

KNOWLEDGE, ATTITUDES AND BEHAVIOUR OF STUDENTS FROM A MEDICINE FACULTY, DENTISTRY FACULTY, AND MEDICAL TECHNOLOGY VOCATIONAL TRAINING SCHOOL TOWARD HIV/AIDS

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Abstract

Objectives: With increasing numbers of HIV/AIDS patients, physicians, dentists, and nurses taking care of these patients should have sufficient knowledge of the disease, and their attitude and behaviour should be proper. In our study, we aimed to examine the level of knowledge about HIV/AIDS among students from a medicine faculty, dentistry faculty, and medical technology vocational training school, to investigate attitudes and behaviour, and differences between first- and last-year students (if any) and to determine students' perception of the importance of this disease for our country and our world.

Material and Methods: This descriptive study comprised first-year and last-year students of Akdeniz University Faculty of Medicine, Akdeniz University Medical Technology Vocational Training School (MTVTS), and Süleyman Demirel University Faculty of Dentistry. A questionnaire was administered to a total of 357 students. **Results:** Lack of the relevant education is obvious among all three occupational groups in our study. **Conclusions:** The importance of HIV/AIDS as a public health problem all over the world should be emphasized more, and awareness of all humanity should be augmented.

Key words:

HIV/AIDS, Knowledge, Attitudes, Behaviour, Medicine, Dentistry

INTRODUCTION

Infection with human immunodeficiency virus type 1 (HIV-1) and the resultant acquired immune deficiency syndrome (AIDS) is a major public health challenge of modern times [1].

There are 33.4 million people living with HIV, including 2.7 million new-infected with HIV, and AIDS deaths were two million in 2008 all over the world [2]. Since 2000, the rate of diagnosed new cases of HIV reported per million population has more than doubled, from 44 per million

in 2000 to 89 per million in 2008, based on the 43 countries that have consistently reported HIV surveillance data. In 2008, 51 600 cases of HIV were diagnosed and reported and 7565 cases of AIDS were reported by 48 of the 53 countries of the WHO European Region and Liechtenstein [3]. According to data of Ministry of Health Department in our country, first two cases were reported in 1985 and the number of HIV/AIDS cases is 3671 by 2009 [4].

All healthcare workers — especially physicians, dentists and nurses — are at risk for occupationally acquired HIV in-

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fections from close contact with blood and other body fluids of patients [5,6]. With the spread of HIV, increasing numbers of health care professionals are becoming involved in the care and treatment of these patients. As the disease spreads beyond current AIDS epicentres, more professionals are required to have a baseline working knowledge of HIV infection. And the reluctance of many health care professionals to offer treatment for HIV-positive individuals, along with already existing staff shortages, limits access to care and makes the provision of responsive educational programs even more important. Generic programs to educate health professionals frequently lack sufficient specificity and sensitivity to address the needs of health professionals with varying levels of knowledge and role responsibility [7].

Physicians, dentists and nurses make up the bulk of health-care workers. Knowledge, attitude and behaviour of the students of these professions about infectious diseases like HIV/AIDS is very important as they will take care of HIV/AIDS patients in the future. In this study, we aimed to examine the level of knowledge about HIV/AIDS among students from a medicine faculty, dentistry faculty, and medical technology vocational training school, to investigate attitudes and behaviour, and differences between first- and last-year students (if any) and to determine students' perception of the importance of this disease for our country and our world.

The research questions were: What are the levels of knowledge of medicine faculty, dentistry faculty, and medical technology vocational training school students about HIV/AIDS and how will their behaviours and attitudes be about HIV/AIDS patients?

Are there any differences in the knowledge, behaviour and attitudes related with HIV/AIDS between the first- and last-year students of these schools?

Do the students of these schools consider HIV/AIDS as an important disease for Turkey and for the world?

MATERIAL AND METHOD

Study group

This descriptive study comprised first-year and last-year students of Akdeniz University Faculty of Medicine, Akdeniz University Medical Technology Vocational

Training School (MTVTS), and Süleyman Demirel University Faculty of Dentistry. A questionnaire was administered to a total of 357 students, 200 from the Faculty of Medicine, 94 from the Medical Technology Vocational Training School, and 63 from the Faculty of Dentistry. In the study, 100% of first-year and 83.3% of last-year students of the Faculty of Medicine, 80% of first-year and 78% of last-year students at the MTVTS, and all students of Faculty of Dentistry were accessed.

Data collection

During data collection, questionnaires about knowledge and attitude were sent to students. The students answered the questions under the supervision of the person responsible for the questionnaire in the classroom. They filled in the forms without interference and without giving their names. It was found that some students neglected to answer some questions on the form, so when results were analysed, percentages were calculated according to the number of students answering each question.

The questionnaire consisted of three parts. In the first part, 19 questions were asked to determine the level of knowledge about HIV/AIDS among students. This is a 19 item questionnaire with a "true", "false" and "do not know the answer" format. Knowledge about HIV/AIDS questions included the following question-sentences, "An HIV carrier and an AIDS patient are the same", "If proper treatment is received, being an HIV carrier is the same situation as having a chronic disease like diabetes or hypertension", "HIV may be transmitted by using the same water closet", "An HIV test performed immediately after suspicious sexual intercourse gives definitive results" and "HIV contamination risk by penetration of a needle contaminated by a well-known HIV+ patient is 0.03%". In the second part, three questions aimed to measure the attitudes and behaviour of students regarding HIV/AIDS. "Do you feel disturbed if you receive education with an AIDS student in the same classroom?", "Will you treat an HIV/AIDS patient in the future?", "What will be your attitude to a friend that you have recently learned if he/she has HIV/AIDS?". The last five questions examined their sources of knowledge on HIV/AIDS and how they

perceived the importance of the disease for our country and our world. Participation was voluntary. The participants were informed about the aim of the study and the questionnaire, than requested to answer the questions.

Data analysis

Data were evaluated with SPSS 11.0 software. Descriptive analyses and examination of group differences were conducted. Descriptive statistics and chi square analyses were conducted for the first-/last-year comparison. One-way ANOVA, with level in school as the between-group factor, was performed for the questionnaires. A mean of total correct answers to 19 questions measuring students' levels of knowledge about HIV/AIDS was calculated for each school and resultant values were compared by t test. In descriptive analyses, the correct answer percentages of the first and last years were calculated. Prior to conducting ANOVA on the questionnaire, assumptions of independence, normality and homogeneity of variance were tested. Skewness values indicated that the distributions did not differ significantly from normal, symmetric distributions. Levene's test for homogeneity of variances suggested that the variances were equal for the three groups.

RESULTS

Distribution of schools according to gender and years is presented in Table 1. Only 17.7% of first-year students at the Faculty of Medicine responded positively to the

question concerning training in HIV/AIDS, versus 97.4% of last-year students. At the Faculty of Dentistry, 22.9% of first-year students indicated they were trained, compared with 85.4% of last-year students. The corresponding rates for the MTVTS students were 29.6% and 82.5%, respectively ($p = 0.03$) for first-/last-year comparisons, with no statistically significant differences ($p = 0.09$) in interschool comparisons.

Responding to the question about sources of knowledge, first-year students from the Faculty of Medicine indicated the internet and newspapers (22.9%), whereas last-year students mentioned lectures at school (85.4%). First-year students from the Faculty of Dentistry mentioned classes (50%), whereas last-year students mentioned school lectures (75.8%), the same as medical students. First-year students of MTVTS mentioned lessons at high school (63.6%) compared with lectures and classes (64.8%) among last-year students. Of all first-year students in the Faculty of Medicine, 8.5% thought lectures were sufficient, compared with 81.8% of last-year students. The same rates were 4% and 21.6% for Faculty of Dentistry students, respectively, and 11.8% and 5% for MTVTS students, respectively ($p = 0.02$ for first-/last-year comparisons and $p = 0.04$ for interschool comparisons, while the difference was attributable mainly to the results of Faculty of Medicine students).

Table 2 shows mean averages of correct answers measuring students' level of knowledge about HIV/AIDS. The difference in levels of knowledge between the first and last

Table 1. Distribution of schools according to gender and year of studies

	Medicine		Dentistry		MTVTS	
	n	%	n	%	n	%
Gender						
male	101	50.5	30	47.6	–	–
female	99	49.5	33	52.4	94	100.0
Year						
first year	120	61.7	26	41.3	54	57.4
last year	80	38.3	37	58.7	40	42.6

Medicine — Akdeniz University Faculty of Medicine.

Dentistry — Süleyman Demirel University Faculty of Dentistry.

MTVTS — Akdeniz University Medical Technology Vocational Training School.

Table 2. Mean counts of correct answers to questions about HIV/AIDS according to schools

School	Mean±SD		P*
	first year	last year	
Medicine	7.9±2.2	9.3±1.8	0.00
Dentistry	7.6±2.3	9.7±2.1	0.00
MTVTS	7.8±1.9	9.9±1.7	0.00
P**	> 0.05	> 0.05	> 0.05

Abbreviations as in Table 1.

* p value for years.

**p value for schools.

year was statistically significant ($p = 0.01$), but there was no statistically significant difference among schools. Fewer than 20% of first-year students provided correct answers to the following question-statements: “An HIV carrier and

an AIDS patient are the same”, “If proper treatment is received, being an HIV carrier is the same situation as having a chronic disease like diabetes or hypertension”, “HIV may be transmitted by using the same water closet”, “An HIV test performed immediately after suspicious sexual intercourse gives definitive results” and “HIV contamination risk by penetration of a needle contaminated by a well-known HIV+ patient is 0.03%.”. The number of correct answers among the last-year students was considerably higher (medicine faculty, dentistry faculty, and medical technology vocational training school 69.8%, 67.3%, and 59.6%, respectively).

Distribution of attitudes toward patients with HIV/AIDS is given in Table 3. Most of the students did not want to receive education in the same class-room with HIV/AIDS

Table 3. Distribution of attitude towards patient with HIV/AIDS

Answers to questions	Schools [%]						P**
	Medicine		Dentistry		MTVTS		
	first year	last year	first year	last year	first year	last year	
I shall agree to be educated in the same classroom with HIV/AIDS patient	14.6	11.7	38.5	8.1	25.9	15.0	> 0.05
I shall treat a patient who's aware he/she has HIV/AIDS	79.0	88.3	76.9	78.4	81.5	92.5	> 0.05
P*	> 0.05		< 0.05		> 0.05		

Abbreviations as in Table 1.

* p value for year.

**p value for schools.

Table 4. Attitude towards a friend with known HIV/AIDS

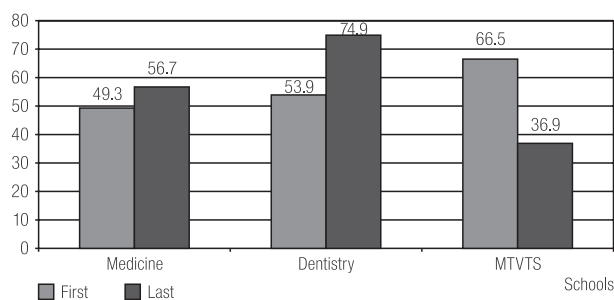
Answers to questions	Schools [%]						P**
	Medicine		Dentistry		MTVTS		
	first year	last year	first year	last year	first year	last year	
There'll be no change in my attitude	22.6	35.1	23.1	21.6	16.7	47.5	> 0.05
I get away from him/her as soon as possible	3.2	0	3.8	5.4	7.4	0.0	> 0.05
I feel pity towards him/her	14.5	14.3	30.8	10.8	11.2	12.5	> 0.05
I try to help	54.8	45.5	38.5	51.4	61.2	42.5 ¹	< 0.01
Other	4.8	2.6	3.8	10.8	7.4	5.0	> 0.05
P*	> 0.05		> 0.05		< 0.05		

Abbreviations as in Table 1.

* p value for years.

**p value for schools.

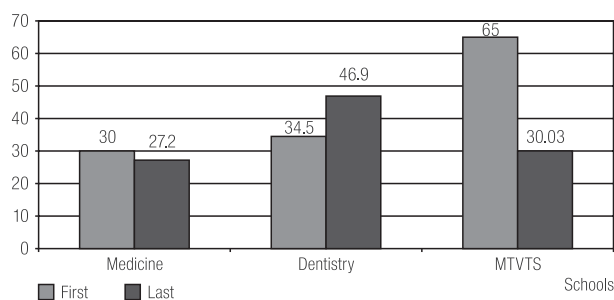
¹ The row causing the significance.



Medicine — Akdeniz University Faculty of Medicine.
 Dentistry — Süleyman Demirel University Faculty of Dentistry.
 MTVTS — Akdeniz University Medical Technology Vocational Training School.

Fig. 1. Distribution of students, according to schools, who think that HIV/AIDS is very important for the world.

friends but stated that they would treat patients with HIV/AIDS in the future. However, there was no statistically significant difference in attitude between first-year and last year students. Distribution of attitudes of students toward a friend known as an AIDS patient is presented in Table 4. Fewer last-year, compared to first-year students from the Faculty of Medicine and MTVTS declared that they would “try to help”. But this difference was not statistically significant. A higher proportion of last-year students of Faculty of Dentistry stated that they would try to help compared with the first year students ($p = 0.01$). There was a statistically significant difference among the first and last year students of MTVTS for the ‘Attitude towards a friend with known HIV/AIDS’ question. The difference was due to the “There’ll be no change in my attitude” choice. A higher proportion of last-year students stated that there would be no change in their attitudes.



Abbreviations as in Figure 1.

Fig. 2. Distribution of students, according to schools, who think that HIV/AIDS is very important for Turkey.

The distribution of students according to school who thought that HIV/AIDS was very important for the health of the world population was as follows: 49.3% of first-year students and 56.7% of last-year students of the Faculty of Medicine; 53.9% and 74.9% for Faculty of Dentistry, respectively; and 66.5% and 36.9% for MTVTS, respectively (Figure 1) ($p = 0.03$ for MTVTS, $p = 0.02$ for Faculty of Dentistry, $p = 0.01$ for interschool comparisons, while the difference was attributable mainly to the results of Faculty of Medicine students).

The distribution of students according to school who thought that HIV/AIDS was very important for Turkey was as follows: 30% of first-year students and 27.2% of last-year students from the Faculty of Medicine; 34.5% and 46.9% for Faculty of Dentistry, respectively; and 65% and 30.03% for MTVTS, respectively (Figure 2) ($p = 0.03$ for MTVTS).

DISCUSSION

HIV/AIDS has become one of the most serious health problems in the world. HIV-1 infection may be transmitted by occupational exposure in the hospital setting as a result of needlestick injury, by transmission during surgery, in outpatient dental circumstances, or in other instances in which transmission-enabling contact may occur [8]. With increasing numbers of HIV/AIDS patients, physicians, dentists, and nurses taking care of these patients should have sufficient knowledge of the disease, and their attitude and behaviour should be proper. Health care professionals get their knowledge and behaviour from their education system. The Centres for Disease Control and Prevention (CDC) estimated that, in the United States, up to 5000 HIV exposures may occur annually among health care workers [5]. The sample in this study does not represent all young people of the same age and occupational group, but we believe that, like recent studies [9–13], our study will help to generate an overall idea of knowledge and attitudes of young people about HIV/AIDS. The study group was composed only of the students of University, and the results are not representative for the whole country. However, we compared our results with the results of

similar studies including both our country and the world. If schools training health care workers take these results into consideration while planning their education programs on HIV/AIDS, students will improve their knowledge, attitudes, and behaviour with respect to patients with HIV/AIDS and similar diseases.

According to our findings, a difference exists between knowledge levels of first-year and last-year students of all studied schools. We believe that this difference originates from the fact that information on HIV/AIDS is included in the educational programs of the three schools. Moreover, for all three schools, sources of knowledge for first-year students on HIV/AIDS included in the first place written and visual media and lessons taught at high school. Li et al. [14] conducted a study among students aged 15–23 in high schools and found that the sources of knowledge were visual media for 72% of cases, and school education program for 51.8% cases. Oguzkaya-Artan et al. [15] included MTVTS students in their study, finding that 59.5% had graduated from vocational high schools of health. They found that these students' sources of knowledge were mostly written/visual media. The fact that fewer than 20% of first-year students in the present study answered correctly to questions measuring the level of knowledge on HIV/AIDS has led us to speculate that knowledge gathered from written/visual media may be missing or wrong. When last-year students were asked about their knowledge of sources, they mentioned lectures and classes at school.

The differences detected between first-year and last-year students have indicated that lectures on HIV/AIDS in education programs of all schools may be useful; however, rates of correct answers to questions measuring the level of knowledge were around 50–70% among last-year students, which is inadequate for health care workers who are going to provide health care services to HIV/AIDS patients one year later. Students, with the exception of those from the Faculty of Medicine, declared that the lectures in their education programs were insufficient. Kaya et al. [16] included 190 MTVTS students in their descriptive study, finding that mean scores on the HIV/AIDS knowledge of the fourth-year students were significantly higher than

those of the first-year students. General knowledge scores of medicine students were higher than those of midwifery and nursing students.

The fourth-year students were more knowledgeable about the transmission routes and precautions than first-year students. More than half of the students declared that they would not avoid a person with HIV/AIDS, they would not be afraid to touch a person with the disease but they would worry about getting AIDS. Nearly half of the students would not live together in the same home with a person with HIV/AIDS. Mean scores on the knowledge and the number of correct answers to main questions are definitely higher for the last-year students. However, their knowledge and attitudes to patients with AIDS were contradictory. This suggests a need for effective strategies and education programmes for prevention and therapy of HIV/AIDS and developing positive attitudes to people with AIDS. In a study by Zencir et al. [17] of nurses and physicians, subjects indicated that their level of knowledge was insufficient, with rates of 78.6% and 61.3% respectively. Similar results from studies point out that both pregraduate and postgraduate education at medicine and dentistry faculties and nursing schools should be re-evaluated. Mulligan et al. [12] demonstrated that dentists and their technicians could change their knowledge, attitudes, and behaviour toward patients with HIV/AIDS after they attended a postgraduate education program on HIV/AIDS. HIV/AIDS literature has traditionally emphasized problems caused by stigmatising HIV/AIDS carriers. Prevention of HIV is a global priority, and the attitudes of health care providers are a key dimension of successful prevention efforts; however, stigma within health care settings poses a considerable barrier to the provision of treatment and care for patients with HIV/AIDS [18–20]. This barrier may cause serious social problems in the community. Steps must be undertaken to solve this problem, including identification of HIV/AIDS patients and ensuring their consistent treatment [18].

In our study, most students did not want to be educated in the same classroom with a HIV/AIDS colleague. Oguzkaya-Artan et al. [15] reported similarly that 65.5% of the students in their study did not want to be in the same

place with a HIV/AIDS carrier, and almost all would avoid touching that person. In a study by Karadeniz et al. [21], 60% of students admitted that they would be uncomfortable about shaking hands with a patient with AIDS. Bektaş et al. [13] also reported prejudices among students against this patient group. All three studies included students of nursing schools. In our study of the three occupations, the proportion of the Faculty of Dentistry students who did not want to share the same classroom with an AIDS carrier was significantly higher; interestingly, those students declared that in the future they would not avoid treating a patient with AIDS.

We think that this may be the result of their education program intended, among other things, to reduce the risk associated with the treatment of these patients. Askarian et al. [10] reported that their own dentists had many shortcomings in education on HIV/AIDS. In our study, the number of students stating they would try to help a friend with HIV/AIDS was less than expected for all schools, and it is remarkable that this number decreases among the senior students in the Medicine and Dentistry faculties.

One of the most important results of our study is the fact that the necessity to change the wrong attitudes toward this group of patients should be emphasized in HIV/AIDS education programs of students who will become health care providers in the future. Many studies have emphasized that education should be intended for changing knowledge, attitudes, and behaviour [12,18–20]. A positive change in attitude and behaviour as knowledge increases suggests that education should be improved not only in quantity, but also in quality.

Finally, we evaluated students' perceptions of the importance of HIV/AIDS for our country and our world. HIV infection has become pandemic, affecting every region of the world, and is a major cause of morbidity and mortality, particularly among young adults [1]. Strikingly, compared with students from other schools, students of MTVTS thought it less important as they advanced in studies, whereas we expected MTVTS students to give more importance to the issue, as they would soon be providing health care. In the Turhan et al. study [22], out of the total of 1387 high school students responding to the questionnaire, 94.5% believed

that AIDS was an important problem for Turkish society. Elbaş et al. [23] reported that 84.1% of MTVTS students thought of AIDS as a risk for our country. Students' insufficient knowledge about HIV/AIDS is thought to result in neglecting the threat the infection and the disease pose to our country and our world. For this reason we think that the importance of the disease should be emphasized more in education programs.

In conclusion, the importance of HIV/AIDS as a public health problem all over the world and in our country should be emphasized more, and awareness of all humanity should be augmented. In pregraduate and postgraduate education programs of physicians, dentists, and nurses who are at risk of transmission and are responsible for the care and treatment of the HIV carriers, knowledge of HIV/AIDS should be complete, and positive attitudes and behaviours should be encouraged. Insufficient education is obvious among all three occupational groups in our study. For this reason, we believe that, in addition to lectures increasing the level of knowledge in education programs of schools training health care providers, it would be useful to rearrange training in order to bring about positive changes in their attitudes and behaviours.

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