ministry data showing there were 2544 HIV/AIDS cases in our country.[2] A total of 1921 of these people have reached the AIDS stage and 623 people are HIV-positive. School children of today are exposed to the risk of being victims of HIV/AIDS - which was quite unknown to their predecessors a few decades...
ago. The epidemic of HIV/AIDS is now progressing at a rapid pace among young people. Studies have reported that young people form a significant segment of those attending sexually transmitted infection (STI) clinics and those infected by HIV.[3,4] Schools are the key settings for educating children about HIV/AIDS and for halting the further spread of the HIV infection. Success in carrying out this function depends upon reaching children and young adults in time to reinforce positive health behaviors and alter the behaviors that place young people at risk. Schools reach children and adolescents between the ages of 5 and 18, and have excellent resources for delivering effective education: Skilled teachers; an interactive educational process that occurs over time; a variety of learning opportunities; materials and methods; and the ability to involve parents in their children’s learning.[5]

There is a dearth of literature with respect to knowledge and attitude of Turkish secondary school students about HIV/AIDS. This study was intended to fill this gap.

MATERIALS AND METHODS

Study area

Research was performed in the Kırıkkale City. Kırıkkale is the capital of the Kırıkkale Province in the Central Anatolia region of Turkey. It is located 80 km east of Ankara. According to the 2010 census, the population of the province is 276,647, of which 193,093 live in the city of Kırıkkale.

Education in Turkey

Basic education in Turkey consists of 9 years of schooling: 6 years of primary school (6-14 year-old pupils) and 3 years of high schools (15-19 year-old pupils). The basic 6-year schooling is compulsory. Basic education is followed by 3 years of secondary education, (high school education). High school lasts 4 years, with some high schools having an additional year of preparatory classes in a foreign language. The different kinds of high schools of the Turkish education system include: Public High Schools, the standard type; Anatolian High Schools which traditionally provided more lessons in a selected foreign language (English, German, or French), although the language program has been substantially reduced since 2006; Imam-Hatip High Schools which have more lessons about religion and Arabic; Science High Schools focusing on science education; Social Sciences High Schools, Teacher High Schools, Police and Military High Schools, Vocational Schools, which focus on a certain type of profession such as Tourism Vocational High Schools, Industrial Vocational High Schools, and Electrical Vocational High Schools; and finally, Private High Schools, which further departmentalize into the aforementioned systems of state schools.[6]

Survey population

Information about the schools was obtained from the State Ministry of Education. There are 27 government secondary schools and one private secondary school in the study area. Two secondary schools were randomly selected from the list with a total population of 682 students. The study was designed to involve all registered students but some students did not consent to participate in the exercise whereas some students were absent from school during the administration of the questionnaire.

Out of the number of questionnaires administered, 473 were adequate for analysis and interpretation.

The survey instrument

A structured self-administered paper questionnaire was distributed and filled by the participants. It had two major sections. The first part tested their knowledge about causes, mode of transmission, prevention, and treatment of HIV/AIDS. This section was adapted with slight modification from the questionnaire developed by the Horizons and used by the Population Council.[7] The second part was on sources of information on HIV/AIDS which was adapted from the questionnaire used by the City of Long Beach Department of Health and Human Services.[8]

Instrument administration

The entire schedule was explained to the sample students and all the queries raised by them were clarified. Care was taken to minimize consultation among the school children and no name was recorded. Participants were given an hour to complete the questionnaire. Upon completion, the papers were retrieved immediately and handed over to the researcher for analysis.

Data analysis

The statistical package used for the analysis was SPSS for Windows version 16 (SPSS Inc. Chicago Illinois, USA). Analysis included frequency. A Chi-square test for independence was used to test for significant difference.

RESULTS

The responses of 473 students were analyzed; 230 (48.6%) were males and 243 (51.4%) were females. Their ages ranged from 15 to 19 years, with a mean of 16.81 (SD = 1.27) [Table 1].

Majority of the students (92.2%) claimed to have heard (with a statistically significant difference from those that did not $\chi^2 = 4.24, P = 0.40$) about HIV/AIDS prior to the study [Table 2]. This trend was also observed in the class distribution [Table 1]. There were a slightly more female (94.6%) than male students (89.6%). Concerning
how an AIDS virus is transmitted, 2.7% of the students agreed that the virus can spread by sleeping in the same room with an infected person; 15.6% said by using the same bathroom; 17.1% claimed it can spread by sharing meal; 2.75% believed the virus can be transmitted by shaking hands, and 2.7% said by touching or hugging. 31.7% of the students claimed that the AIDS virus can be transmitted via kissing and more than half (57.5%) claimed that the virus is transmitted by mosquito bites [Table 2].

The findings also revealed that 76.5% of the students agreed that virus can be transmitted from a pregnant mother to an unborn baby; 92% know that the virus can be transmitted by blood transfusions, and 89.2% believed it can be transmitted by unsterile instruments.

64% of the students believed that people can protect themselves by using condoms and 22.8% by avoiding sexual contact.

Approximately 88.6% of the students believed that a healthy-looking person can have AIDS. 93.4% of the students identified HIV/AIDS as a life-threatening disease whereas 51.6% agreed they can describe what a person who has AIDS looks like. 27% believed that there is a cure for AIDS, and only about 3% thought that the government is doing enough to educate students and people about the disease.
Aysıkç et al.: HIV/AIDS knowledge among high school students

2.272 1 0.132
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4.853 1 0.028
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4.562 1 0.033
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3.483 1 0.062
5.511 1 0.019
7.944 1 0.005
209
9
0.261 1 0.610
362
0.026 1 0.872
10
230
435
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442
108
212
175
4.285 1 0.038
3.993 1 0.046
71
32
13
Total
208
422
436
79
94
2.272 1 0.132
1.711 1 0.191
272
0.340 1 0.560

AIDS is a 100% fatal but preventable disease. Since there
in Turkey. It is one of the world’s leading infectious killers.

According to the latest estimates
estimated 33.2 million persons being affected worldwide.

Table 2: Gender distribution of respondents that says yes to the test questions on human
immunodeficiency virus/acquired immunodeficiency syndrome

| Statements/Questions                                      | Female | Male | Total | χ²  | df | P   |
|----------------------------------------------------------|--------|------|-------|-----|----|-----|
| Have you ever heard of HIV or the disease called AIDS?   | 230 (94.7) | 206 (89.6) | 436 (92.2) | 4.237 | 1  | 0.040 |
| A person can get AIDS by sleeping in the same room with
an infected person                                      | 3 (1.2) | 10 (4.3) | 13 (2.7) | 4.285 | 1  | 0.038 |
| A person can get AIDS by using the same bathroom with
an infected person                                       | 36 (14.8) | 38 (16.5) | 74 (15.6) | 0.261 | 1  | 0.610 |
| A person can get AIDS by holding hands with an
infected person                                           | 4 (1.6) | 9 (3.9) | 13 (2.7) | 2.272 | 1  | 0.132 |
| A person can get infected with the AIDS virus by sharing
a meal with a person who has HIV                           | 32 (13.2) | 49 (21.3) | 81 (17.1) | 5.511 | 1  | 0.019 |
| A person can get AIDS by touching or hugging someone
with AIDS                                                  | 4 (1.6) | 9 (3.9) | 13 (2.7) | 2.272 | 1  | 0.132 |
| A person get AIDS by sitting next to a person with AIDS   | 9 (3.7) | 11 (4.8) | 20 (4.2) | 0.340 | 1  | 0.560 |
| You can get AIDS from kissing someone who has AIDS       | 71 (29.2) | 79 (34.3) | 150 (31.7) | 1.436 | 1  | 0.231 |
| A person can get infected with the AIDS virus through
mosquito bite                                               | 129 (53.1) | 143 (62.2) | 272 (57.5) | 3.993 | 1  | 0.046 |
| Can the virus that causes AIDS be transmitted from a
pregnant mother to her unborn baby?                        | 192 (79.0) | 170 (73.9) | 362 (76.5) | 1.711 | 1  | 0.191 |
| A person can get infected with the AIDS virus through
sterile instruments and needle prick                       | 224 (92.2) | 198 (86.1) | 422 (89.2) | 4.562 | 1  | 0.033 |
| A person can get infected with the AIDS virus through
blood transfusion                                         | 223 (91.8) | 212 (92.2) | 435 (95.0) | 0.026 | 1  | 0.872 |
| People can protect themselves from the AIDS virus by
using a condom correctly every time they have sex          | 127 (52.3) | 175 (76.1) | 302 (63.8) | 29.054 | 1  | 0.000 |
| People can protect themselves from getting infected with
the AIDS virus by not having sexual intercourse            | 64 (26.3) | 44 (19.1) | 108 (22.8) | 3.483 | 1  | 0.062 |
| A person who looks healthy can be infected with the
AIDS virus                                                 | 220 (90.5) | 199 (86.5) | 419 (88.6) | 1.882 | 1  | 0.170 |
| You can describe what a person with AIDS looks like       | 150 (61.7) | 94 (40.9) | 244 (51.6) | 20.585 | 1  | 0.000 |
| AIDS a life-threatening disease                           | 233 (95.9) | 209 (90.9) | 442 (93.4) | 4.853 | 1  | 0.028 |
| There is a cure for AIDS                                  | 71 (29.2) | 55 (23.9) | 126 (26.6) | 1.702 | 1  | 0.192 |
| Do you think the government is doing enough to deal
with HIV/AIDS?                                             | 2 (0.80) | 12 (5.2) | 14 (3.0) | 7.944 | 1  | 0.005 |

Table 3: Gender distribution of respondent sources of acquired immunodeficiency syndrome information

| Sources of information               | Gender | Total (%) |
|-------------------------------------|--------|-----------|
| From your parents                   | 51     | 33        | 84 (17.8) |
| Television                          | 116    | 110       | 226 (47.8) |
| Internet browsing                   | 156    | 162       | 318 (67.2) |
| Newspapers/handbills                | 73     | 76        | 149 (31.5) |
| From school                         | 24     | 8         | 32 (6.8)   |
| Doctors/nurses/other hospital worker| 12     | 6         | 18 (3.8)   |
| From friend or relatives            | 68     | 53        | 121 (25.6) |
| Other                               | 117    | 91        | 208 (44.0) |

DISCUSSION

AIDS is a global health problem these days with an estimated 33.2 million persons being affected worldwide. According to the latest estimates (2007) from Turkish Republic’s Health Ministry, there are 2544 HIV/AIDS cases in Turkey. It is one of the world’s leading infectious killers. AIDS is a 100% fatal but preventable disease. Since there is no vaccine and no definite cure for AIDS, prevention of HIV infection by raising awareness among the public is the best defense.[9] Knowledge about HIV/AIDS especially among adolescents and young adults is crucial because of increasing prevalence of HIV/AIDS in Turkey.

The data in the current study revealed a significant gender difference in AIDS knowledge among high school students in Turkey, with females being more knowledgeable than males, particularly in the areas concerning HIV/AIDS treatment and prevention. This finding is not consistent with studies conducted in the Kenya, Scandinavia,[10] and Zimbabwe,[11] which found that boys and girls displayed a similar level
of understanding regarding the AIDS epidemic. However, gender differences in AIDS knowledge and attitudes have been found in other countries such as Iran and Armenia.

In the present study, the majority of respondents exhibited a basic understanding of HIV transmission. For example, between only 1.9% of respondents agreed that a person can get AIDS by sitting next to a person with AIDS and 2.7% said HIV could be contracted through casual contact (e.g., hugging, shaking hands) or mere proximity to an HIV-positive individual which was inconsistent with studies performed in Iranians and Nigerians. Nevertheless, a significant number of respondents had misconceptions about HIV transmission, one-third (31.7%) of the students believed that the virus can be transmitted through kissing and more than half (57.5%) said that person can get infected with the AIDS virus through mosquito bite which was close to the previously published studies. For these reasons, efforts should be made to provide accurate information and address misconceptions about HIV transmission. The erroneous belief that mosquitoes are vectors for HIV is a quite common misconception, as has been shown in many other studies. The proportion of respondents that were aware that HIV/AIDS is not transmitted by mosquito bites in our study (42.5%) was similar to the results from studies conducted among Asian-Indian adolescents (48.0%) and Turkish adolescents (40.3%).

Most children infected with HIV, including those with AIDS, have been infected by mother to fetus infant transmission. In the present study, most respondents believed that infected mothers to babies during pregnancy or child birth could be a route of transmission (76.5%). This finding is similar to that of some investigators. A study in China found that 90-100% of students were aware of the major routes of transmission of HIV. Findings of a study at a school of community health in Lagos-Nigeria showed that students had very good knowledge about AIDS and transmission of HIV. Another study reported that the adolescents had a moderate-to-high HIV transmission knowledge. Regarding ways of preventing the further spread of HIV/AIDS, 51.4% of the females and 48.6% of the males reported people can protect themselves from the AIDS virus by using a condom correctly every time they have sex. In his study in senior secondary school children of Delhi Lal et al. found that only 14.9% of the students had knowledge about condoms as a means of protection, with awareness significantly higher among boys. However, studies conducted in other countries have also reported high awareness levels regarding condom for HIV/AIDS prevention. Udoma discovered that only 63.3% of the secondary school students studied knew about a condom whereas only 40% mentioned it as a sure preventive measure in a study by Unuigbe and Osafu. About 77% of males and 73.9% of females acknowledged the condom as main preventive measure in Araoye and Fakeye’s study. Therefore, it will be important in future HIV prevention campaigns to focus not only on HIV knowledge but also on developing and maintaining safe sexual behavior. In contrast, with regard to respondents’ knowledge of the availability of a cure to the disease, the results showed that, although more than half of both male and female students agreed that there is no available cure to AIDS, the difference between female and male students in their knowledge is not significant (P = 0.192). More male students (76.1%) than female students (70.8%) were not aware of an available cure. Such beliefs can have a serious negative consequence and may influence the attitude and behavior of the students if appropriate action is not taken.

With regard to the sources of information about HIV/AIDS, 67.2% of the students mentioned that internet was the main source of information to them. Media (Television and radio) were the second most common means of obtaining information about HIV/AIDS (47.8%). The results were consistent with findings presented in the literature. These findings imply promoting television as a significant source of information. A greater involvement of print media can also be a cost-effective measure. In our study, only 6.8% of children had heard about HIV/AIDS through their respective school programs which was very close to other studies performed in Turkish college students by Koksal et al. This finding suggests that school AIDS education should be strengthened further in schools. Additionally, students need to be aware of and fully understand the fact that classes on HIV/AIDS prevention are different from all other courses in the school curricula. For behavior change to occur and attitudes to evolve, HIV/AIDS prevention education needs to be singled out as a unique course in the school curricula. At the same time, it may serve as a catalyst to more widespread change in teaching styles at different schools. Another finding from this study was that 17.8% respondents said that they receive information about HIV from parents. Parents’ role in teaching sexual behavior can be of immeasurable value, yet most studies including ours verify that parents play an almost negligible role in teaching sexual matters to their adolescents. Aspy studied the role of parental communication and instructions concerning youth sexual behavior in a community-based sample of 1083 teenagers aged 13-17 years. He concluded that parents have the opportunity and ability to influence their children’s sexual behavior decisions.

Finally, it would be worthwhile describing some limitations and strengths of this study. One of the main limitations, in a Muslim society like Turkey, research is restricted in asking questions concerning students’ sexual belief and behaviors. Secondly, the results of this study may only be
generalized to similar populations of students. Thirdly, because of the self-report nature of the questionnaire, the honesty of student’s responses may be questioned. However, the questionnaire was anonymous, which should have encouraged accurate and honest self-disclosure.

We want to recommend that better-structured education targeting students in both primary and high schools in the form of health talks/seminars, and school curricula, would improve the HIV/AIDS knowledge for this category of people in our society. Further research that compared responses from various provinces in Turkey are needed to add significantly to the current literature.

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