

# Physical education and sport students' awareness and attitudes regarding HIV and AIDS in Turkey

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## Abstract

**Background:** Research regarding Turkish university students' knowledge, attitudes/beliefs, and perceptions of risk about HIV/ AIDS is fairly limited, and studies mainly result in information that is far from defining the real situation.

**Objective:** The aim of this study is to examine Turkish physical education and sport students' awareness and attitudes regarding HIV and AIDS.

**Methods:** A structured questionnaire was designed primarily to obtain information on HIV- and AIDS-related knowledge and attitudes of the Physical education and sports students. The software generated descriptive statistics relating to demographics and Physical education and sports students knowledge, and data were expressed as both means  $\pm$  standard deviations and percentages. Analysis of variance (ANOVA) and Student's t-test analyses were used to assess statistical significance. In all analyses, the usual significance level was 5%.

**Results:** A sample of 545 physical education and sport students in Turkey were included in this study. The respondents exhibited a moderate level of knowledge about HIV and AIDS. However, the survey revealed some common misconceptions, indicating that physical education and sport students require additional training in the mechanisms of HIV transmission. We found some differences in the level of HIV-related knowledge between different demographic groups. Female students have a high level of awareness in terms of how HIV/ AIDS is spread by contagion, the ways of guarding against HIV/AIDS, and the effects of HIV/AIDS. We also observed that knowledge levels show significant differences with both age and class. Our findings show that the major source of knowledge about AIDS was mass media, including television, the Internet and newspapers. These results are discussed within the framework of critical studies

on HIV-related knowledge. Implications for the development of curricula and in-service training programs for physical education and sport students, organizations and institutions are discussed.

**Conclusion:** It was concluded that Female students have a high level of awareness in terms of how HIV/AIDS is spread by contagion, the ways of guarding against HIV/AIDS, and the effects of HIV/AIDS. Further, knowledge levels show significant differences with both age and class whereas the major source of knowledge about AIDS was mass media, including television, the Internet and newspapers.

**Key words:** HIV/AIDS; knowledge; attitudes; sexual behavior; Physical Education and Sport Students; Turkey

## Introduction

Acquired Immune Deficiency Syndrome (AIDS) is an important social health problem which is threatening the whole world, and is still incurable. According to the reports of WHO released in December 2008, of about 33.4 million HIV-infected people, there are 31.3 million adults, and 2.1 million children and the adolescences younger than 15. It was reported that 33.9 million people have died of AIDS since the disease was identified (1,2). HIV/AIDS has no definite cure, may only be protected by taking necessary precautions, and is a costly disease for its expensive and long treatment process. On the other hand, health education and precautions are the main priorities to be protected from AIDS, as it is not curable yet. Thus, having sufficient information about AIDS is vital for the control of the infection. Moreover, raising information level decreases risk behaviors. Although adolescences and adults are expected to be more informed to avoid high-risk behaviors, but the expected fact cannot be always achieved (3).

Many older adolescents and young adults were infected with AIDS as teenagers<sup>4</sup>. According to the United Nations Joint Programme on HIV/AIDS, young people between the ages of 15 and 24 account for 45% of all new HIV infections (5,6). Particularly, in many parts of the world, young adult individuals are in sexual relations at early ages without having inadequate knowledge and with misconceptions about sexually transmitted diseases which increases their chance of contacts with HIV/AIDS and STDs(7,8,9). There are several factors raising the risk of HIV infection among young people, such as first sexual experiences, drug addiction at this ages and high rates of sexually infected diseases(10). Nevertheless, there is a chance to diagnose protective health behaviors in young people.

Students are characterized as having minimum illness and death rates and healthy individuals of the young population. Moreover, students can also be considered as the vulnerable risk population. According to the results of the 1995 National College Health Risk Behavior Survey by The Centers for Disease Control(11). There are high levels of a variety of behaviors that put college and university students' health at risk(12). Sexually transmitted diseases and HIV/AIDS resulting from risky sexual behaviors cause a big burden over the students. Of all the HIV transmission, 50% is observed in young population(13,14). Thus, it is important to provide and support young generations who will shape the future with healthy sexual behaviors and attitudes. University students have a special and important place among young people since they constitute a mixed culture with different value judgments and feel the socio-economic changes intensively. Students risky sexual behaviors generally result from their inadequate knowledge levels, lack of education about STDs and HIV/AIDS. 75% of the students answered the question of common information source as doctors, while the answer to the same question in a similar survey in the other countries is peers and friends(15).

In contrast to other studies conducted in non-Islamic countries such as Nepal(16), sexual education and discussion is minimal in Islamic countries such as Turkey<sup>17</sup>. Younger people prefer to share and talk about their sexual problems and needs to their peers rather than their families or parents(18,19). They may have a chance to get

wrong information or misconceptions from their peers as they have no definite information sources and levels(19). Therefore, it is vital to inform younger people about HIV/AIDS.

The ironical common belief among young adolescents is that HIV cannot affect them but affects others(20,21). For example, in a national survey conducted in Zambia, it was found that 32% of the adolescent /young females and 30% of the adolescent males of all the participants reported that AIDS could not be avoided. Likewise, 25% of the adolescent females and 21% of the adolescent males reported that they had no knowledge that AIDS could infect a healthy person(22).

Turkey, there is relatively an increase on diagnosed HIV/AIDS cases as a result of the awareness and test facilities on HIV/AIDS. However, Turkey is still considered as having rare HIV/AIDS cases. From the period 1985 to June 2010, 4177 HIV (+) cases were reported to the Ministry of Health. 70% of these cases are males. People between the ages 25 and 39 are the most affected age group from the infection. The most common ways of the transmission of the infection are the sexual intercourse (65%) and the injections (3%) (23). Moreover, HIV/AIDS education is poorly developed in the Turkish school system. According to teacher and counselor trainers, HIV/AIDS information is not included in the curricula of secondary and high school system. Furthermore, teachers and counselors do not receive HIV/AIDS information in their training programs(24). Sexuality is a taboo in Turkish society and with a 97% of Muslim society; girls are not allowed to have sexual relation before marriage(25,18).

Although Turkey is one of the rare countries that has a low of epidemic level, exposing to HIV and AIDS seems a considerable health issue. For instance, the first AIDS case was reported in 1985, whereas the total number of the cases reported officially was 2711 (638 AIDS and 2073 HIV+). The data reported officially indicate that heterosexual relations, (75%), man to man sex (16%) and drug injection (7) were the most common transmission among HIV cases (Joint United Nations Programme on HIV/AIDS (5). On the other hand, it cannot be stated that the official data were true due to the low level of consultation of people with STDs at hospitals and inadequate scientific data(26).

People's attitudes towards HIV/AIDS and infected people are affected by the various aspects of culture. Cultural and social values some of which Islamic based are still widespread in Turkish culture. Turkish social norms play an important role on individual's sexual normality and his/her perception of sexual norms(27). Nevertheless, as a result of the social and cultural changes in Turkey, people have much more sexual freedom than the previous generations in some parts of the country. Thus, people are under the risk of infections including HIV(28). As Turkish culture is made up different value systems, Turkish society is very complex from the aspects of sexual behaviors and sexually transmitted diseases(29).

University students have been targeted in many countries for HIV/AIDS prevention programs. This group's greatest risk stems from relatively high levels of sexual activity and a tendency to have multiple sex partners(30). Information regarding Turkish university students' knowledge, attitudes/beliefs, and perceptions of risk about HIV/AIDS is limited, not in published form, or available solely in Turkish publications where translation to English is necessary(31,32,33,34,35). Limitations of these studies, mainly due to small samples, result in information that is far from defining the real situation. The studies primarily focus on factual knowledge about HIV/AIDS, and do not include extensive information about university student's attitudes toward people with HIV/AIDS, university student sexual behaviors, personal perceptions of risk, nor university student sexual communication behaviors. For instance, Pehlivan (1994) showed that when Turkish students from different universities were asked to list STDs, the majority of them (93%) mentioned AIDS(32). Eylen (1996) reported at the Fourth Turkish Counseling and Guidance Conference that the majority of Turkish teacher university students in her 100 person sample had both accurate information about AIDS and limited knowledge about specific AIDS facts. It was found that the main information source of these university students was the media. The researcher suggested the need for further HIV/AIDS education of Turkish teachers-in-training(34).

Below is a review of the results of prior research regarding the attitudes towards HIV/AIDS. To begin with, According to the students of Nis University, mass media is the most important

tool to get information about HIV/AIDS. 36.8% of the students who participated to the survey pointed out the 'media'. The same results have also been pointed out in the other countries that television and printed media is the most outstanding way for getting information about HIV/AIDS and STDs(36,37). The common view of all the young people in all over the world is that they seldom state their parents as the source of information about HIV/AIDS(38,39). In a survey conducted in Bosnia- Herzegovina, only 10 % of the students stated that they got information from doctors(40). Statistically, there are no differences between males and females about the answers to the question of the most common source of information about HIV and AIDS. However, there are differences in the distribution of answers to the same question between medical and non-medical students. As medical students are in a more close contact with doctors during their education, 81.7 % of them indicated doctors as people from whom they generally received information, while the answer to the same question among non-medical students is 71.3%(36). In addition, Nwokocho and Nwakoby (2002) stated that Nigerian high school students did not have enough information on basic facts about HIV/AIDS, including the reasons, the ways of transmission and the prevention of the disease(41) Tavoosi et al. (2004) propounded that Iranian students had misconceptions about the transmission ways of the disease(42). For example, mosquito bites (33%); public swimming pools (21%) and public toilets (20%) were stated incorrectly as the ways of transmission. It is likely that, in more liberal countries where HIV/AIDS cases were in high levels, the attitudes and the knowledge of young people were relatively much more than the conservative countries where the cases were in low levels. For example, Marcellin et al., (2006) conducted a survey having 300 items in the USA, Florida, and Miami-Dade Country to Haitian adolescents about their knowledge and beliefs on HIV and AIDS (43). They discovered that participants had high levels of knowledge on the ways of transmission such as sharing needles and having unprotected sexual relations. Moreover, they found that condom was used as a prevention method. Moreover, in a survey conducted by Polat, Yüzer and Başer (2011) it was found

that 42.4 % of the students used a condom during sexual intercourse (44). In another study conducted on Greek students of a technical high school, it was found that 72% of the questions related to HIV were answered correctly and the 45% of the participants stated that they believed to have enough knowledge about HIV and AIDS (45). Similarly, Dias et al. (2006) found that Portuguese adolescents had high levels of knowledge about HIV transmission with positive opinions and tolerance towards infected people (46). Nevertheless, Dias et al. discovered that the adolescents had also high level of misconceptions.

As a result, research regarding Turkish university students' knowledge, attitudes/beliefs, and perceptions of risk about HIV/ AIDS is fairly limited, and studies mainly result in information that is far from defining the real situation.

Thus, the current study aims to investigate Turkish physical education and sports students' level of knowledge, sources of information and attitudes towards HIV and AIDS and educational needs concerning the disease. With these concerns in mind, the research asks three research questions:

1. What are the level of physical education and sports students' level of knowledge about HIV and AIDS?
2. What are their sources of information about HIV and AIDS?
3. What are their attitudes towards HIV and AIDS?

## Methods

### *Sample and Settings*

Physical education and sports students were the target population of this study. The sample group in the study consisted of 545 Physical education and sports students from universities in Balikesir, Istanbul, Bursa, Sakarya, Antalya and Burdur in Turkey. Socio-demographic characteristics of respondents of Physical education and sports students came from a wide range of backgrounds, as presented in Table 1. Of our respondents, 63.5% were male and 36.5% female, 36.5% were between the ages of 20 and 24 years and 50.1% The population of the study consisted of 545 freshmen, sophomores, juniors, and seniors at the Departments of Physical Education and Sports, Coaching Education and Sports Management in Turkey. Of the 545

students, 48.3% (263) were in the Physical Education and Sport Department; 20.9% (114) of the students were in the Coaching Education Department, and 30.8% (137) of the students were in the Sport Management Department. With respect to class, 217 (39.8%) were freshmen, 101 (18.5%) of the students were sophomores, 112 (20.6%) were juniors, and 115 (21.1%) were seniors. Nearly half of the respondents (93.8%) were single, (45.9%) emphasized that they had little knowledge about HIV and AIDS.

*Table 1. Socio-demographic characteristics of respondents (N = 545)*

Variable		n	%
Gender	Male	346	63.5
	Female	199	36.5
Age	≤18	191	35.0
	20-24	273	50.1
	25-30	81	14.9
Departments	Sport Management	167	30.8
	Physical education and sport	263	48.3
	Coaching Education	114	20.9
Marital status	Single	511	93.8
	Married	12	2.2
	Widowed	11	2.0
	Living together	11	2.0
Class	Freshmen	217	39.8
	Sophomores	101	18.5
	Juniors	112	20.6
	Seniors	115	21.1
Sport area	Football	188	34.5
	Basketball	101	18.5
	Volleyball	117	21.5
	Wrestling	20	3.7
	Judo	9	1.7
	Swimming	28	5.1
	Athletics	44	8.1
	Taekwondo	16	2.9
	Karate	15	2.8
Gymnastics	7	1.3	
Level of HIV/AIDS knowledge	None	35	6.4
	A little	250	45.9
	Some	214	39.3
	A lot	46	8.4

A structured questionnaire was designed primarily to obtain information on HIV- and AIDS-related knowledge and attitudes of the Physical

education and sports students. The questions were selected based on a review of previous studies (47,41,16,48,49,50,51). The questionnaire was initially tested with 125 Physical Education and Sport Students who were not included in the main study. Based on the results of the pilot study, some survey items were changed. The final questionnaire was composed of the following four parts: (1) demographic items, including gender, age, educational level, marital status, departments, class, sport area and level of HIV- and AIDS-related knowledge (6 items); questions regarding HIV- and AIDS-related knowledge covering three main topics of general information (7 items); (2) questions regarding modes of HIV transmission (15 items) and methods of prevention and treatment (7 items); (3) questions regarding respondents' attitudes towards HIV and AIDS (12 items); and (4) finally questions regarding the source of respondents' information on HIV and AIDS (13 items). The response categories for each section were as follows: for their- and AIDS-related knowledge section, questions were in a 'yes', 'no' and 'undecided' format; items on attitudes relating to HIV/AIDS were in a 3-point scale format ('agree', 'neither agree nor disagree' and 'disagree') and finally, 'yes' and 'no' responses were used for questions relating to sources of information. The information used in the main study was collected from 545 Physical education and sports students in face-to face interviews. The questionnaire was administered during the last week of Spring semester of 2010-2011 academic year.

The outcomes of this survey were statistically analyzed using SPSS software for Windows 11.5. The software generated descriptive statistics relating to demographics and Physical education and sports students knowledge, and data were expressed as both means  $\pm$  standard deviations and percentages. Analysis of variance (ANOVA) and Student's t-test analyses were used to assess statistical significance. In all analyses, the usual significance level was 5%.

## Results

### *HIV/AIDS knowledge of respondents*

Table 2 shows the physical education and sports students responses to the questions regarding general HIV- and AIDS related knowledge, the mode

of transmission and methods of treatment and protection. For the most part, the physical education and sports students had a good level of knowledge about HIV and AIDS. Most of the respondents knew that AIDS is caused by a virus (89.0%), and that HIV can be detected through blood test (83.7%). However, 26.1% of the respondents were undecided about whether mosquitoes can transmit HIV and 44.6% of the respondents agreed with the misconception that mosquitoes can transmit HIV.

Regarding knowledge of the mode of transmission, most of the Physical education and sports students surveyed knew that HIV is transmitted through the having unprotected sexual intercourse with an infected person (82.2%), using a hypodermic needle contaminated with HIV/AIDS (80.9%) and Receiving transfusions of infected blood (80.4%). The majority of the physical education and sports students knew that HIV is not transmitted by shaking hands or touching someone with AIDS (74.3%) or by kissing or hugging an infected person (62.4%). However, only 47.9% of the respondents responded to the statement 'HIV is transmitted from the breast milk of an infected woman to her baby' correctly. Their responses to the statements 'HIV is transmitted by sharing personal items with an infected person such as a drinking cup, towel or clothing' and 'HIV is transmitted by sharing a toilet with an infected person' also revealed some misconceptions.

Regarding methods of treatment and protection, the Physical education and sports students knew that AIDS cannot be avoided by exercising regularly (64.0%), and that the best single way to prevent HIV is through education (71.6%). Condom use can help protect against HIV infection (72.3%). However, the respondents held some misconceptions about the items 'there is a new effective vaccine against the disease' and 'avoiding people with AIDS' as a method of protection.

Variables associated with socio-demographic characteristics of respondents and relating to general knowledge, knowledge of the mode of transmission and knowledge of methods of treatment and protection in the univariate analysis were analyzed using analysis of variance (ANOVA) and Student's t-test analyses. No statistically significant differences in the Physical education and sports students' knowledge were found with respect to educational status and gender class.

Table 2. HIV- and AIDS-related knowledge of the respondents (N = 545)

General knowledge	Yes		Non		Undecided	
	n	%	n	%	n	%
AIDS is caused by a virus.	485	89.0√	23	4.2	37	6.8
HIV can be detected through blood test.	456	83.7√	19	3.5	70	12.8
HIV is a virus that weakens the immune system.	436	80.0√	26	4.8	83	15.2
People with HIV can look healthy.	340	62.4√	168	30.8	37	6.8
It can take a long time for an infected person to show any symptoms of the disease.	335	61.5√	82	15.0	128	23.5
AIDS is a disease that is only transmitted sexually.	266	48.4	224	41.1√	57	10.5
Mosquitoes can transmit HIV.	243	44.6	160	29.4√	142	26.1
Mode of transmission						
Having unprotected sexual intercourse with an infected person.	448	82.2√	42	7.7	55	10.1
Using a hypodermic needle contaminated with HIV/AIDS.	441	80.9√	47	8.6	57	10.5
Receiving transfusions of infected blood.	438	80.4√	52	9.5	55	10.1
Having a tattoo done with a device that was used on an infected person.	409	75.0√	50	9.2	86	15.8
From an infected pregnant woman to her unborn baby.	340	62.4√	69	12.7	136	25.0
Sharing a razor blade with an infected person.	314	57.6√	163	29.9	68	12.5
From the breast milk of an infected woman to her baby.	261	47.9√	132	24.2	152	27.9
Kissing or hugging an infected person.	119	21.8	340	62.4√	86	15.8
Coughing and sneezing of an infected person.	113	20.7	317	58.2√	115	21.1
From sharing personal items with an infected person, such as a drinking cup, a towel or clothing.	111	20.4	329	60.4√	105	19.3
A massage given to or received from an infected person.	106	19.4	327	60.0√	112	20.6
Sharing a toilet with an infected person.	101	18.5	354	65.0√	90	16.5
Sharing a swimming pool with an infected person.	91	16.7	328	60.2√	126	23.1
Shaking hands or touching someone with AIDS.	80	14.7	405	74.3√	60	11.0
Eating from the same plate as an infected person.	80	14.7	370	67.9√	95	17.4
Methods of treatment and protection						
AIDS can be avoided by exercising regularly.	71	13.0	349	64.0√	125	22.9
The best single way to prevent AIDS/HIV is through education	390	71.6√	79	14.5	76	13.9
Condom use can help protect against HIV infection.	394	72.3√	52	9.5	99	18.2
Having only one partner/spouse	421	77.2√	59	10.8	65	11.9
AIDS has a cure/vaccination	202	37.1	233	42.8√	110	20.2
There is a new, effective vaccine against the disease.	112	20.6	236	43.3√	197	36.1
Avoiding people with AIDS	278	51.0	182	33.4√	85	15.6

Note: √ correct answer

The respondents' attitudes towards HIV and infected persons are shown in Table 3. The vast majority of the respondents agreed with the following statements: 86.8 % education on how to avoid HIV should be given to all pupils at school; 83.3% HIV- and AIDS-related education, including information on protection against the disease, should be provided to Physical education and sports students in service training seminars; 81.8% AIDS-related education, including infor-

mation on protection against the disease, should be provided to Physical education and sports students in service training seminars and associations should publish books, brochures or posters about AIDS and methods of protection against the disease for Physical education and sports students; 82.9% infected persons should be supported, treated and assisted; and AIDS is a serious public health problem and infected persons should inform other people about their disease. However, 44.0 %

Table 3. Respondents' attitudes towards HIV and infected persons (N = 545)

Statements	Agree		Disagree		Neither agree nor disagree	
	n	%	n	%	N	%
AIDS is not a serious public health problem.	110	20.2	58	10.2	377	69.2
HIV/AIDS-infected persons should be restricted from work.	196	36.0	123	22.6	226	41.5
HIV/AIDS-infected students should not be allowed to go to school with uninfected children.	173	31.7	154	28.3	218	40.0
Social contact with infected persons is dangerous.	188	34.5	115	21.1	242	44.4
Infected persons should inform other people about their disease.	410	75.2	93	17.1	42	7.7
Infected persons should be supported, treated and assisted.	452	82.9	52	9.5	41	7.5
Education on how to avoid HIV/AIDS should be provided to all pupils at school.	473	86.8	39	7.2	33	6.1
AIDS-related education, including information on protection against the disease, should be provided to Physical education and sports students in service training seminars.	454	83.3	49	9.0	42	7.7
Education-related organizations and associations should publish books, brochures or posters about AIDS and methods of protection against the disease for Physical education and sports students.	446	81.8	61	12.2	38	7.0
I would not like to share a home with an infected person.	240	44.0	169	31.0	136	25.0
I would not like to serve an infected person in the workplace.	169	31.0	175	32.1	201	36.9
I would not feel any compassion towards an infected person.	126	23.1	148	27.2	271	49.7

of Physical education and sports students stated that they would not like to share a home with an infected person. This can be considered a negative or discriminatory attitude towards people living with HIV. This attitude was not significantly related to levels of HIV and AIDS awareness and demographic factors.

Table 4. Respondents' reported sources of information (N = 545)

Source of information	Yes		No	
	n	%	n	%
Television	424	77.8	121	22.2
Internet	379	69.5	166	30.5
Newspapers	330	60.6	215	39.4
School	222	40.3	323	59.7
Health staff	208	38.2	337	61.8
Magazines	207	38.0	338	62.0
Books	172	31.6	373	68.4
Conferences/seminars	141	25.9	404	74.1
Radio	139	25.5	406	74.5
Brochures	108	19.8	437	80.2
Family	100	18.3	445	81.7
Tourists	39	7.2	506	92.8
Posters	36	6.6	509	93.4

Table 4 shows that the major source of knowledge about AIDS was mass media, including television, the Internet, newspapers, and Health staff Television was reported as the single most important source of knowledge by 77.8% of the respondents. Other important sources of information were the Internet (69.5%) newspapers (60.6%).

Below is the presentation of correlational data. To begin with, T-test results indicate that gender is a significant variable that affects HIV/AIDS Awareness and attitudes. That is, female students have a high level of awareness in terms of how HIV/AIDS is spread by contagion, the ways of guarding against HIV/AIDS, and the effects of HIV/AIDS. ( $p=0.00$ ). Interestingly enough, the ANOVA results show that younger students are more aware than older students in terms of the spread of HIV/AIDS, preservation from it and the ways how to cope with it. ( $p=0.00$ ) In a similar way, grade is also a significant variable. ( $p=0.00$ ) That is the ANOVA results demonstrate that lower grade students seem more aware than higher ones regarding the knowledge of HIV/AIDS, spread of HIV/AIDS, preservation from it and the ways how to cope with it. ( $p=0.00$ ) Moreover, the findings in-

dicating that the level of knowledge on HIV/AIDS constitutes a significant factor. ( $p=0.00$ ) In other words, the more the students know about it, the higher they have awareness of spread of HIV/AIDS, preservation from it and the ways how to cope with it. Last of all, the ANOVA results show that the students in the department of physical education teaching have a higher level of awareness of knowledge on HIV/AIDS, spread of HIV/AIDS, preservation from it and the ways how to cope with it. ( $p=0.00$ )

### Discussion

In this study, most of the Physical education and sport students were male and relatively young. Almost everybody was single. More than half of the respondents emphasized that they had a little level of knowledge about HIV and AIDS; the respondents identified the concept of HIV correctly (virus, infection) in 89% of the responses. The results were similar to the previous studies concerning the knowledge of the Finnish adolescents(52,53), nursing staff and German nursing students(54,55,39,51). However, their survey responses suggested that they were not knowledgeable enough about the mode of transmission or methods of treatment and protection. We also observed that Physical education and sport students were undecided about some statements and were sometimes unable to give exact responses to questions.

The results of the study show similar results to the findings suggested by Montazeri (2005) (48). This may be explained that there is a low level of public awareness about HIV and AIDS in some countries such as Iran and Turkey. In a broader sense, a considerable portion of Turkish people believes that having a sexually transmitted disease is a source of shame, and that it is impossible to discuss HIV and AIDS with anyone. Moreover, in contrast to some other studies carried out in non-Islamic countries such as Nepal(16), sexual education and the discussion of sexuality is at a minimum level in Muslim countries such as Turkey(17). In this sense, in a study examined Turkish medical university students' sexual attitudes and behaviors, Ozan et al. (2005) reported that physical pleasure, curiosity, and desire for experience were the main reasons for the first sexual intercourse for men, while

love was a leading reason for women (56). That is, both men and women had more negative attitudes towards the premarital sexual experience of women than of men, as found by Aras et al., (2003) who researched the attitudes of Turkish university students (57). Shapurian and Hojjat (1985) also noted similarities and differences regarding the attitudes of younger Iranian men and women, and found that Iranian men and women differed considerably in their attitudes towards premarital sex for men, and that a higher percentage of women agreed on premarital sex for their male peers than for their female peers(58). Gender-based differences were observed in the knowledge levels of Physical education and sport students. The results of the study reveal that the male respondents have a higher knowledge level regarding HIV and AIDS when they compared to females. Moreover, female participants were most often undecided about the statements in the survey. The result supports the findings noted by(59,60,61), while it conflicts with some other studies(62,41,27,48,51). Finally, the findings can be explained by the opinion that educational programs aiming to establish an awareness of HIV and AIDS mainly focus on men. That is, societal and social values in Turkey grant men more privileges and freedom, and, thus, they may more be exposed to sexually transmitted diseases in contrast to the Islamic rules that dictate the sexuality of the woman is limited to only her husband(49). It is also observed that there is a significant difference in the levels of knowledge and attitudes between Physical education and sport students between different age groups. The results showed that younger students are more aware than the older ones regarding the knowledge and attitudes of AIDS/HIV. The data also suggested that respondents' knowledge of HIV and AIDS does not originate from school while it is derived from their personal experiences.

Physical education and sport students' statements explaining their social and cultural behavior were evaluated to determine their attitudes about HIV and infected persons. In a general sense, Physical education and sport students showed a positive or neutral attitude towards AIDS and infected persons, with the exception of one item stating 'I would not like to share a home with an infected person' and 'I would not like to serve an

infected person in the workplace' Among the overall population, there is a fear of establishing social contact with ones living with HIV. That is, even surgeons who have the adequate knowledge of HIV and AIDS feel worried about possible social contact with HIV-positive people as reported in a study conducted in Turkey (63,28,51). Similar results have also been found in studies conducted in Iran (41), Tunisia (64) and Central Asian countries (65). This can be explained by the similarity between Iranian, Nigeria, Tunisian, Central Asian and Turkish people's attitudes towards HIV that are associated with the taboo of extramarital sexual relations. Physical education and sport students' major source of knowledge about AIDS was mass media such as television, the Internet and newspapers. Television was the most important source for AIDS awareness in this study. Knowledge sources of knowledge of HIV and AIDS seemed similar to the results found in previous studies(17,66,36,27,48,49,67,68,69). To add, Maswanya et al. (2000) stated that 97.5% of the Japanese high school students perceive that television is the main source in addition to written and visual press (70).

However, only a few Physical education and sport students stated that they had acquired knowledge about AIDS from school. First aid and health are taught to the students studying in the departments of Physical education and sport in Turkey, On other words, qualified education at schools can also play an important role in student's good performance. In this sense, students can be encouraged to use condom, and trained about some significant issues such as self-confidence and a healthy sexual life. In addition, a well-known fact that should not be ignored is that today's students waste time in an interactional and communicational environments such as the Internet and social media in which they can easily access to the HIV information when compared to the knowledge sources decades ago. However, there are still opportunities of improvement. In other words, students should be informed about the mode of transmission and prevention as as 44.6% students still believed mosquitoes. It is also obvious that students do not have sufficient and accurate information about HIV/AIDS, and as have not been given sufficient training while AIDS is an important public health problem with its complex, emotional, behavioral,

and psychosocial complications that accompany the physical illness. The only way to cope with this disease is prevention. The best way to prevent the disease is through education as implicated by Altun, (2004) and Islam et al. (2002) As a final note, it was observed that there was a significant difference in the levels of knowledge and attitudes between Physical education and sport students between different age groups(71,72).

Based on the findings of this research, some recommendations can be made. As the mass media has an important role in the distribution and dissemination of information about HIV and AIDS to both students and teachers, television usage to inform people about the disease must continue. As Ahmed, Hassali, Bukhari and Sulaiman (2011) stated that success in AIDS education program is best assured when communication and education are carried out continuously based on long-range strategies (73). Moreover, education in terms of all aspects of HIV and IDS should be placed in school curricula, as well as education on how to avoid HIV should be given to university students. For this purpose, education and training related to sexually transmitted infections and their prevention should also be provided to students through the in-service training programs developed by the Ministry of National Education. That is, information is vital to train students about accurate understanding of the modes of transmission and prevention strategies of HIV/AIDS. In this sense, teachers play a major role in the provision of information to increase awareness leading to behavioral change among their students as their knowledge and perception about the disease can have positive influence their on their students. It is also important for the Turkish government to start plan for the implementation of a systematic HIV/AIDS education programme for university students. The starting point should be the acknowledgement that there is a large sexually active university population in Turkey. In addition, the efforts of Turkish HIV/AIDS organizations currently working at grassroots level should be encouraged.

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