

Knowledge and Attitude of Dentistry, Medicine and Pharmacy Students Related to HIV/AIDS

Diş Hekimliği, Tıp ve Eczacılık Öğrencilerinin HIV/AIDS Konusunda Bilgi ve Tutumlarının Değerlendirilmesi

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ABSTRACT

Objective: HIV is one of the main infectious diseases threatening world health for a long time. It is critical that today's healthcare students have the right knowledge and perspectives on HIV/AIDS, as they are the first line of defense against such a threat locally and globally. This cross-sectional study was carried out to evaluate the knowledge and attitudes of healthcare students toward HIV/AIDS.

Method: In this study, a 4-part questionnaire consisting of 50 questions was administered to 450 healthcare students. Participants' sociodemographic status, general knowledge of HIV/AIDS, their attitude to patients, and their knowledge related to oral manifestations of it were evaluated.

Results: With the participation of 100 students from each of the faculties of dentistry, medicine, and pharmacy, a response rate of 66.7% was achieved. The mean knowledge of HIV/AIDS score percentage was 44.2% in dentistry, 43.3% in medicine, and 44.6% in pharmacy. It was determined that they had a positive attitude towards HIV/AIDS patients, and their mean attitude percentage was 78.6% in dentistry, 75.9% in medicine, and 76.2% in pharmacy. When it comes to the oral manifestations of HIV/AIDS, as expected, dentistry students were found to have higher scores on the most common oral manifestations. Still, it was observed that students of all three faculties were not aware of most lesions.

Conclusion: Although students' knowledge levels were lower than expected, it was determined that most students displayed a professional attitude towards HIV/AIDS. The results obtained from this study revealed that dentistry, medicine, and pharmacy students need more detailed relevant education.

Keywords: HIV/AIDS, attitude, knowledge, dentistry students, medicine, pharmacy

Öz

Amaç: HIV, uzun süredir dünya sağlığını tehdit eden başlıca bulaşıcı hastalıklardan biridir. Yerel ve küresel olarak böyle bir tehde karşı ilk savunma hattı olduklarından, sağlık alanında eğitim görmekte olan öğrencilerin HIV/AIDS konusunda doğru bilgi ve bakış açısına sahip olmaları çok önemlidir. Bu kesitsel araştırma, diş hekimliği, tıp ve eczacılık öğrencilerinin HIV/AIDS'e yönelik bilgi ve tutumlarını değerlendirmek amacıyla yapılmıştır.

Yöntem: Bu çalışmada, 450 öğrenciyi 4 bölüm ve 50 sorudan oluşan bir anket uygulanmıştır. Katılımcıların sosyodemografik durumları, HIV/AIDS ile ilgili bilgileri, hastalara karşı tutumları ve oral bulgular ile ilgili bilgileri değerlendirildi.

Bulgular: Diş hekimliği, tıp ve eczacılık fakültelerinin her birinden 100'er öğrencinin katılımıyla %66.7'lik bir yanıt oranı elde edildi. Ortalama HIV/AIDS bilgi yüzdeleri diş hekimliğinde %44.2, tıpta %43.3 ve eczacılıkta %44.6 olarak bulundu. Genel olarak öğrencilerin HIV/AIDS hastalarına yönelik olumlu tutum sergiledikleri tespit edildi ve ortalama tutum yüzdelerinin diş hekimliğinde %78.6, tıpta %75.9 ve eczacılıkta %76.2 olduğu belirlendi. HIV/AIDS'in oral bulgularında diş hekimliği öğrencilerinin daha yüksek puanlara sahip olduğu tespit edilmiş olsa da her üç fakültede de öğrencilerin çoğu lezyonun farkında olmadığı görüldü.

Sonuç: Öğrencilerin bilgi düzeyleri beklenenden düşük olmasına rağmen öğrencilerin çoğunun HIV/AIDS'e karşı profesyonel bir tutum sergiledikleri belirlendi. Bu çalışmadan elde edilen sonuçlar diş hekimliği, tıp ve eczacılık öğrencilerinin konu ile ilgili daha detaylı eğitime ihtiyaç duyduklarını ortaya koymuştur.

Anahtar Kelimeler: HIV/AIDS, bilgi, tutum, diş hekimliği öğrencileri, tıp, eczacılık

INTRODUCTION

The Human Immunodeficiency Virus (HIV) is the etiological agent of Acquired Immunodeficiency Syndrome (AIDS), an infectious disease that leads to opportunistic infections with the ineffectiveness of the immune system.¹ The virus is transmitted through blood, semen, vaginal fluids, breast milk, or through an HIV-positive mother during pregnancy or delivery.² Although there is no cure for HIV today, current antiretroviral treatments allow infected people to live healthier and longer.³

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With the rapid spread of HIV infection worldwide in the 1980s, its spread was inevitable in Turkey, mainly due to its location in the middle of Eastern Europe and Central Asia. Afterward, the first cases in Turkey were reported in 1985, HIV was included in the list of notifiable diseases, and infection notification was started by following the confidentiality rules. According to the 2022 data from the Public Health Agency of Turkey, 34453 people have been living with HIV since the first case was seen in 1985, and 2177 people are in the AIDS stage.⁴ According to the data of the World Health Organization, 38.4 million people living with HIV worldwide, and 1.5 million people acquiring HIV in 2021.⁵ While the rates of new diagnoses are decreasing in the world, an increase is observed in Turkey.

HIV has a catastrophic effect on the immune system. HIV hides in specific white blood cells called CD4 cells and replicates, leading to an active infection.¹ HIV/AIDS patients experience various distressing symptoms associated with the disease, including oral lesions.⁶ The appearance of oral manifestations of HIV/AIDS, such as candidiasis and hairy leukoplakia, is associated with decreased CD4 cell count and high plasma viral load and can also indicate HIV infection progression.⁷

Healthcare workers are occupationally at high risk of HIV/AIDS infection, as HIV is a contagious disease that can be transmitted through blood and contaminated splash.⁸ Since healthcare students will be the first line to encounter such patients, they shoulder a great responsibility to spread awareness to the population, explaining all the basic knowledge about HIV/AIDS, discovering the cases at early stages, and maximizing the potential for disease prevention. Despite that, the willingness to treat HIV-infected patients has a positive relationship with the amount of knowledge related to disease and stages, awareness of intraoral symptoms, and transmission routes, so increasing the knowledge of the healthcare staff will be the cornerstone of a healthy, more aware, and capable society.⁹

To our knowledge, no published studies are comparing Turkish university students' knowledge and attitudes toward HIV/AIDS patients across the fields of dentistry, medicine, and pharmacy. Additionally, a few previously published studies assessed the knowledge and attitudes of healthcare students concerning HIV/AIDS.¹⁰⁻¹¹ For this reason, this cross-sectional study aimed to evaluate dentistry, medicine, and pharmacy students' knowledge and attitudes toward HIV/AIDS. At the same time, it is aimed to determine whether students need more education on HIV/AIDS.

METHOD

This cross-sectional study was conducted at Altinbas University in Istanbul, Turkey. This study was approved by the Ethics Committee of Altinbas University (19.04.2019, numbered 2019/6). Dentistry, medicine, and pharmacy students were included. Considering that courses on healthcare-acquired infections are offered in all faculties starting from the second year, students in the third year and above were included. All students were informed about the study, and that participation was voluntary. A written voluntary informed consent form was obtained from the students who wanted to participate in the study. Due to the language of faculties education being in English, an English questionnaire was used for the assessment, which is a modification of the ones used in different countries to evaluate the knowledge and attitudes of dental students.¹²⁻¹⁴ To assess the survey's comprehensibility, pilot testing was carried out with a group of students from all three faculties. The survey is administered to a sample of participants on two separate occasions. They were asked to complete the questionnaire and provide feedback on any questions or instructions

that they found confusing or unclear. All the participants ensured that the questions were clear and easy to understand. A reliability test (Cronbach's Alpha=0.896) and for validity two-tailed Pearson Correlation test ($r=0.43$) were performed. The pilot sample was not included in the study population. For sample size calculation, with a margin of error of 0.03, confidence level of 0.95, and an assumed general knowledge range of 75% to 80% regarding HIV,¹³⁻¹⁴ it was determined that a minimum sample size of 285 participants would be required.

Data Collection

A self-administered, structured questionnaire consisting of four parts containing 50 questions was applied in the present study. Part I targeted the participants' sociodemographic characteristics, including age, gender, ethnicity, and grade.

Part II consisted of 18 closed-ended questions about knowledge of HIV/AIDS, with answering options of yes/no/don't know and a scoring of 2 for the correct answers and 0 for no/don't know responses were allocated. If the participant answered all the questions correctly, they would get maximum points for part II (100% correct answers $2 \times 18 = 36$). If the participant answered none correctly, they would get a 0 score. A higher score indicates a higher level of knowledge. Scores of less than 25%, 25-50%, 50-75%, and more than 75% were considered weak, moderate, good, and excellent, respectively.

Part III contained 17 questions assisting the attitudes toward patients with HIV/AIDS. The answers include strongly agree/agree/neutral/disagree/strongly disagree. The participants were instructed to check one answer in each question and a scoring of 5,4,3,2,1, using the Likert scale as a template. If the participants' results were close to or scored 85, that would indicate a positive attitude toward HIV/AIDS patients. Nevertheless, if the participants' results were close to or scored 17 out of 85, that would indicate negative attitudes toward HIV/AIDS patients. Scores higher than 75% were considered as a positive attitude, between 50-75%, and less than 50% were considered as non-professional.

Part IV consisted of 15 questions about the oral manifestations of HIV/AIDS with yes/no/don't know answers and a scoring of 1 for the correct answers and 0 for the incorrect answers.

Statistical Analysis

Data analysis was conducted using SPSS 23.0 software (SPSS, Chicago, IL, USA). Descriptive and analytical tests were utilized in the statistical management of the data. The Kruskal-Wallis test was applied to assess whether there was a difference between the groups for each question. Mann-Whitney U analysis was performed to emphasize the differences between the groups. A p -value of $< .05$ was considered statistically significant.

RESULTS

A total of 450 students, 150 of whom were enrolled in the faculties of dentistry, medicine, and pharmacy were included in the study. Due to missing answers and abandoning the test, 150 participants were excluded. A valid response rate of 66.7% (300 questionnaires) was collected across the different groups, with 100 participants in each faculty. The age and gender data of the participants are shown in Table 1.

Table 1. Demographic characteristics among students across three faculties (n=300)

| | Age (years) | Gender (n) |
|-----------|-------------|--------------|
| Dentistry | 19~33 | M=40 F=60 |
| Pharmacy | 19~33 | M=26 F=74 |
| Medicine | 19~33 | M=29 F=71 |

M: male, F: female

The total mean knowledge percentages regarding HIV/AIDS for dentistry, medicine, and pharmacy students were 44.2%, 43.3%, and 44.7%, respectively. Table 2 illustrates the percentages of correct answers related to HIV/AIDS knowledge. Across the three groups (dentistry, medicine, and pharmacy), participants displayed a high correct response rate to the statement 'HIV/AIDS can contaminate healthcare workers,' with rates of 82%, 81%, and 71%, respectively. Furthermore, dentistry, medicine, and pharmacy participants all agreed that 'needle stick injury can transmit HIV,' with a notably high correct response rate of 83%, 80%, and 81%, respectively. When examining the students' knowledge, a significant difference was found in only three questions among the three groups. In response to the statement "HIV/AIDS patients can be diagnosed with oral manifestations," dentistry students showed a significantly higher correct answer rate compared to pharmacy and medical students ($P < .05$). However, there was no significant difference between pharmacy and medical students. Regarding the statement "The specificity of HIV tests is 100%," medical students had a significantly higher correct answer rate than dental and pharmacy students ($P < .05$). No significant difference was observed between dentistry and pharmacy students for this statement. A difference in response to the statement "Healthcare workers can act as intermediaries for the transmission of HIV" was observed only between pharmacy and dental students, with dental students exhibiting a significantly higher correct answer rate ($P < .05$) (Table 2).

The total mean attitudes towards the patient with HIV/AIDS percentage, including dentistry, medicine, and pharmacy, were 78.6%, 75.9%, and 76.2%, respectively. A higher percentage means a positive attitude toward HIV/AIDS patients. Table 3 shows the percentage of students' attitudes toward patients with HIV/AIDS. While there is no difference between dental and medical students regarding the statement "All patients should be considered potentially infectious," dentistry students exhibit a significantly more positive approach to this question compared to pharmacy students ($P < .05$). The most positive approach to the statement "If I know that my friend has HIV, I end the friendship" is reported by dentistry students ($P < .05$). Although there is no significant difference between their response and that of pharmacy students, it is significantly higher than that of medical students ($P < .05$). Similarly, regarding the statement "HIV/AIDS patients can live with others in the same place," dentistry students display the most positive approach ($P < .05$). While there is no significant difference between their response and that of medical students, it is significantly higher than that of pharmacy students. No significant differences were detected between the groups in terms of other expressions ($P < .05$).

The total mean of oral manifestation of HIV/AIDS, including dentistry, medicine, and pharmacy, was 38.7%, 38.9%, and 25.1%, respectively (Table 4). Despite significant distributions of "yes", "no" and "don't know" answers being noticed between faculties, most of the students were not aware that the lesions questioned were related to HIV/AIDS.

Table 2. Correct response rates of students about Knowledge statements towards HIV/AIDS

| | Question/Answers | Dentistry (d) % | Pharmacy (p) % | Medicine (m) % | P* | P** Difference |
|----|-------------------------------------------------------------------------------------------------|-----------------|----------------|----------------|------|----------------|
| 1 | HIV/AIDS patients can contaminate healthcare workers. | 82 | 71 | 81 | .117 | |
| 2 | HIV/AIDS patients can be diagnosed with oral manifestations. | 58 | 29 | 34 | .000 | p-d m-d |
| 3 | ELISA is a screening test for HIV infection. | 65 | 51 | 54 | .110 | |
| 4 | The specificity of the HIV tests is 100. | 12 | 15 | 37 | .000 | m-d p-m |
| 5 | Western blot is a definite test for HIV/AIDS diagnosis. | 30 | 26 | 28 | .821 | >.05 |
| 6 | Healthcare workers can act as an intermediary for the transmission of HIV. | 63 | 45 | 52 | .037 | p-d |
| 7 | Saliva can be a vehicle for the transmission of AIDS. | 59 | 48 | 56 | .273 | >.05 |
| 8 | All sterilization methods have cidal effects against HIV. | 28 | 26 | 32 | .635 | >.05 |
| 9 | Needle stick injury can transmit HIV. | 83 | 81 | 80 | .858 | >.05 |
| 10 | The negative HIV tests surely indicate that the persons are free of viruses. | 46 | 38 | 48 | .322 | >.05 |
| 11 | Hepatitis B is more communicable than HIV/AIDS. | 14 | 15 | 15 | .974 | >.05 |
| 12 | Infection control methods for Hepatitis B provide adequate protection against HIV transmission. | 36 | 30 | 24 | .181 | >.05 |
| 13 | Medical staff are more prone for cross-contamination. | 66 | 60 | 59 | .546 | >.05 |
| 14 | There is a lot of HIV in the saliva of HIV/AIDS patients. | 54 | 38 | 44 | .072 | >.05 |
| 15 | HIV can be transmitted through aerosols. | 16 | 11 | 21 | .157 | >.05 |
| 16 | There are special clinics for treatment of HIV/AIDS patients in Turkey. | 21 | 26 | 25 | .682 | >.05 |
| 17 | Now, AIDS is the most important health problem in the world. | 33 | 43 | 45 | .181 | >.05 |
| 18 | CPR for patients with AIDS can transmit HIV infection. | 39 | 41 | 44 | .771 | >.05 |

*Kruskal Wallis, **Mann-Whitney U Test

Table 3. Correct response rates of students regarding attitudes toward patients with HIV/AIDS

| | Question/Answers | Dentistry (d) % | Pharmacy (p) % | Medicine (m) % | P* | P** Difference |
|----|----------------------------------------------------------------------------|-----------------|----------------|----------------|------|----------------|
| 1 | Treatment of HIV/AIDS patients means wasting national resources. | 79 | 78 | 77 | .611 | >0.05 |
| 2 | All patients should be considered potentially infectious. | 76 | 68 | 73 | .021 | p-d |
| 3 | If I know that my friend has HIV, I end the friendship. | 83 | 77 | 74 | .039 | m-d |
| 4 | Supporting HIV/AIDS patients improves community health. | 81 | 79 | 79 | .660 | >.05 |
| 5 | Healthcare workers with HIV/AIDS should not be allowed to treat patients. | 65 | 66 | 60 | .150 | >.05 |
| 6 | HIV/AIDS patients should be treated at a separate ward. | 53 | 53 | 49 | .467 | >.05 |
| 7 | A blood test should be taken for diagnosis of HIV in all patients. | 46 | 43 | 46 | .411 | >.05 |
| 8 | I am morally responsible to treat HIV/AIDS patients. | 74 | 73 | 73 | .931 | >.05 |
| 9 | HIV/AIDS patients can live with others in the same place. | 78 | 70 | 72 | .012 | p-d |
| 10 | I am not obligated to treat HIV/AIDS patients. | 64 | 68 | 63 | .269 | >.05 |
| 11 | HIV/AIDS patients can lead a normal life. | 75 | 73 | 73 | .595 | >.05 |
| 12 | I can safely treat HIV/AIDS patients. | 66 | 66 | 64 | .717 | >.05 |
| 13 | I will treat HIV/AIDS patients. | 73 | 71 | 74 | .370 | >.05 |
| 14 | My knowledge about infection control is enough to treat HIV/AIDS patients. | 61 | 55 | 58 | .208 | >.05 |
| 15 | I worry about being infected with HIV by my patients. | 51 | 55 | 51 | .529 | >.05 |
| 16 | I will do CPR if HIV/AIDS patients need it. | 73 | 69 | 73 | .380 | >.05 |
| 17 | It is my right to know if my patients are infected by HIV. | 37 | 40 | 39 | .796 | >.05 |

*Kruskal Wallis, **Mann-Whitney U Test

Table 4 Percentage of Correct Answers to Oral Manifestation of HIV/AIDS

| | Question/Answers | Dentistry(d)% | Pharmacy(p)% | Medicine(m)% | P* | P** Difference |
|----|--------------------------|---------------|--------------|--------------|------|-------------------|
| 1 | Oral candidiasis | 74 | 51 | 67 | .002 | p-m p-d |
| 2 | Kaposi's sarcoma | 46 | 16 | 37 | .000 | p-m p-d |
| 3 | ANUG | 21 | 12 | 27 | .029 | p-m |
| 4 | Major aphthous | 27 | 17 | 30 | .083 | >.05 |
| 5 | Crohn's disease | 29 | 22 | 30 | .383 | >.05 |
| 6 | Cytomegalovirus | 21 | 15 | 30 | .036 | p-m |
| 7 | Hairy leukoplakia | 49 | 19 | 28 | .000 | p-d m-d |
| 8 | Severe periodontitis | 47 | 26 | 44 | .004 | p-m p-d |
| 9 | Xerostomia | 31 | 15 | 27 | .023 | p-d |
| 10 | Salivary gland infection | 47 | 38 | 48 | .294 | >.05 |
| 11 | Gingivitis | 46 | 26 | 43 | .007 | p-m p-d |
| 12 | Herpes zoster | 50 | 36 | 52 | .047 | p-m |
| 13 | Herpes simplex | 47 | 34 | 50 | .037 | p-m |
| 14 | Condyloma | 13 | 16 | 23 | .160 | >.05 |
| 15 | Papilloma | 32 | 33 | 48 | .033 | d-m p-m |

* Kruskal Wallis, **Mann-Whitney U Test

DISCUSSION

Considering the HIV/AIDS epidemic affecting the world and the subsequent role as a first-line defense of healthcare students in clinical practices and treatments, it is undeniable that they need sufficient knowledge about the subject. Their knowledge will also enable them to develop confidence in managing HIV-infected individuals. Since healthcare professionals get their knowledge and attitude from their education system, revealing students' knowledge and perceptions of HIV/AIDS is essential in evaluating the adequacy of HIV/AIDS education in the dentistry, medicine, and pharmacy curricula. This study aims to assess dentistry, medicine, and pharmacy students' knowledge and attitudes toward HIV/AIDS and also analyze the needs of healthcare students regarding the curriculum for HIV/AIDS education.

The mean knowledge about HIV/AIDS among dentistry, medicine, and pharmacy students was 44.2%, 43.3%, and 44.7%, respectively. However, it is lower compared to the excellent level of knowledge reported by Iranian (82.1%) and Indian (78.8%) students.^{12,15} A similar result was found in another study assessing students' knowledge from medicine, dental, and medical technology vocational training schools.¹⁶ The researchers recommend that regular interactive workshops and seminars should be conducted along with HIV/AIDS education sessions and focused lectures.¹⁶

According to WHO, up to date, approximately 38 million people worldwide are living with HIV.⁵ According to the data of the Ministry of Health, while the number of HIV-positive people was 2689 in 2016, the number of HIV-positive people in 2022 became 2971.⁴ There has been an increase in the disease trend over the years. This increase in cases is concerning and addresses the need for massive public education to increase awareness regarding the disease. Compared to the literature, the lack of knowledge can be attributed to the low incidence of HIV/AIDS cases in Turkey and, therefore, the rare probability of students encountering infected patients.

The results of our study showed that about half of the students have the wrong information that HIV can be transmitted through saliva. According to studies directed by the Communicable Disease Center, there is no evidence of HIV transmission by saliva.¹⁷ HIV cannot multiply outside of a human host and does not last very long outside of the

body.¹⁸ Almost all the students misunderstood that HIV is more communicable than Hepatitis B. WHO stated that the Hepatitis B virus could be spread by direct contact with infected blood or body fluids; however, it is 50 to 100 times more contagious than HIV.¹⁹ A study carried out in Nigeria showed that if the level of knowledge about HIV/AIDS among the students and the public was improved, a change in their sexual behavior and increased knowledge in their families was observed.²⁰

In line with the statement that 'HIV/AIDS patients can be diagnosed with oral manifestations', dentistry students scored higher than medicine and pharmacy students due to their lessons and the nature of their work field of encountering patients complaining about oral lesions and treating a specific part of the body. On the contrary, medicine students scored higher than the other groups regarding the statement that 'The specificity of the HIV tests is 100', also due to their encounters and experience. Considering these results regarding HIV/AIDS, adopting a multidisciplinary education approach can provide a better understanding of the disease in all aspects.

The finding of our study revealed that students did not have sufficient knowledge about HIV/AIDS; despite this, they exhibited a professional attitude toward the disease. So, it is notable that the dentistry, medicine, and pharmacy students scored higher in the attitude section than the other sections (78.6%, 75.9%, and 76.2%, respectively). Even if they have low scores on knowledge questions, they are willing to take the risk and treat infected people with HIV. In another study by Oberoi et al., the willingness to treat HIV-positive patients among dental students was 67.0%, and 74.20% were confident of treating a patient with HIV/AIDS.²¹ This shows a better result when compared to a study published by Li et al., 93.7% of students expressed a negative attitude toward patients with HIV/AIDS.²² In another survey conducted in Kuwait, although almost 58% of the respondents demonstrated a high level of knowledge, the majority of the participants (63.6%) showed a negative attitude.²³

Healthcare professionals are among the most vulnerable groups when it comes to viral transmissions. Existing literature underscores the fact that healthcare professionals who are anxious about the possibility of infecting themselves often suffer from psychological consequences. It should be taken into consideration that this situation may affect the attitude of healthcare professionals to patients, and in future studies, it would be useful to assess healthcare workers' quality of life as well as their level of fear and anxiety regarding viral transmission in workplaces and the potential for cross-contamination among family members. Addressing these issues may require the implementation of necessary measures or initiatives aimed at improving the well-being of healthcare professionals in all healthcare settings.

Most dentistry, pharmacy, and medicine students incorrectly identified the oral lesions associated with HIV/AIDS, such as Kaposi's sarcoma, hairy leukoplakia, and salivary gland infection. This shows a similar result with the Egyptian students,²⁴ Kaposi's sarcoma (37%), Hairy leukoplakia (42.1%), and Salivary gland infection (21.4%). Unlike Indian students, they showed higher scores for Kaposi's sarcoma (71%), Hairy leukoplakia (79.4%), and Salivary gland infection (60.9%).¹² This can be explained similarly to the fact that dentistry students responded more accurately to the statement 'HIV/AIDS patients can be diagnosed with oral symptoms' than medical and pharmacy students due to the courses they are enrolled in and their respective fields of study. However, being aware of these crucial intraoral findings can facilitate early disease detection and help minimize the spread of the virus. Therefore, education on this subject is highly essential.

The primary aim of this study was to assess the general knowledge about HIV/AIDS among healthcare students through a questionnaire. Survey responses can be provided anonymously, potentially encouraging more honest and candid answers, especially on sensitive topics like HIV/AIDS. This study was conducted at a single center. While the collected data were suitable for achieving the study's objectives, it's important to acknowledge that the results may not be fully representative of all healthcare students in Turkey. To gain a more comprehensive understanding of HIV knowledge levels among healthcare students in Turkey, conducting a multicenter study with a larger participant pool would be advantageous. Additionally, future research should focus on refining the questionnaire by including more specific questions that target not only students but also patients with HIV/AIDS. Incorporating these aspects into future studies would contribute to a more thorough analysis of HIV/AIDS awareness and its various dimensions.

CONCLUSION

In the limitations of this study, it was found that the students included had deficiencies in their knowledge about HIV/AIDS. It is crucial for healthcare students, as future healthcare providers, to possess sufficient knowledge about HIV/AIDS. Since healthcare professionals derive their knowledge and attitudes from their education system, assessing students' knowledge and perceptions of HIV/AIDS is essential to evaluate the adequacy of HIV/AIDS education in the dentistry, medicine, and pharmacy curricula and the lack of knowledge of faculties on this subject should be included. This is significant because their knowledge will also empower them to develop confidence in managing individuals with HIV infections. Despite knowledge deficiencies, most students in this study exhibited a positive attitude. Given these results concerning HIV/AIDS, adopting a multidisciplinary educational approach can lead to a more comprehensive understanding of the disease, greater awareness of attitudes towards HIV-infected individuals, and the prevention of new infections.

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