RESEARCH

Evaluation of dentists' and dentistry faculty students' knowledge about HIV/AIDS and approaches to the HIV/AIDS patients*

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Selcuk Dent J, 2020; 7: 273-279 (Doi: 10.15311/selcukdentj.568215)

Başvuru Tarihi: 21 Mayıs 2019
Yayına Kabul Tarihi: 16 Aralık 2019

ABSTRACT

Evaluation of dentists' and dentistry faculty students' knowledge about HIV/AIDS and approaches to the HIV/AIDS patients

Background: This study is conducted to measure the knowledge of dentists and dentistry students about AIDS and to evaluate their perspectives, attitudes and behaviors towards HIV-infected individuals.

Material and Methods: This study was conducted on Dicle University Faculty of Dentistry 4th and 5th grade students and dentists. As a result of 2 different questionnaires, evaluations are made on the knowledge of dentists and students about the disease, how they behave towards the patients and their deficiencies. One Way ANOVA test is used for statistical analysis.

Results: When the results of the first questionnaire were considered in the evaluation of the data, the most correctly answered question is ''It is not possible to infect HIV to the patient from healthcare provider' with 93.6%"disagree" response and the most incorrectly answered question is 'If the patient's HIV antibodies are positive, the patient is absolutely immune' with 30.8% "disagree" response.

Conclusions: According to the surveys and analysis dentists and dentistry faculty students have knowledge about HIV/ AIDS but it is not sufficient. Their negative perception of these patients need to be worked on. For this reason, HIV infection-related trainings should be organized for dentists and dentistry students.

KEYWORDS

AIDS, attitudes, dentist, dental students, HIV

ÖZ

Diş hekimlerinin ve diş hekimliği öğrencilerinin AIDS ile ilgili bilgilerinin ve hastalara yaklaşımlarının değerlendirilmesi

ÖZ

Amaç: Bu çalışma diş hekimleri ve diş hekimliği öğrencilerinin AIDS ile ilgili bilgilerini ölçmek ve HIV ile enfekte bireylere karşı bakış açılarını, tutum ve davranışlarını değerlendirmek amacıyla yapılmıştır.

Gereç ve yöntemler: Bu çalışma Dicle Üniversitesi Diş Hekimliği Fakültesi 4. ve 5. sınıf öğrencileri ve diş hekimleri olmak üzere toplam 250 kişi üzerinde gerçekleştirilmiştir. Yapılan 2 farklı anket sonucunda diş hekimlerinin ve öğrencilerin, hastalık hakkındaki bilgileri ve hastalara karşı nasıl bir tutum sergilediği konusunda değerlendirmeler yapılmış, konu hakkındaki eksiklikler belirlenmiştir. İstatistiksel değerlendirmede oneway ANOVA testi kullanılmıştır.

Bulgular: Verilerin değerlendirmesinde ilk anketin sonuçları gözönünde bulundurulduğunda hekimlerin en fazla doğru cevap verdikleri soru 93.6% 'katılmıyorum' yanıtıyla "Sağlık çalışanından hastaya HIV bulaşması mümkün değildir" sorusu, en fazla yanlış cevaplanan soru ise, % 30.8 "katılmıyorum" yanıtıyla 'Hastanın HIV antikorları pozitif ise, hasta kesinlikle bağışıktır' sorusudur.

Sonuç: Dişhekimi ve dişhekimliği fakültesi öğrencilerinin bu konuda bilgi sahibi oldukları, ancak bu bilgilerin yeterli olmadığı ve bu hastalara yönelik olumsuz bakış açılarının ise değişmediği görülmüştür. Bu nedenle, dişhekimleri ve diş hekimliği öğrencileri için HIV enfeksiyonu ile ilgili eğitimler düzenlenmelidir.

ANAHTAR KELİMELER

AIDS, tutum, diş hekimi, diş hekimliği öğrencileri, HIV

Acquired Immune Deficiency Syndrome (AIDS) is one of the most difficult health problems in the world.[1] The treatment of this disease, which is seriously threatening public health, is tiring and expensive.[2] In 1981, cases of pneumonia with Kaposi's sarcoma accompanied with death defined as a new disease in the USA. In 1983, this new disease was caused by retroviruses called Human Immunodeficiency Virus (HIV) and it was shown that the syndrome weakened the immune system.[3,4]

HIV is the most commonly transmitted disease by unprotected sexual contact. In addition to unprotected sexual contact, blood or blood products, breastfeeding or from mother to baby are also transmission ways. There is no contamination by uninjured skin or mucosa, by physical contact like hugging or kissing. HIV is not

* *The study protocol obeys the ethical rules. 2018/20 protocol was approved by Dicle University Faculty of Dentistry Ethics Committee on November 28, 2018.*

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transmitted with saliva, sweat, tears, feces, urine. However, virus transmit with the blood contamination of medicinal materials, syringes or needles. Blood transfusion is the most effective way of transmitting viruses between all transmission routes. In the blood of an HIV-infected patient, the virus is existing both within the lymphocytes and freely. However, even with blood transfusion as a result of some routine practice, the risk of infection is close to zero.[5,6,7]

Another importance of the disease in terms of dentistry is that most lesions seen in the mouth can be observed in the early stages of the disease.[2] Seven cardinal lesions; oral candidiasis, Kaposi's sarcoma, hairy leukoplakia, linear gingival erythema, necrotizing ulcerative gingivitis, necrotizing ulcerative periodontitis, and non-Hodgkin's lymphoma are strongly associated with HIV infection and internationally defined. These lesions can be found in 50% of people with HIV infection and 80% of people diagnosed with AIDS.[8]

Recurrent aphthous ulcers are important problems for these patients. Oral placement of HPV (Human Papilloma Virus) is also typical for AIDS.[9,10]

In 1988, the WHO stated that all dentists should provide dental care to HIV (+) patients.[2,11] In general, it is accepted that both dentists and other health professionals should provide quality treatment and care to all individuals without discrimination.[1] The oral environment is a suitable place for early detection of lesions.[8,11] Oral lesions do not only show infection with HIV, but are also among the early clinical features of infection and are indicative of the progression of HIV disease to AIDS.[12]

According to the Turkish Medical Association, HIV infection is no longer a fatal disease, it is a chronic disease that necessitates the use of lifelong drugs. Studies published so far have shown that healthcare professionals do not have enough knowledge about diagnosis, treatment and dental care of HIV/AIDS patients. It was stated that even more than half of the medical students thought that the treatment of these patients could be dangerous. The increase in the number of cases shows that, together with other health professionals, dentists will need to provide health care to more patients carrying this virus, and both dentists and medical students need to be well trained.[1,2]

The rearrangement of oral health care for a patient is unethical to the dentist on the basis of HIV or AIDS carriage.[2,13] The willingness to treat HIV-infected patients appears to be related to the knowledge of the disease process, the recognition of oral symptoms, and the understanding of the routes of transmission.[2] The aim of this study is to measure the knowledge of dentists and dentistry students about HIV / AIDS, especially about transmission and prevention methods, and to evaluate their perspectives, attitudes and behaviors towards HIV-infected individuals. As a result of the evaluation, the necessity of providing training to eliminate the deficiencies will be questioned.

MATERIAL AND METHOD

In this study, a survey was prepared to determine the knowledge levels of the 4th and 5th class students of Dicle University Faculty of Dentistry and dentists about AIDS and the attitudes and behaviors that they need to show against them. As a result of this survey, the knowledge levels and attitudes of the dentists about HIV/AIDS awareness, HIV transmission routes, HIV contaminated body fluids and the intraoral findings of AIDS were measured and the need for additional training on HIV/AIDS was evaluated. In the 1st Survey listed below, 19 questions were asked and 3 answers were offered as 'agree ',' disagree 'and' 'no idea'. This survey is associated with HIV transmission route and oral findings.

1. There is contamination after contact between the injured skin and the blood of an HIV-infected person to the contact.
2. There is a risk of HIV contamination after percutaneous contact with the blood of the HIV-infected person to the contact.
3. There is a risk of HIV transmission after mucosal contact with the blood of the infected person to the contact.
4. There is HIV transmission after contact with the saliva of the HIV infected person to the contact.
5. The highest risk for HIV transmission is after percutaneous contact.
6. It is not possible to infect HIV to the patient from health care staff.
7. After contamination with HIV, the symptoms of the disease begin to appear immediately.
8. Hepatitis C is more contagious than HIV.
9. HIV can transmit with blood on a handpiece.
10. HIV can transmit with saliva on a handpiece.
11. There is a risk of HIV contamination after skin contact with the skin of HIV-infected patient
12. There is a risk of HIV contamination after contact between eye and the saliva of HIV-infected patient
13. There is a risk of HIV contamination after contact between eye and the blood of HIV-infected patient.
14. The patient is definitely ill if the anti-HIV antibodies are positive.
15. If the patient's anti-HIV antibodies are positive, the patient is carrier.
16. If the patient's HIV antibodies are positive, the patient is absolutely immune.
17. Hairy leukoplakia is an AIDS-specific lesion.

18. Oral candidiasis is an AIDS-specific lesion.

19.HIV should be suspected in the presence of oral aphthae in a systemically healthy adult male.

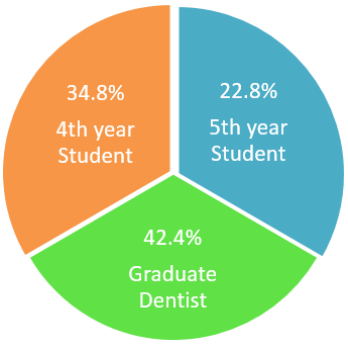
Our second survey is related to the attitudes and behaviors of our students or dentists towards HIV patients. For this survey, 5 options were presented: 'absolutely agree' 'agree', 'undecided', 'disagree' and 'absolutely disagree'.

1. I have a shy attitude towards the HIV positive patient who applied to clinic.
2. I don't want to treat the HIV positive patient who applied to the clinic.
3. I do necessary procedure of the HIV positive patient who applied to the clinic without hesitating
4. The main concern with the dental treatment of HIV positive patients is the personal risk of treatment.
5. My main concern with dental treatment of HIV positive patients is the financial burden caused by infection control.
6. My main concern with the dental treatment of HIV positive patients is the loss of other patients due to the procedure
7. I know the oral findings of AIDS
8. I think that I have enough knowledge about HIV / AIDS.
9. If a training on HIV / AIDS is organized, I will voluntarily participate.
10. I think it is necessary to examine the positivity of HIV before dental treatment.
11. Patients indicate that they carry HIV in their anamnesis.

One Way ANOVA was used for statistical analysis.

RESULTS

The number of 4th class students, 5th class students, graduate dentists participating in our study are respectively 87, 57, 106. Total of 250 people, answer rate of the survey is 100%. Participation rates are showed in Graph 1.



Graph 1.
Participant rates

The correct answers to the first survey are given in the table (Table 1).

Table 1.

Statements - Correct response rates in the first survey

Statements	Correct Response Rates In The First Survey
1. There is contamination after contact between the injured skin and the blood of an HIV-infected person to the contact.	82.8%
2. There is a risk of HIV contamination after percutaneous contact with the blood of the HIV-infected person to the contact.	46%
3. There is a risk of HIV transmission after mucosal contact with the blood of the infected person to the contact.	51.6%
4. There is HIV transmission after contact with the saliva of the HIV infected person to the contact.	48%
5. The highest risk for HIV transmission is after percutaneous contact	62%
6. It is not possible to infect HIV to the patient from healthcare provider.	93.6%
7. After contamination with HIV, the symptoms of the disease begin to appear immediately.	88.8%
8. Hepatitis C is more contagious than HIV	51%
9. HIV can transmit with blood on a hand piece	92.8%
10. HIV can transmit with saliva on a hand piece	44.8%
11. There is a risk of HIV contamination after skin contact with the skin of HIV-infected patient	87.2%
12. There is a risk of HIV contamination after contact between eye and the saliva of HIV-infected patient	33.2%
13. There is a risk of HIV contamination after contact between eye and the blood of HIV-infected patient	83.6%
14. The patient is definitely ill if the anti-HIV antibodies are positive	56%
15.If the patient's anti-HIV antibodies are positive, the patient is carrier	32%
16. If the patient's HIV antibodies are positive, the patient is absolutely immune	30.8%
17.Hairy leukoplakia is an AIDS-specific lesion.	48%
18.Oral candidiasis is an AIDS-specific lesion.	64%
19.HIV should be suspected in the presence of oral aphthae in a systemically healthy adult male.	62%

One of the aim of this research is differentiate response of researched groups. (4th class students, 5th class students and graduate dentists).

One of the most significant response difference is the fifth statement which is "The highest risk for HIV transmission is after percutaneous contact.". This statement is evaluated correctly at the rate of 62% where the 5th class gave higher correct answers than the other groups.

Our sixth statement which is "It is not possible to transmit HIV from the patient to the healthcare provider." was evaluated correctly with the rate of 93.6% in our survey. It was the most correctly responded case and a significant difference was

observed between the groups. The dentists gave a lower rate of response than the other groups.

Other statements about the transmission routes evaluated in the survey are responded without significant difference between the participating groups.

Another statement, which intrigue us, pollster, with responses to, is "Hepatitis C is more contagious than HIV." Reason for this statement to be interesting is that it has 51% of the correct answer to the statement while it has the highest "I have no idea" the answer with a rate of 23.7%. About the statement where there was a significant difference between the groups, we obtained the highest rate of correct answer between participants by the graduate dentist.

In survey's 13th statement "There is a risk of HIV contamination after contact between eye and the blood of HIV-infected patient." which is a true directive is responded significantly different by the groups. In this statement, answers of 4th class students have more "no idea" than other groups.

In our 3 statements which we asked about HIV markers, we encountered the highest "no idea" answers in our survey. Number of true answers were almost equal to the number of 'no idea' responses.

There are significant differences between the groups' responses in the three statements we asked about the symptoms of AIDS. Highest correct answer rate to these statements are obtained by graduate dentists.

In our 2nd survey, with the questions we evaluated the participants' attitudes towards HIV patients.

For the statement "I exhibit timid attitudes towards HIV positive patients who consult to the clinic." We obtained no significant difference between the participating groups.

Statement which is displayed in Table 2 shows significant difference between the groups. The 5th grade students responded distinctively than the other groups (Table 2).

Statement which is displayed in Table 3 shows significant difference between the groups. The 5th grade students responded distinctively than the other groups again (Table 3).

Table 2.

Percentage distribution of group responses

Groups	I do not want to treat the HIV positive patient who applied to the clinic					Total
	Absolutely agree	Agree	Undecided	Disagree	Absolutely disagree	
4th Class	0,056	0,101	0,36	0,36	0,124	100,0%
5th Class	0,207	0,069	0,379	0,31	0,034	100,0%
Graduate Dentists	0,068	0,184	0,311	0,311	0,126	100,0%
Total	**0,096**	**0,128**	**0,344**	**0,328**	**0,104**	**100,0%**

Table 3.

Percentage distribution of group responses

Groups	I do without hesitation the procedure of the HIV positive patient who applied to the clinic					Total
	Absolutely agree	Agree	Undecided	Disagree	Absolutely disagree	
4th Class	0,034	0,202	0,382	0,292	0,09	100,0%
5th Class	0,276	0,103	0,414	0,207	0,276	100,0%
Graduate Dentists	0,087	0,204	0,417	0,194	0,097	100,0%
	0,048	**0,18**	**0,404**	**0,232**	**0,136**	**100,0%**

Statement which is displayed in Table 4 shows significant difference between the groups. 4th year students and dentists responded "I agree" respectively, 58.4% and 50.5%. 5th class students responded "Absolutely disagree" with the rate of 41.4% (Table 4).

Table 4.

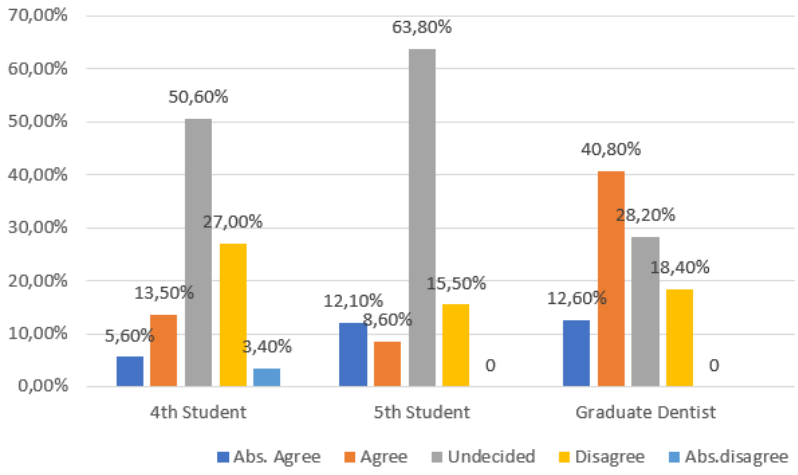
Percentage distribution of group responses

	The main concern with the dental treatment of HIV positive patients is the personal risk of treatment					Total
	Absolutely agree	Agree	Undecided	Disagree	Absolutely disagree	
4th Class	0,236	0,584	0,146	0,034		100,0%
5th Class	0,414	0,397	0,155	0,034		100,0%
Graduate Dentists	0,223	0,505	0,136	0,078	0,058	100,0%
	0,272	**0,508**	**0,144**	**0,052**	**0,024**	**100,0%**

We questioned the reasons for being anxious about the patient by asking if dentist see dental treatment of HIV positive patients as a financial burden caused by infection control and if dentist concerns about dissatisfaction of other patients due to the procedure of dental treatment of HIV positive patients in the same clinic. There is no significant difference between the attitudes of dentist groups about their concerns.

We asked participants to self-evaluate their knowledge about oral findings of AIDS. There is no significant difference between the participating groups. The respondents seem like that they are not sure about their knowledge and skills to diagnosis HIV.

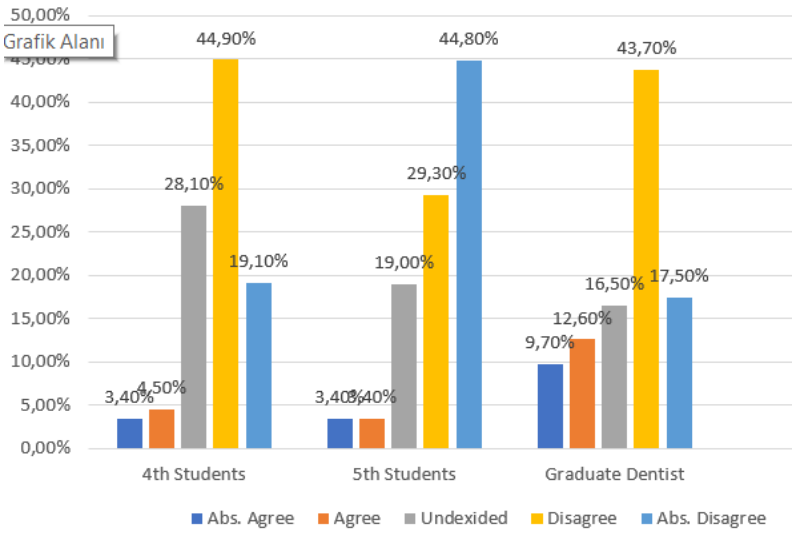
Another statement "I think I have enough knowledge about HIV/AIDS" has answered significantly different by the participating groups. Respectively, our 4th class students and 5th class students gave answer as "undecided" 50.6% and 63.8% (Graph 2).



Graph 2.

Significant difference between the groups

"If a training on HIV/AIDS is organized, I will voluntarily participate" and "I think it is necessary to examine the positivity of HIV before dental treatment." Statements have no meaningful different between the groups.



Graph 3.

Significant difference between the groups

Our last question is "Patients indicate that they carry HIV in their anamnesis.".4th class students, 5th class students and graduate dentists responded as "absolutely disagree" respectively 19.1%, 44.8% and 17.5%. 5th class students distrust to patients is interesting (Graph 3).

DISCUSSION

AIDS is a fatal disease that was first described in 1981 in a group of homosexual men in the United States and was identified by the detection of Kaposi's sarcoma. HIV that causes this disease makes the treatment of the disease impossible by reducing or destroying the body's defenses. Over time, HIV infection, which has ceased to be a fatal disease, has turned into a chronic disease that requires the use of very expensive drugs economically for life. There are many ways of transmission of HIV infection such as sexual way, blood and blood products, and transition from mother to baby. In particular, health workers are in contact constantly with blood and saliva, so they are at professional risk. In our study, we examined the knowledge level of the dentistry occupational group with high risk of transmission of HIV. Similar studies were conducted by Rose et al. in Yeditepe University by Günbatan et al. and by Clement Chinedu Azodo et al. in Nigeria.[2,14,15]

One of the most important routes of transmission of the disease is by means of blood. The infection is carried out in three ways: parenteral, percutaneous and inoculation. However, in order for the infection to develop, blood contact, frequency and the amount of the virus in the blood are important. In order for this, there must be an infectious virus in bloodstream or should be provided direct contact with blood and blood products (non-gloved). Working with gloves significantly reduces the risk of infection by dentists and other health workers. For this reason, sterilization, cross infection and ways to prevention methods should be known. In our study, the question of transmission of HIV infection with blood, which is one of the most correctly answered questions, has also been correlated with other studies.[16] It was seen that dentists and dentistry students had sufficient knowledge on this subject.

There is no risk of transmission of HIV infection with saliva. However, health workers often hesitate. A study at Yeditepe University showed that students believe that direct contact with blood is more infectious than saliva, but 47.2% of the students thought that saliva could be a tool in the transmission of AIDS. In addition, these results were found to be consistent with the findings of other studies.[17] In our study, 48% of our students think that this disease transmitted after contact with the saliva of the infected person.

Knowing the symptoms of AIDS is extremely important in terms of early diagnosis and treatment. Al-Naimi et al[18] reported a high relationship between oral candidiasis and HIV. Bindal et al[19] also found that oral candidiasis was more common in HIV-related lesions. In our survey, it was determined that oral candidiasis and hairy leukoplakia was an AIDS-specific lesion and that the highest number of dentists responded correctly.

When some studies are evaluated, it has been observed that the transmission has increased due to fear of these patients in society. Because these patients cannot explain their illnesses due to the psychological pressure.[20] The questions directed to the dentists in our 2nd survey determine the attitudes of students and physicians towards these patients. In particular, in the first question 'I exhibit a shy attitude towards HIV-positive patients" most of the answer of question is 'agree'. This is a sign of prejudice and stigma against the disease.

Dönmez and Şenol[21] found that the majority of the students had a negative attitude towards people with AIDS in their research. In 2002, Herek, Capitanio and Widaman, 30.3% of the students did not want to go to the same school with HIV patients.[22] Similarly, in our survey, a negative attitude towards these patients is observed with a 3.4% rate of 'agree' response to the question "I do necessary procedure of the HIV positive patient who applied to the clinic without hesitating". Generally, in our survey, dentists gave more correct answers to questions than students. This shows that as the level of knowledge increases, the positive perspective towards AIDS patients increases. In a different study conducted on nursing students in Germany, it was found that as the level of knowledge increased, the positive attitude towards AIDS patients increased.[23]

According to the responses of dentist who knows the oral symptoms of the patients with AIDS and show positive responses to the volunteer participation in the trainings for these patients are conscious of these patients' existence and needs.

CONCLUSION

HIV infection is increasing in our country and in the world. It is clear that AIDS has become a disease that affects every part of the society, especially health workers. Especially individuals who may be in close contact with this disease should have a high level of knowledge about this disease. As a result of our research, it was seen that the students and dentists had knowledge about this subject but this information was not sufficient and the point of view towards these patients did not change completely. For this reason, HIV infection-related training should be organized for individuals who may be in risk groups.

In addition, these patients should not be isolated from the community. Prejudice and stigmatization will have a negative effect on the patient. These patients should be approached more consciously.

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