



Original Research Article

Knowledge and attitude towards HIV/AIDS among college of health students at Princess Nourah Bint Abdulrahman University in Riyadh

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**Ruba Aldossary¹,
Amjad Almohammed¹,
Samar Almogbel¹,
Haya Alajlan¹,
Howeida Abusalih^{1*}**

¹Program of Epidemiology ,
College of Health and
Rehabilitation Sciences, Princess
Nourah Bint Abdelrahman
University, Saudi Arabia.

*Corresponding Author's Email:
hhabusalih@pnu.edu.sa,
hbusalih1@gmail.com

Tel. +966503534865

It is important to assess the knowledge and attitude towards HIV/AIDS, as it helps in the prevention of the disease. The objective of this study was to determine the knowledge and attitude among health students at Princess Nourah Bint Abdulrahman University. This study utilized a descriptive cross sectional multi stage cluster with sample size of 500 students. Data was collected using a structured self-administered questionnaire after approval from the institutional review board, and analyzed using the Statistical Package of Social Sciences version 25. Written informed consent was obtained from each participant. The results showed that 92.4, 92.4, and 94.6% of the study population knew the definition, the transmission by blood transfusion and sexual intercourse, respectively. The lowest reported knowledge was the transmission through saliva and tears and the latent period respectively (37.8%, 15.2%). Having a positive attitude of dealing with HIV/AIDS patients was only 11%. The highest agreement was about the willingness to take care of the infected family member (64.6%). There is a significant relationship between attitude and knowledge about vertical transmission ($p<0.05$). In conclusion, although there was a knowledge gap such as the latency period, the overall knowledge was good. In general, there was neutral attitude towards dealing with HIV patients.

Key words: Knowledge, attitude, health, college, students HIV/AIDS.

INTRODUCTION

HIV/AIDS is a global public health concern as there were more than 35 million people living with the active disease in 2017, most of the cases are in Africa which represents 25% of the total cases (WHO, 2017). Understanding students' knowledge and attitude towards HIV is important to fill the knowledge gap in order to design successful future preventive health campaigns to improve public knowledge, where health students are the future health professionals. Additionally, this type of research is in line with the 2030 Saudi vision, of having a free HIV/AIDS community by 2030 (MOH Saudi Arabia, 2008). In the Kingdom of Saudi Arabia (KSA), the first case of AIDS was

reported from King Faisal Specialist Hospital and Research Centre in Riyadh in 1984 (Alrajhi, 2004). In KSA, evidence shows that there is an under-reporting of HIV/AIDS incidence which was linked to the poor knowledge level of the Saudi population and the negative stigma towards it, even by health professionals (Munene, 2011.) Approximately 50% of HIV cases in KSA were linked to unprotected sex with an infected person, 17% were via blood transmission, 5% of them were passed from mother to child, and the rest of the infected Saudi population refused to declare how they got infected (Zaini and Anjum, 2015). Having an adequate knowledge about the risky

behaviors that can lead to HIV infection can play a role in preventing the transmission of the infection (Santos et al., 2017). Since they are the next health care providers in the healthcare system, assessing the attitude level of health students toward HIV/AIDS, can be done by measuring their attitude towards caring for HIV/AIDS patients (Dhanya et al., 2017). HIV is more common in young people due to the absence of correct health information, involvement in risky behaviors, and lack of access to generative health services (Visalli et al., 2017). Previous studies reported that having a higher knowledge about HIV is associated with having a positive attitude towards it and less stigmatization against people with HIV/AIDS (Al Otaibi et al., 2016). A study conducted in KSA, Jeddah 2017 reported that the prevalence of lacking knowledge of HIV/AIDS was approximately 42% (Abolfotouh et al., 2013). Another study among Saudi students reported a negative attitude towards HIV/AIDS home care for infected patients and even negative attitude to discuss the infection with friends (Nubed and Akoachere, 2017).

Another study showed that implementing an educational program successfully increased the knowledge of HIV and decreased stigmatization towards it (Al-Mazrou et al., 2005). One of the HIV/AIDS prevention strategies is measuring the knowledge and attitude towards it, in order to plan future community educational programs that suit the Saudi society (Abolfotouh et al., 2013).

The objective

The objective of this study was to measure the knowledge and attitude towards HIV/AIDS among health students at Princess Norah University (PNU) in Riyadh.

METHODOLOGY

A descriptive cross-sectional study was conducted at Princess Nourah Bint Abdulrahman University (PNU) Health Colleges (Health & Rehabilitation sciences, Nursing, Pharmacy, Medicine, and Dentistry) from September 2018 – May 2019. The sample size was calculated using the formula:

$$n = \frac{NP(1-P)z^2}{d^2} \left(\frac{1-a}{2} \right) / d^2 (N-1) + p(1-p)z^2 \left(\frac{1-a}{2} \right) \times df$$

Where N is the total population of health sciences college (N)= 2455, p is the assumed highest attained knowledge and attitude taken as 0.5 which gives the maximum sample size, d is the desired margin of error 0.05, z= 95% confidence level when taken as 1.96, df= design effect = 1.5 equivalent to 500 students. The sample was distributed between colleges according to probability proportional to size. The ultimate sampling was chosen by multistage clusters techniques. The research team collected the data using a structured self-administered questionnaire that consists of 33 questions, 7 of them were on demographic data, 17 questions measured the dependent variable which was the knowledge level, we used a true, false, or do not know scale, and were marked as correct or incorrect. "Do

not know" responses or not responding to an item were marked as "incorrect". For attitude, 9 questions were to determine the attitudes toward HIV/AIDS using a 3-point Likert scale of disagree, neutral and agree. Attitude statements were coded in the following manner: agree = 3, neutral =2 and disagree = 0. The scores of attitudes were categorized into 'negative', 'neutral' and 'positive' based on the number of attitude questions multiplied by the number of choices 9*3, the minimum score was 9, the maximum was 27, and the range was equal to 6. The cut off point for positive attitude was a score of 18 and above, the neutral attitude score was between 12-18 and the negative attitude was a score less than 12. The total attitude section score ranged from 14 to 56. The questionnaire was validated by an expert committee at Princess Nourah Bint Abdulrahman University. It has acceptable internal consistency (Cronbach's alpha = 0.75), test-retest reliability (r = 0.87, p < 0.01). Data were analyzed using the computer software statistical package of social sciences (SPSS version 25). Descriptive statistics were used to describe the study population in the form of frequency tables. Inferential statistics (chi-square) was used to find the relationship between the knowledge and the attitude, in addition, to find the relationship between sociodemographic factors and the knowledge level. The cutoff point for the significance was set as 0.05. The data was collected after IRB approval at PNU. Written informed consent was obtained from each participant before answering the questionnaire. The objectives of the study were explained to them and we ensured that the participation was voluntary and they had the right to withdraw at any time. Confidentiality and privacy were assured.

RESULTS

Table 1 shows the distribution of sociodemographic characteristics. Fifty eight percent of respondents were aged 20-21 years which represents slightly more than half of the participants. The least frequent age was 24-25 years which represents a very small percent. Most of the respondents were from the College of Health and Rehabilitation Sciences which represent 28%. Table 2 shows the distribution of general knowledge of HIV/AIDS. Most of the study population knew the definition of HIV (92.4%) and the lowest percentage of the reported knowledge was the latent period of HIV development of AIDS where only (15.2%) identified the correct answer. Regarding HIV/AIDS transmission, the majority of respondents had knowledge that HIV is sexually transmitted which represents 94.6%, followed by knowledge about transmission by blood transfusion (92.4%), the lowest percentage of the reported knowledge was in the transmission through saliva and tears, where only (37.8%) knew the correct answer. Table 3 demonstrates that the most common source of information about HIV/AIDS was received from TV and family friends or neighbors(38.8% and 38.4%, respectively), and the least

Table .1 Sociodemographic characteristics of the participants

Variable	Description	Frequency	Percent
Age	18-19	44	8.8%
	20-21	290	58%
	22-23	152	30.4%
	24-25	14	2.8%
College	Nursing	122	24.4%
	Pharmacy	120	24%
	Health and Rehabilitation sciences	140	28%
	Dentistry	40	8%
	Medicine	78	15.6%
Total		500	

Table 2. Knowledge of HIV/AIDS definition treatment and transmission (percentage of correct responses)

Item	Percentage with correct answer (frequency)	Percentage with wrong answer
Knowledge about Definition of HIV	92.4 % (462)	7.6% (38)
Knowledge about infectivity.	66.4% (32)	33.6% (168)
Knowledge about Latent period	15.2% (76)	84.8% (424)
Knowledge about progression of infection to severe disease	50.8% (254)	49.2% (246)
Knowledge about symptoms of HIV/AIDS	57.8 % (289)	42.2% (211)
Knowledge about treatment	65.6% (328)	34.4% (172)
Knowledge about transmission by saliva	37.8% (189)	62.2% (311)
Knowledge about transmission by blood transfusion.	92.4% (462)	7.6% (38)
Knowledge about transmission from infected mother to her unborn baby.	65.8% (329)	34.2% (171)
Knowledge about transmission by sexual interaction	94.6% (473)	5.4% (27)

Table 3. Source of getting information about HIV/AIDS

Item	Frequency	Percent
Television	194	38.8%
Family, Friends, and colleagues	192	38.4%
Health worker	165	33%
Teachers	144	28.8%
brochures ,Posters and printed materials	107	21.4%
Newspaper and magazine	72	14.4%
Radio	24	4.8%
Religious leader	11	2.1%
Other sources	14	2.8%

frequent source of information was from religious leaders. Table 4 shows that positive attitude was found in almost half of the study population. The negative attitude was in two fifths, whereas neutral was only 10%. Table 5 demonstrates the attitude elements toward HIV/AIDS. The highest agreement was among health students about the willingness to take care of a member of the family who was infected with HIV/AIDS (64.6%). Followed by lack of religious and moral commitment can spread AIDS infection (57.6%). The least reported negative attitude is that students with HIV/AIDS should go to special schools (21.6%).

Table 6 demonstrates the relationship between attitude toward dealing with HIV/AIDS patients and having knowledge about the transmission of HIV/AIDS through

sexual contact. A total of 48.8% answered that HIV/AIDS can be transmitted through sexual contact and have neutral attitude. It was found that there was no significant relationship ($p > 0.05$).

Table 7 demonstrates the relationship between attitude toward dealing with HIV/AIDS patients and having knowledge about the vertical transmissions of HIV/AIDS. It was found that there was a significant relationship ($p < 0.05$). (2.1%).

DISCUSSION

The purpose of this study was to examine the knowledge and attitude toward dealing with HIV/AIDS patients among

Table 4. Attitudes toward HIV/AIDS patients

Items	Frequency	Percentage
Positive attitude	45	11%
Neutral Attitude	243	48.6%
Negative attitude	203	40.4%

Table 5. Attitude toward HIV/AIDS among study participants

Items	Yes (Agree)
Lack of religious and moral commitment can spread AIDS infection.	57.6% (288)
Willingness to sit next to someone who is infected with HIV/AIDS.	53.6% (268)
Students with HIV/AIDS should go to special schools for those with HIV/AIDS	21.6% (108)
Keeping it a secret, if a member of your family got infected with HIV/AIDS.	53.6%(268)
Willingness to take care of a member of your family who is infected with HIV/AIDS in your own household.	64.6% (323)

Table 6. The relationship between attitude toward dealing with HIV/AIDS patients and having knowledge about the transmissions of HIV/AIDS through sexual contact**(N=500)**

Answer	Negative attitude	Neutral attitude	Positive attitude	Total(N=500)
Yes	40% (189)	48.8% (231)	11.2% (53)	100% (473)
No	66.7% (10)	26.7% (4)	6.7% (1)	100% (15)
I don't know	25% (3)	66.7% (8)	8.3% (1)	100% (12)
% Total	40.4%	48.6%	11%	100% (500)

Chi-square = 5.937

P-value = 0.208

Table 7. The relationship between attitude toward dealing with HIV/AIDS patients and having knowledge regarding the transmissions of HIV/AIDS from mother to child (vertical transmission). (N=500)

Answer	% Negative attitude (Frequency)	% Neutral attitude (Frequency)	% Positive attitude (Frequency)	Total (N=500)
Yes	43.8% (144)	47.7% (157)	8.5% (28)	100% (329)
No	45.1% (32)	43.7% (31)	11.3% (8)	100% (71)
I don't know	26% (26)	55% (55)	19% (19)	100% (100)
% Total	40.4%	48.6%	11%	100% (500)

Chi-square = 15.368

P-value = 0.004

health students of PNU. This study showed a high level of general knowledge of HIV/AIDS except for the latent period of HIV development into AIDS (15.2%). This is in contrast to a study conducted in Britain among medical students, where it was reported that less than half of the students had good knowledge regarding the latent period (Evans et al., 1993). This can be explained by the fact that the range of latent period is specific. Unexpectedly, the study is fair regarding the symptoms of HIV, where 57% similar to the United Kingdom among the university students, found that less than half (44%) of their participants agreed that rash is an early sign of HIV (Grin et al., 2013). The disease might not be included in the curriculum, in fact majority of the students in the current study answered that the main source of getting information regarding HIV/AIDS was through TV (20.8%). Most of the students had good

knowledge that HIV is transmitted sexually and through blood transfusion (94.6%, 92.4%).

Similarly, a study conducted among Chinese students reported that majority of the students had high knowledge regarding the route of transmission through sex and blood (98.8%, 96.5%)(Tan et al., 2007). This was expected, since HIV/AIDS is known as a sexually transmitted disease (STD). Only more than one-third of the students answered that HIV is not transmitted through contact with saliva, tears, urine or sweat (37.8%). However, in a study conducted among pharmacy students in Malaysia, they scored a higher level (68.5%) that saliva and urine cannot transmit the infection(Ahmed et al., 2009). This is explained in the current study that students are confused about the detection of HIV in bodily fluids such as saliva, tears, urine and sweat and the transmitted body fluids such as

semen, blood, vaginal and rectal secretions.

Most students had a negative attitude towards dealing with HIV/AIDS patients (73.8%), and a study conducted in India showed that only slightly more than one tenth of the participants had negative attitude (11%) (Rani et al., 2017). This could be explained by the fact that students feel not being prepared yet to deal with HIV patients, and they fear the occupational exposure to HIV infection in the future. More than half of the students agreed that they will keep it a secret, if one of their family members got infected with HIV (53.6%). A similar study conducted in Vietnam showed similar results to the current study (44% will keep it as a secret). This can be because the fear of stigma is associated with HIV/AIDS (Hoang et al., 2019). Almost two third of students agreed that lack of religious and moral commitment could spread AIDS infection (57.6%). A similar result has been reported in a study in Iran where around two third (63.6%) of participants associated lack of religion and morals with HIV (Santos et al., 2011). Only less than a quarter of students agreed that HIV patients should go to private schools (21.6%). A similar result was found in a study among dental students in Kuwait (25.5%) (Ellepola et al., 2011). This may be explained by the fact that the current participants' knowledge of the mode of transmission through air, and handshake was high and this can influence their attitude towards having HIV patients in public schools.

Among the health students in different colleges, medical college students scored significantly the most frequent correct answers, regarding the latent period of the development of HIV (32.9%), where the least frequent correct answer was among Dentistry students (6.6%) (P-value = 0.000, Chi-Square = 45.243). In another study conducted among medical students, participants had very high knowledge about HIV (Biradar et al., 2015). This was expected since medical students study more detailed information about the pathophysiology of diseases where dental students are more focused on practical procedures.

Dentistry college students scored the most frequent negative attitude toward dealing with HIV patients (57.5%) and the least positive attitude (5%). A study among Chinese dental students showed that most of the students had a negative attitude toward HIV (93.68%)(24). This can be explained by the fact that dental students are more enrolled with patient body fluids contact, especially from the beginning of their study years, where they do not feel fairly prepared to deal with it.

Conclusion

The overall knowledge was good, although there was knowledge gap in some aspects such as the latency period and the symptoms of the infection. In general, there was neutral attitude towards dealing with HIV patients, with significantly different attitude between health colleges among PNU. A significant relationship was found between attitude and knowledge of the transmission.

Recommendations

Further studies must be conducted involving students in other universities. Also, there is a need to enhance an environment that is helpful to the development of an appropriate student attitude towards HIV. Moreover, HIV/AIDS education within the faculty for health students and professionals should emphasize methods for the prevention of infection among health workers and include teaching strategies designed to deal with discrimination towards HIV/AIDS patients. In addition to that, the ministry of health should expand health messages about HIV/AIDS to raise awareness and reduce the negative attitude in the population.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of this manuscript.

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