

HIV-Related Discrimination among Senior Dental Students in Jeddah

Ehab Alshouibi¹, Faten Alaqil²

¹Department of Dental Public Health, King Abdulaziz University, ²Department of Restorative Dentistry, Faculty of Dentistry, King Abdulaziz University, Jeddah, Saudi Arabia

ABSTRACT

Aims and Objectives: Advances in the medical management of HIV infection have increased life expectancy and reduced the mortality rate of infected individuals. As a result, dental and medical health-care workers have a higher chance to meet HIV-positive patients in their clinics. People living with HIV and AIDS (PLWHA) are frequently experiencing discrimination. That negative attitude toward HIV remains quite common among health-care professionals. The purpose of this study was to assess students' attitudes toward PLWHA.

Materials and Methods: The present study was a cross-sectional survey to assess the attitudes of senior dental students toward HIV/AIDS in Jeddah, Saudi Arabia. Data were collected using an online self-administered questionnaire. Data analysis was done using the statistical package of social sciences. Descriptive statistics including means, standard deviations, frequencies, and percentages were calculated and used to present the data. A binary logistic regression model was constructed to estimate the effect of different predictors on the level of HIV-related discrimination.

Results: A total of 400 individuals took part in the study. Bivariate analysis of HIV discrimination in relation to other variables showed that those reluctant to treat HIV patients, the majority (82%) showed a negative tendency toward HIV/AIDS patients, while 75% who were willing to treat them exhibited more positive attitudes, which was statistically significant ($P < 0.0001$). The discrimination was high, almost 87%, among those who feared accidental exposure to HIV patients; however, 73% of those who did not experience fear, felt nondiscriminative, which was also statistically significant ($P < 0.0001$).

Conclusions: Stigmatizing views toward PLWHA exist among senior dental students in Jeddah. The most significant predictors of discrimination included fear of accidental exposure, reluctance to provide treatment to these patients, and self-protective concerns.

KEYWORDS: AIDS, dental students, discrimination, HIV, stigma

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INTRODUCTION

HIV infection is not a terminal or fatal disease anymore; instead, it is considered to be a chronic manageable illness.^[1] In the past three decades, advances in the medical management of HIV infection have increased life expectancy and reduced the mortality rate of infected patients. As a result, dental and medical health-care workers have a higher chance to meet HIV-positive patients in their clinics. According to the latest global statistics on the status of the AIDS epidemic,^[2] issued by the United Nations Joint Programme on HIV/AIDS (UNAIDS), there were an

estimated 36.9 million people living with HIV around the world in 2017; moreover, 8200 of them are living in Saudi Arabia.^[3] Most of them live in major cities: Jeddah (40%), Riyadh (15%), and Dammam (12%).^[4]

People living with HIV and AIDS (PLWHA) are liable to have a higher risk and spectrum of oral diseases and conditions. Oral health-care availability and

Address for correspondence: Dr. Faten Alaqil,

Department of Restorative Dentistry, Faculty of Dentistry, King Abdulaziz University, P.O. Box 80209, Jeddah, Saudi Arabia.

E-mail: falaqil@kau.edu.sa

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accessibility for PLWHA are essential, as they suffer a greater incidence and severity of dental disease than the general population. Thus, maintaining oral health for HIV patients is highly challenging. Yet, the majority of HIV-positive patients do not receive dental treatment. It has been found that only 9.1% of HIV-positive adults with oral symptoms associated with HIV and/or HIV treatment received dental treatment.^[5] Data from the highly active anti-retroviral therapy project identified several barriers that may contribute to inadequate dental care received by PLWHA. The existence of prejudicial attitudes and discriminatory behaviors among dental care providers were reported as significant barriers to normal dental care among PLWHA.^[6,7] Although concerns about the deleterious effects of HIV- and AIDS-related stigma has been articulated since the mid-1980s, the world is still attempting to deal with the HIV/AIDS epidemic and its associated discrimination.

According to UNAIDS 2015 guidelines on terminology, stigma was defined as “beliefs and/or attitudes marking or staining a person or group of people as unworthy or discreditable.”^[8] Discrimination, on the other hand, was defined as “enacted stigma” or behaviors that stemmed from these stigmatizing beliefs.^[9] Behaviors such as double gloving, declining to treat a patient, or any biased act toward patients due to their HIV status is considered discriminatory behavior.^[10] In general, these behaviors vary in degree: Some are explicit, such as refusing to provide treatment, while others are subtle, which includes treating them with less care or emotional support.

Several studies assessed the attitudes toward PLWHA. In one done at four different universities in the United Arab Emirates, 85% of students showed negative attitudes toward PLWHA.^[11] However, the results of another study done at Ajman University showed that the majority of students had a positive attitude toward PLWHA.^[12] In Saudi Arabia, PLWHA frequently experiences discrimination. A study conducted in Riyadh explored stigmatizing attitudes of both educated males and females toward PLWHA and found that many participants exhibit a bias toward HIV patients. These attitudes ranged from ending friendships with PLWHA to isolating them at school or in the community. Males had more stigmatizing attitudes compared to females. The lack of knowledge regarding disease transmission and prevention were significant factors in these negative views.^[13,14] Another study conducted in Jeddah showed that the citizens had an overall negative attitude toward PLWHA.^[15] A study analyzed data from 162 Saudi male college students showed that those with minimal knowledge about HIV/AIDS were more likely to stigmatize PLWHA.^[16]

Despite the legal prohibition of discrimination, that negative attitude toward HIV remains quite common among health-care professionals. A study of a nationally representative sample of HIV-infected adults found that 26% of them reported experiencing discrimination. Those respondents attributed it to physicians (54%), dentists (32%), nurses and other clinical staff (39%), hospital staff (31%), and case managers or social workers (8%).^[17] However, in a study on attitudes among physicians found that dentists had higher stigma index scores than other health-care providers, while consultants had higher stigma scores compared to general practitioners.^[18] Patel *et al.* found that almost half of the participants reported anticipation of being judged or stigmatized while visiting a dentist.^[7] A study among nursing students in Riyadh reported overall negative attitudes toward PLWHA with a mean score of 43.48 ± 9.21 .^[19]

To date, there are limited studies on the stigma toward PLWHA in Saudi Arabia, particularly among dental students. Therefore, the purpose of this study is to assess students' attitudes toward PLWHA.

MATERIALS AND METHODS

The present study was a cross-sectional survey to assess the attitudes of senior dental students toward HIV/AIDS in Jeddah, Saudi Arabia. Ethical approval (no. 013-01-17) was obtained from the local Ethics Committee. The study was carried out at four dental schools in Jeddah, with students from all government and private universities eligible to participate. The inclusion criteria were senior dental students of both genders, actively enrolled in academic education during the study, actively enrolled in clinical training and patient care services, and did not take any continuous education in dental management of patients with infectious disease. The sample size was estimated based on previous studies. The literature has reported few studies in this field with a sample size ranged between 100 and 500.^[12,20,21] Accordingly, a sample of 400 is considered to be sufficient to estimate the potential outcome and its relation to the predictors in the current study.

Data were collected using an online self-administered questionnaire, presented in English. The questionnaire included closed-ended questions and was adopted and modified from previous studies.^[22-24] The actual data collection was carried out between January and April 2018. The survey provided complete anonymity of individual participants, as involvement in the survey was voluntary. The questionnaire for the study contained questions pertaining to the knowledge of dental students, their attitude toward PLWHA, infection control

practices, and willingness to provide care to HIV-positive individuals. It consisted of three main sections with a total of 88 questions. The first section was about participants' demographics (age, gender, marital status, and educational institution), followed by a second section devoted to routine infection control and personal protective equipment. The final section was developed to measure participants' HIV-related knowledge (a total of 38 questions) and attitudes toward HIV patients (a total of 34 questions) as well as to detect any different attitudes based on the HIV status of patients.

STATISTICAL ANALYSIS

Data analysis was done using the statistical package of social sciences, version 22, (SPSS, Chicago, IL, USA). Descriptive statistics including means, standard deviations, frequencies, and percentages were calculated and used to present the data. A binary logistic regression model was constructed to estimate the effect of different predictors on the level of HIV-related discrimination among dental students' as a dependent variable after controlling for potential confounding variables. The dependent variable "HIV-related discrimination" was determined by 20 related questions. If the participant positively answered 10 or more questions, that was considered discriminatory toward HIV patients. Five independent confounders were used: "participants' gender, fear of accidental exposure, reluctance to provide dental treatment, HIV-related knowledge, and a self-protective attitude against HIV." Both HIV-related knowledge and a self-protective attitude against HIV were continuous variables. Odds ratio was calculated at 95% confidence interval to estimate the potential relationship and effect of different predictors of HIV-related discrimination; the findings were considered to be statistically significant at $P < 0.05$.

RESULTS

Total students approached with the survey were 584, of which 400 students responded with completed questionnaires, with a response rate of 68.5%. One hundred individuals (male and female from their senior "6th year") participated from each dental school. Approximately equal numbers of male (51.5%) and female (48.5%) dental students participated. The most common action on the arrival of HIV patients was to wear protective eyeglasses (100%), followed by patient referral to a specialist (95%), and the use of double gloves (90%). Almost 33.5% of participants feared cross-infection while providing dental treatment to HIV patients, whereas 93.5% were concerned with possible accidental exposure to HIV. Furthermore, 92% were reluctant to provide dental treatment to HIV patients. The results found that almost 89% of the study sample felt

discriminatory [Table 1]. Mean and standard deviation of HIV-related knowledge and a self-protective attitude were 8.2 ± 5.7 and 10.1 ± 3.5 points, respectively [Table 2].

Bivariate analysis of HIV discrimination in relation to other variables showed a comparatively higher number of discriminatory males (84%) compared to females (77%), which was not statistically significant ($P = 0.07$). Of those reluctant to treat HIV patients, the majority (82%) showed a negative tendency toward HIV/AIDS patients, while 75% who were willing to treat them exhibited more positive attitudes, which was statistically significant ($P < 0.0001$). The discrimination was found to be high, almost 87%, among those who feared accidental exposure to HIV patients; however, 73% of those who did not experience fear, felt nondiscriminative, which was also statistically significant ($P < 0.0001$) [Table 3].

A logistic regression model fitted to the variables acted as independent predictors to estimate their effect on HIV-related discrimination, which was an outcome after adjusting for all confounding effects. The regression model indicated that males showed 10% more HIV-related discrimination compared to females.

Table 1: Demographic data of participants

Variable	Percentage
Gender	
Male	51.5
Female	48.5
Action done when HIV patient arrived	
Refer to a specialist	95
Double gloves	90
Protective eye wears	100
HIV-related discrimination	
Yes	89
No	11
Lack of confidence to provide dental treatment to HIV patients	
Yes	92
No	8
Fear of cross-infection during provide dental treatment to HIV patients	
Yes	33.5
No	66.5
Fear of possible accidental exposure to HIV patient	
Yes	93.5
No	6.5

Table 2: Mean and standard deviation of HIV-related discrimination and self-protective attitude

Variable	Mean±SD
HIV-related knowledge	8.2±5.7
Self-protective attitude	10.1±3.5

SD=Standard deviation

Table 3: Level of discrimination compared between genders and type of practice

Variables	Discrimination		Total	P
	No	Yes		
Gender				
Male	33 (16.02)	173 (83.98)	206 (100)	0.070
Female	45 (23.2)	149 (76.8)	194 (100)	
Lack of confidence to provide dental treatment to HIV patients				
Yes	66 (17.9)	302 (82.1)	368 (100)	<0.0001*
No	24 (75)	8 (25)	32 (100)	
Fear of possible accidental exposure to HIV patient				
Yes	49 (13.1)	325 (86.9)	374 (100)	<0.0001*
No	19 (73.07)	7 (26.93)	26 (100)	

*Level of significance at 0.05

Moreover, those with higher HIV-related knowledge were 4% less likely to feel discrimination, even though these findings were not statistically significant. As stated, fear of accidental exposure, reluctance to provide treatment and self-protective attitudes were statistically significant and associated with HIV discrimination. Dental students concerned about accidental exposure and reluctant to treat HIV patients showed 3 and 2.7-times higher levels of discrimination toward them, respectively. Those with a self-protective attitude toward HIV were 91% more likely to be discriminatory. All of these findings were statistically significant ($P < 0.0001$) [Table 4].

DISCUSSION

This study found that discrimination in senior dental students was high, consistent with previous studies conducted among dental students from different parts of the world. A study in India showed that medical and dental students' attitudes toward HIV-positive patients were unsatisfactory and needed change. Almost 38% of medical and 52% of dental undergraduates believed that HIV-positive patients should be isolated to prevent the spread of infection.^[23] Kuwait University (KU) dental students had negative views toward HIV/AIDS patients, while 85.5% of students had concerns that working with AIDS patients could endanger their health: 34.5% refused to treat HIV-positive patients.^[25] A study in Malaysia found that most dental students reacted negatively toward PLWHAs. Only 55% expressed willingness to treat HIV patients and 49% feared infection.^[26] In Nigeria, where the prevalence of PLWHA is high, 41.2% of dental students were unwilling to treat HIV-positive patients.^[27]

Regarding factors that influence student discrimination, our study showed that fear of accidental exposure, reluctance to provide treatment to HIV-positive patients, and self-protective behavior were significantly associated with discrimination. It is well-known that this infectious disease elicits fear in health-care providers, as well as dental students. Since dentists have frequent exposure

to patient's blood and blood-contaminated saliva during dental procedures, there is greater opportunity for HIV transmission. However, the risk of contracting the virus through occupational exposure is very low when using proper barrier precautions. It has been estimated that the risk of virus transmission is only 0.3% after a single percutaneous exposure to HIV/AIDS-infected blood.^[28] Despite the relatively low risk of HIV transmission in dental settings, results still showed an increased number of dental students demonstrating a fear of becoming infected with HIV infection. Therefore, refrain of dental students to treat HIV-patients is a common finding. As with dental students in University of Jordan, total percentage of 65.5% were unwilling to provide treatment to HIV/AIDS patients and thought that those patients should be referred to other centers.^[29] The level of student willingness to treat HIV-positive patients was affected by the lack of knowledge about PLWHA. Only 8% of students in the present study would have been willing to provide dental treatment to HIV patients.

This study also explored how knowledge of HIV/AIDS influenced their attitudes. There was an inverse correlation between knowledge and discrimination, although it was not statistically significant. To the contrary, Memish *et al.* found a significant connection between less knowledge of HIV and higher mean stigma scores.^[18] Improved knowledge of HIV (route of transmission, transmission risk, and universal precautions) along with previous experience in treating vulnerable populations was correlated with an improved reaction toward PLWHA.^[30] Research also found that the level of knowledge had no relation to the fears of medical and dental students.^[21] A study in Iran showed that the majority of students had excellent knowledge, with 1% having positive attitudes about treating HIV patients.^[31] Ellepola *et al.* compared dental students' knowledge and views toward HIV/AIDS at KU, Kuwait and the University of Peradeniya (UP), Sri Lanka. Their study found greater knowledge among KU students, while UP students were more positive in

Table 4: Logistic regression model of discrimination levels compared to different variables

Variable	OR	95% CI		P
		Lower	Upper	
Gender (male)	1.10	0.73	1.8	0.897
Fear from accidental exposure	3.01	2.4	5.6	<0.0001*
Lack of confidence to provide treatment	2.70	1.9	4.4	<0.0001*
HIV-related knowledge	0.96	0.7	1.38	0.825
Self-protective attitude against HIV	1.91	1.6	2.3	<0.0001*
Constant	0.1			0.003

*Level of significance at 0.05. OR=Odd ratio, CI=Confidence interval

comparison.^[25] Similarly, a study in Iraq showed that knowledge of medical students was better than dental students, nevertheless, the attitude toward HIV-positive patients of dental students was better.^[32] The inadequate knowledge in risk of HIV needle stick injury, action of antiretroviral drugs, and the most common methods of HIV transmission was reported as a gap in HIV-related knowledge among dental students in Baquba Teaching Hospital in Iraq.^[33]

Social background might have had a negative effect on student familiarity with PLWHA. A common belief that HIV can only be transmitted through sexual behavior or by sharing the same needle of an infected person is globally embraced. This erroneous belief allowed them to stigmatize PLWHA and look at them as inferior. About 45% of Saudi medical health providers have strong judgmental attitudes, attributing PLWHA as responsible for this condition.^[18] However, Saudi Arabian law prohibits health-care providers from refusing services to those with HIV disease. Accordingly, refusing services to HIV-positive patients is prohibited under federal law.^[34] This negative attitude could be attributed to the low prevalence of the disease in Saudi Arabia compared to other countries, which similarly limited the number of awareness programs about discrimination. Further education and training of health care workers about laws protecting PLWHA are necessary.

This research focused on students in their final year of the dental program, who are considered to be an integral part of the future oral healthcare workforce. Graduating dental students must have optimal professionalism, infection control skills, and awareness of patients' rights and case confidentiality. They should be competent in providing dental care to all patients, including HIV/AIDS patients. Dental educators are using the information from studies assessing the existence of HIV-related discrimination to enhance dental curricula and improve the provision of optimal care to PLWHA: This should

cover the HIV route of transmission, treatment, and its implications in dental management, toward the promotion of stigma-reducing views. One of the strengths of this study is that data were collected from dental students from all dental schools in Jeddah city. This helped to give a larger pool of study sample recruitment and to ensure diverse educational background of the study participants. However, the current study subjected to potential limitations, which may include susceptibility to self-reported bias, recall bias, and social acceptability bias. There is limited number of studies in KSA and Middle East addressing this issue. Doing a systematic review would be our recommendation for future study. Furthermore, future research should explore the effect of relevant factors in reducing discrimination by conducting longitudinal studies.

CONCLUSIONS

Stigmatizing views toward PLWHA exist among senior dental students in Jeddah. The most significant predictors of discrimination included fear of accidental exposure, reluctance to provide treatment to these patients, and self-protective concerns. Understanding the factors that affect discrimination can help reduce and monitor these issues among students. University educators must take greater responsibility to promote more positive attitudes with PLWHA to ensure that all patients receive proper oral health care. This can likely be achieved through lectures about HIV, which should include ethical and legal issues, risk of virus/disease transmission, and the use of standard precautions for preventing its transmission.

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CONFLICTS OF INTEREST

There are no conflicts of interest.

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