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A comparison between the knowledge and attitude of private and public universities dental student regarding HIV, Riyadh, Saudi Arabia

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Abstract

Purpose: This study was conduct with an objective to compare between the knowledge and attitude of private and public universities' dental students regarding HIV, Riyadh, Saudi Arabia.

Methodology: An online questionnaire was used to collect the data from dental students of public and private universities. Questionnaire was pre-coded and included closed ended questions. Data was analyzed by IBS SPSS version 21. Descriptive statistics such as frequencies and percentages were computed to describe the demographic information about dental students such as academic level, gender, university and age.

Results: most of the students (90.0 %) were aware that "HIV/AIDS can be transmitted to dental workers" and majority of the students (85.5 %) knew that "HIV/AIDS can be diagnosed with oral manifestations". Similarly most of the students (87.1 %) knew that "HIV can be transmitted through Needle injury" and (84.7 %) students aware that "The dentist must provide dental treatment for HIV-positive". It was noted that (81.7 %) and (85.3 %) of the students knew that "Hepatitis more transmissible than HIV/AIDS" and "Medical staff is more susceptible to HIV transmission", respectively. More than half of the students (66.7 %) and (76.1 %) responded that "You will perform CPR if HIV/AIDS patients need it" and "Patients with HIV/AIDS can live in the same place with others", respectively. In general, knowledge and attitude towards HIV/AIDS of dental student was examined. It was concluded that students have good knowledge about HIV/AIDS but there attitudes towards HIV/AIDS was not good. Therefore, more efforts are required to improve the attitudes of future dentists.

Unique Contribution to Theory, Policy and Practice: The results of this study show the importance and necessity of medical courses that deal with the subject of HIV/AIDS, focusing not just on furthering HIV knowledge but also on dealing with stigma, anxiety and misperceptions about HIV/AIDS and PLWHA. In addition, it is extremely important to conduct

these courses before the students start their clinical studies so that correct and sufficient knowledge and attitudes, which are required when dealing with patients, are already well embedded in the students' minds by that time.

Keywords: *Knowledge, Attitudes, HIV, AIDS, Dental Students*

1. Introduction

In the pre-clinic years, dental students at private and public universities receive a full education about HIV, its impact, its severity, and the mechanism for dealing with it. Human immunodeficiency (HIV) is a disease which results in decreased chemotaxis, defective granuloma formation and maintenance, impaired antigen processing and presentation, and generalized loss of CD4+ T cells (Patil et al., 2011). Later on, they will develop Acquired Immune Deficiency Syndrome (AIDS), which makes the body's immunity very weak. Dentist can be discovered the disease by the signs and symptoms in the patient mouth which is the main site where the signs of AIDS appear. HIV is primarily transmitted through sexual contact, parental exposure to contaminated blood and blood products and perinatally from infected mothers to their infants. Transmission by blood and blood products essentially occur through the use of contaminated needles or sharp objects and also through transfusion with contaminated blood.

Effective anti-transmission measures and adequate knowledge such as taking universal precautions in the handling of blood and other body fluids are important factors in minimizing the risk of HIV transmission in the health-care setting (Askarian et al., 2006). Oral health procedures, patient-care and instruments require specific strategies and protocols aimed at preventing the transmission of HIV/AIDS between oral healthcare providers and patients as well as between patients themselves (Greeff et al., 2007). The prevalence of HIV in Saudi Arabia and in the Middle East is considered to be among the lowest rates globally (0.02%) (Alhuraiji et al., 2014).

Most clinical dental students indicated that they were afraid of contracting HIV/AIDS while treating patients with this condition (Alawad et al.,2019). Male students were reported to have significantly stronger negative attitudes towards patients at risk for or with HIV infections/AIDS than female students (Seacat et al.,2003). This is despite the World

Health Organization declaration, which clearly states that all dentists should treat HIV+ patients and have no right to reject a patient just because they have HIV/AIDS (Burris et al.,1996). Dental students should deepen their knowledge about the HIV/AIDS virus and greatly improve their attitudes toward HIV sufferers (Burris & S., 1996). Studies similar to ours have been conducted to "assessment of knowledge and attitude towards hiv patients among dental students in Saudi Arabia". In Jazan study, the attitude towards treating AIDS patients among dental students was not up to the professional standard and their related knowledge was low (Kumar et al.,2018).

Ansari study showed the dental students had a good knowledge and attitude towards HIV patients and its treatment (Ansari et al.,2020). In addition, inadequate knowledge and unprofessional attitude towards HIV/AIDS patients were identified among this group of dental students in Saudi Arabia (Alali et al., 2022).

With an increasing number of survived HIV positive patients, who seek dental care, the knowledge of the dental care provider should maintain a high level and be assessed regularly. This study was conduct with an objective to compare between the knowledge and attitude of private and public universities' dental students regarding HIV, Riyadh, Saudi Arabia.

2. Materials and methods

2.1. Subjects

The target population for this study was undergraduate dental students and dental interns at private and public universities. Inclusion criteria for this study was to include dental students from level 5 to intern and exclusion criteria for the study was not to include students from level 1 to level 4 and general doctors or pedodontics. The cross-sectional research design was used for this study. The participations of the participants were volunteer and informed consent was obtained from each dental student. The study was approved by the Research and Innovation Center of the College of Dentistry at Riyadh Elm University.

2.2 Data collection

An online questionnaire was used to collect the data from dental students of public and private universities. Questionnaire was pre-coded and included closed ended questions. The questionnaire was based on two parts: first part includes demographic information of dental students and the second part consists of 20 closed ended questions about knowledge and attitude towards HIV/AIDS. Google forms of the survey was developed and distributed among the target random sample of dental students by social media, WhatsApp groups and by student officers.

2.3 Survey instrument

Two questionnaires were adopted to measure knowledge and attitude of dental students towards HIV/AIDS (Bakri et al., 2019; Kumar et al.,2018; Wimardhani et al., 2022). The questionnaire comprised of two parts: first past was consists of demographic information such as gender, university name, age, and academic level. Second part contains 18 questions in which 13 questions were related to HIV/AIDS knowledge and 5 questions were related to attitude towards HIV/AIDS. These questions were closed ended such as yes and no. A score of 1 was given to correct answer and 0 to wrong answer. Hence, a students' total score ranged from 0 to 18.

2.4 Statistical analysis

Data was analyzed by IBS SPSS version 21. Descriptive statistics such as frequencies and percentages were computed to describe the demographic information about dental students such as academic level, gender, university and age. Frequencies and percentages were also computed

for questions related to HIV/AIDS and attitude. Unpaired t-test was used to measure the differences between knowledge of HIV/AIDS and attitude of dental students in terms of university type (private & public) and gender (male & female). One way ANOVA was also used to examine the differences between knowledge of HIV/AIDS and attitude of dental students in terms of academic level (Level 5 to Intern).

3. Results

Questionnaire was distributed to the dental students of public and private universities. Total 512 responses were received in which 10 responses were discarded because these responses do not meet the inclusion criteria of the study. Total 502 participants were included in the study in which more than half participants were males (57.4 %) and (42.6 %) were female participants. Furthermore Table 1 shows that more than half dental students were from private university (52.2 %) and students from public universities were (47.8%). Table 1 also shows distribution of students' age, (.8 %) students' age was 19 and under, whereas (98.2 %) majority of the students' age was between 20 – 29 years, and (1.0 %) student's age was between 30 – 39 years. Moreover Table 1 shows the distribution of students by academic level, such as dental students (10.6 %) were from level 5, (10.0 %) were from level 6, (13.1 %) were from level 7, (13.5 %) were from level 8, (10.6 %) were from level 9, (12.4 %) were from level 10, (12.2 %) were from level 11, (11.4 %) were from level 12, and (6.4 %) were from intern.

Table 1 Demographic Information of Dental Students

	N	%
Gender		
Male	288	57.4 %
Female	214	42.6 %
University Type		
Private	262	52.2 %
Public	240	47.8 %
Age		
19 and Under	4	.8 %
20 -29	493	98.2 %
30 – 39	5	1.0 %

Academic Level		
Level 5	53	10.6 %
Level 6	50	10.0 %
Level 7	66	13.1 %
Level 8	68	13.5 %
Level 9	53	10.6 %
Level 10	62	12.4 %
Level 11	61	12.2 %
Level 12	57	11.4 %
Intern	32	6.4 %
Total	502	100 %

Table 2 demonstrates that most of the students (90.0 %) were aware that "HIV/AIDS can be transmitted to dental workers" and majority of the students (85.5 %) knew that "HIV/AIDS can be diagnosed with oral manifestations". Similarly most of the students (87.1 %) knew that "HIV can be transmitted through Needle injury" and (84.7 %) students aware that "The dentist must provide dental treatment for HIV-positive". It was noted that (81.7 %) and (85.3 %) of the students knew that "Hepatitis more transmissible than HIV/AIDS" and "Medical staff is more susceptible to HIV transmission", respectively. Less than half of the students (37.6 %), (35.7 %) and (33.1%) aware that "Negative HIV tests indicate that people are virus-free", "HIV can be transmitted through aerosols by hand pieces", and "The Western blot is a 1t specific test for diag1sing HIV/AIDS", respectively. Furthermore more than half of the students (63.1 %) knew that "HIV infection can be tested by ELISA" whereas less than half of the students (34.3 %) aware that "Saliva could be a vehicle for HIV transmission". More than half of the students (69.5 %) and (73.3 %) knew that "Infection control methods for Hepatitis B and HIV are same" and "Special sterilization methods are used for HIV".

Table 2 shows attitude of students towards HIV/AIDS. It was noted that approximately fifth (22.1 %) of students responded that "HIV/AIDS patients should be treated at a separate ward". More

than half of the students (66.7 %) and (76.1 %) responded that "You will perform CPR if HIV/AIDS patients need it" and "Patients with HIV/AIDS can live in the same place with others", respectively. Less than half of the students (38.6 %) response was that "You can contract HIV by sharing food" and approximately, less than fifth (16.7 %) knew that "Lichen planus is oral manifestations related to HIV/AIDS".

Table 2 Responses of dental students related to knowledge and attitude towards HIV/AIDS

Knowledge Statements	Correct response n (%)	Wrong response n (%)
HIV/AIDS can be transmitted to dental workers?	452 (90.0 %)	50 (10.0 %)
HIV/AIDS can be diag1sed with oral manifestations?	429 (85.5 %)	73 (14.5 %)
HIV can be transmitted through Needle injury?	437 (87.1 %)	65 (12.9 %)
The dentist must provide dental treatment for HIV-positive	425 (84.7 %)	77 (15.3 %)
Hepatitis more transmissible than HIV/AIDS?	410 (81.7 %)	92 (18.3 %)
Medical staff is more susceptible to HIV transmission?	428 (85.3 %)	74 (14.7 %)
Do negative HIV tests indicate that people are virus-free?	189 (37.6 %)	313 (62.4 %)
HIV can be transmitted through aerosols by hand pieces?	179 (35.7 %)	323 (64.3 %)
The Western blot is a 1t specific test for diag1sing HIV/AIDS	166 (33.1 %)	336 (66.9 %)
HIV infection can be tested by ELISA	317 (63.1 %)	185 (36.9 %)
Could saliva be a vehicle for HIV transmission?	172 (34.3 %)	330 (65.7 %)

Infection control methods for Hepatitis B and HIV are same?	349 (69.5 %)	153 (30.5 %)
Special sterilization methods are used for HIV?	368 (73.3 %)	134 (26.7 %)
Attitude statements		
HIV/AIDS patients should be treated at a separate ward?	111 (22.1 %)	391 (77.9 %)
You will perform CPR if HIV/AIDS patients need it?	335 (66.7 %)	167 (33.3 %)
Patients with HIV/AIDS can live in the same place with others?	382 (76.1 %)	120 (23.9 %)
You can contract HIV by sharing food?	194 (38.6 %)	308 (61.4 %)
Lichen planus is oral manifestations related to HIV/AIDS?	84 (16.7 %)	418 (83.3 %)

Table 3 demonstrates the results of unpaired '*t*' test and One way ANOVA. An unpaired t-test found that there was statistically significant difference in HIV knowledge of dental students in terms of university type t (500) = 2.51, p = .012. Private universities dental students' knowledge was significantly higher (M = 8.80, SD = 1.79) than public universities' dental students (M = 8.40, SD = 1.76). Furthermore there was no statistically significant difference in attitudes of dental students regarding HIV in terms of university type t (500) = -1.18, p > .05. Moreover there was no statistically significant difference in HIV knowledge of dental students in terms of gender t (500) = -.808, p > .05. Similarly there was no statistically significant difference in attitudes of dental students regarding HIV in terms of gender t (500) = -.500, p > .05. One-way ANOVA was conducted to analyze the differences between HIV knowledge and attitudes of dental students in terms of academic level (level 5, level 6, level 7, level 8, level 9, level 10, level 11, level 12, and intern). Table 3 show that there was statistically significant difference in HIV knowledge of dental students in terms of academic level F (500) = 2.99, p = .003. Whereas there was no statistically significant difference in attitudes of dental students regarding HIV in terms of academic level F (500) = .548, p > .05.

Tukey Post Hoc was applied to examine the pairwise comparisons for HIV knowledge. HIV knowledge was significantly higher among level 12 dental student than level 5 (Mean Difference = 1.21, p < .05), between level 12 than level 10 (Mean Difference = 1.10, p < .05), intern than level 5 (Mean Difference = 1.34, p < .05), and intern than level 10 (Mean Difference = 1.23, p < .05).

Table 3 Differences in knowledge and attitude towards HIV/AIDS in terms of gender, university type, and academic level

	N	Knowledge		*t* (*df*) / *F* (*df*)	*p*	Attitude		*t* (*df*) / *F* (*df*)	*p*
		Mean	SD			Mean	SD		
University									
Private	262	8.80	1.79	*t* (500)	.012*	2.15	.943	*t* (500)	.237
Public	240	8.40	1.76	= 2.51		2.26	1.05	= -1.18	
Gender									
Male	288	8.55	1.79	*t* (500)	.420	2.18	.939	*t* (500)	.617
Female	214	8.68	1.78	= -.808		2.23	1.06	= -.500	
Academic Level									
Level 5	53	8.00	1.94	*F*	.003*	2.19	1.057	*F*	.820
Level 6	50	8.60	1.54	(8,493) = 2.99		2.18	1.14	(8,493) = .548	
Level 7	66	8.53	1.73			2.11	.930		
Level 8	68	8.69	1.86			2.41	.966		
Level 9	53	8.64	1.75			2.15	1.12		
Level 10	62	8.11	1.78			2.16	.961		
Level 11	61	8.66	1.74			2.21	.897		
Level 12	57	9.21	1.55			2.25	.912		
Intern	32	9.34	1.89			2.09	1.06		

**Significant at the .05 level*

Discussion

This study was designed to measure the comparison between the knowledge and attitude of private and public universities' dental student regarding HIV/AIDS. An online questionnaire was used to collect data. Questionnaire comprised of 18 statements related to knowledge and attitude toward HIV/AIDS. Questionnaires were adopted from (Bakri et al., 2019; Kumar et al., 2018; Wimardhani et al., 2022).

Findings of the study revealed that majority of the students (70 % -

90 %) have knowledge about HIV/AIDS and gave correct answers to the KIV knowledge questions like "HIV/AIDS can be transmitted to dental workers" , "HIV/AIDS can be diagnosed with oral manifestations", "HIV can be transmitted through Needle injury", "The dentist must provide dental treatment for HIV-positive", "Hepatitis more transmissible than HIV/AIDS", "Medical staff is more susceptible to HIV transmission", and "Special sterilization methods are used for HIV". While (33 - 69 %) students' responses were correct for HIV knowledge question like "Negative HIV tests indicate that people are virus-free", "HIV can be transmitted through aerosols by hand pieces", "The Western blot is a 1t specific test for diag1sing HIV/AIDS", "HIV infection can be tested by

ELISA" "Infection control methods for Hepatitis B and HIV are same" and "Saliva could be a vehicle for HIV transmission". These results are in line with the previous studies (Al-Kadhim et al., 2019; Kumar et al., 2018).

Similarly results shows that more than half students (76 % - 66 %) responses were correct on questions regarding attitude towards HIV such as "You will perform CPR if HIV/AIDS patients need it" and "Patients with HIV/AIDS can live in the same place with others". While Less than half of the students (18 % - 39 %) response were correct for these questions "HIV/AIDS patients should be treated at a separate ward", "You can contract HIV by sharing food" and approximately, and

"Lichen planus is oral manifestations related to HIV/AIDS". Previous studies also show the same results, dental students attitude is similar to the students of Universiti Sains I slam Malaysia (USIM) and the students of Jazan University (Al-Kadhim et al., 2019; Kumar et al., 2018).

Furthermore one of the major finding of this study is that there is a significant difference in the knowledge of private and public university students. Students of private universities have higher knowledge than public university students. Whereas, there were no differences in the attitudes of private and public university students. These findings are similar to one of the previous study which was conducted on Indonesian dental students' attitudes, knowledge, preparation and willingness to treat HIV/AIDS patients (Wimardhai et al., 2022). Although this study revealed that knowledge of public university students was significantly higher than private university students.

Another finding of this study is that there was no significant difference between HIV knowledge in terms of gender. This finding was aligned with the previous studies which were conducted to examine the knowledge of students and their attitudes toward HIV (Wimardhai et al., 2022). Whereas this finding was contradictory with previous study because the study of Kumar et al. (2018) revealed that male student knowledge was significantly higher than female students. Furthermore there was no significant difference between male and female attitude towards HIV/AIDS. This finding is aligned with the previous studies as they also revealed that there was no difference in male and female attitudes towards HIV/AIDS (Kumar et al., 2018; Wimardhai et al., 2022).

Moreover there is a statistically significant difference in the knowledge of dental students in terms of academic level. Level 12 students' knowledge was higher than level 5 and level 10 students; similarly Interns' knowledge was higher than level 5 and level 10 students. This finding is similar with the previous studies such as senior students have higher knowledge than the juniors (Al-Kadhim et al., 2019; Kumar et al., 2018). While this finding is contradictory with the study of Wimardhai et al. (2022) because it does not indicate any difference in the knowledge of students in terms of academic level. Additionally, there was no difference in the attitudes of dental students in terms of academic level. This finding is aligned with the findings of the previous study such as they also indicate no difference in attitudes towards HIV/AIDS (Wimardhai et al. (2022). While this finding is contradictory with the previous studies as they indicate differences in attitudes in terms of academic level (Al-Kadhim et al., 2019; Kumar et al., 2018).

Conclusion

In general, knowledge and attitude towards HIV/AIDS of dental student was examined. It was concluded that students have good knowledge about HIV/AIDS but there attitudes towards HIV/AIDS was not good. Therefore, more efforts are required to improve the attitudes of future dentists. Their attitude can be improved by seminars, workshops, and focus group discussion with students regarding HIV/AIDS.

Recommendations

Although the results of this study demonstrated an overall improvement in knowledge among students as they progressed through their studies, the reality is that HIV/AIDS knowledge is not sufficiently comprehensive among students. This study proves the existence of stigmatizing notions and fear among dental students towards HIV. dental students need to possess sufficient knowledge of HIV/AIDS and have a non-judgmental attitude toward PLWHA so that these patients receive the optimal medical care they deserve without the influence of fear and stigma.

The results of this study show the importance and necessity of medical courses that deal with the subject of HIV/AIDS, focusing not just on furthering HIV knowledge but also on dealing with stigma, anxiety and misperceptions about HIV/AIDS and PLWHA. In addition, it is extremely

important to conduct these courses before the students start their clinical studies so that correct and sufficient knowledge and attitudes, which are required when dealing with patients, are already well embedded in the students' minds by that time.

Conflict Of Interest

The authors declare no conflict of interests

References

Alali, F. M., Tarakji, B., Alqahtani, A. S., Alqhtani, N. R., Nabhan, A. B., Alenzi, A., Alrafedah, A., Robaian, A., Noushad, M., Kujan, O., Alshehri, A., Aljulayfi, I. S., & Nassani, M. Z. (2022). Assessment of Knowledge and Attitude of Dental Students towards HIV and Its Oral Manifestations in Saudi Arabia-A Cross-Sectional Study. *Healthcare (Basel, Switzerland)*, *10*(8), 1379. https://doi.org/10.3390/healthcare10081379

Alawad, M., Alturki, A., Aldoghayyim, A., Alrobaee, A., & Alsoghair, M. (2019). Knowledge, Attitudes, and Beliefs about HIV/AIDS and People Living with HIV among Medical Students at Qassim University in Saudi Arabia. *International journal of health sciences*, *13*(5), 22–30.

Alhuraiji, A., Alaraj, A., Alghamdi, S., Alrbiaan, A. and Alrajhi, A.A. (2014). Viral hepatitis B and C in HIV-infected patients in Saudi Arabia. *Annals of Saudi medicine*, *34*(3), pp.207-210.

Alhuraiji, A., Alaraj, A., Alghamdi, S., Alrbiaan, A., & Alrajhi, A. A. (2014). Viral hepatitis B and C in HIV-infected patients in Saudi Arabia. *Annals of Saudi medicine*, *34*(3), 207–210. https://doi.org/10.5144/0256-4947.2014.207

Ansari, S.H., Alkhayyal, A.A., Alhamoud, A., Alsabhan, A., Alfayez, O., Alahmari, S. and Abuajmah, T.M., 2020. Knowledge and attitude of dental students towards the oral care of HIV/AIDS patients. *Medical Science*, *24*(106), pp.4249-4257.

Askarian, M., Hashemi, Z., Jaafari, P., & Assadian, O. (2006). Knowledge About HIV Infection and Attitude of Nursing Staff Toward Patients With AIDS in Iran. *Infection Control & Hospital Epidemiology*, *27*(1), 48-53. https://doi:10.1086/500002

alkadhim, a., jaafar, A., yousif, s., Ahmad Bakri, N., & Ameruddin, A. (2019). ASSESSMENT OF KNOWLEDGE AND ATTITUDE TOWARDS HIV PATIENTS AMONG DENTAL STUDENTS IN UNIVERSITI SAINS ISLAM MALAYSIA (USIM). *Journal Of Clinical And Health Sciences*, *4*(2), 58-65. https://doi:10.24191/jchs.v4i2.7517

Burris, S., 1996. Dental discrimination against the HIV-infected: empirical data, law and public policy. *Yale J. on Reg.*, *13*, p.1.

Greeff, M., & Phetlhu, R. (2007). The meaning and effect of HIV/AIDS stigma for people living with AIDS and nurses involved in their care in the North West Province, South Africa. *Curationis*, *30*(2), 12-23. **https://doi.org/10.4102/curationis.v30i2.1066**

Kumar, S., Tadakamadla, J., Areeshi, A.Y.B.H. and Tobaigy, H.A.W.M. (2018). Knowledge and attitudes towards HIV/AIDS among dental students of Jazan University, Kingdom Saudi Arabia. *The Saudi dental journal*, *30*(1), pp.47-52. https://doi.org/10.1016/j.sdentj.2017.10.003

Patil, P.B., Sreenivasan, V. and Goel, A., (2011). Knowledge of HIV/AIDS and attitude of dental students towards HIV/AIDS patients: A cross-sectional survey. *Journal of education and ethics in dentistry*, *1*(2), p.59. **https://doi.org/**10.4103/0974-7761.103676

Seacat, J.P. and Inglehart, M.R., (2003). Education about treating patients with HIV infections/AIDS: the student perspective. *Journal of Dental Education*, *67*(6), pp.630-640. **https://doi.org/10.1002/j.0022-0337.2003.67.6.tb03663.x**

Wimardhani, Y. S., Ossa, Y. F., Wardhany, I.I., Maharani, D. A. and Lee,

C., (2022). Indonesian Dental Students' Attitudes, Knowledge, Preparation, and Willingness to Treat HIV/AIDS Patients. *European Journal of Dentistry*. **https://doi.org/10.1055/s-0041-1740350**