

Knowledge, Attitudes and Risk Perceptions towards Human Immunodeficiency Virus and Acquired Immunodeficiency Syndrome (HIV/AIDS) Among Health Sciences Students in a Public University, Malaysia

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Abstract

Objectives: A cross-sectional study was conducted to investigate the level of knowledge, attitudes, and risk perceptions regarding human immunodeficiency virus (HIV) and acquired immunity deficiency syndrome (AIDS) among final year health sciences students in the International Islamic University Malaysia (IIUM), Kuantan, Malaysia.

Methods: Students admitted in the schools of medicine, pharmacy, nursing, dentistry and allied health sciences at IIUM, Kuantan campus were targeted. Online questionnaire was completed by 236 of final students who volunteered to be a part of this study. Data were collected and analysed by using the Statistical Package for Social software (SPSS).

Results: The vast majority of respondents were females (n=165, 70%). About 41.1% of participants were pharmacy students followed by medicine (n= 61, 25.8%), allied health sciences (n=40, 16.9%), nursing (n=20, 8.5%) and dentistry (n=18, 7.6%).

Conclusion: The present study results showed moderate awareness about HIV/AIDS treatment, methods of HIV transmission, and educational knowledge of HIV/AIDS among students. The curriculum offered in different health professions should incorporate correct information about HIV/AIDS, thereby minimizing fear, misconceptions, and negatives attitudes that practising professionals hold about HIV/AIDS patients.

Key words: Health science, Students, HIV/AIDS, Knowledge, Attitude, Understanding, Malaysia.

INTRODUCTION

According to World Health Organization (WHO), Human Immunodeficiency Virus (HIV) can be defined as a virus that infects cells of the immune system, destroying or impairing their function upon which the condition is termed as acquired immunodeficiency syndrome (AIDS) [1]. Both HIV and AIDS are among the greatest public health challenges around the globe. Major causes of this infection include unprotected sexual contact, injection

drug use, contaminated blood transfusion, mother-to-child transmission (prenatal or through breastfeeding) and occupational exposure among health care providers.^[1] It has been reported by Syed et al (2009), that the first 3 cases of HIV in Malaysia were diagnosed in 1986, and the rise in HIV/AIDS has since continued unabated. The number of deaths due to AIDS have risen from 14 in 1990 to 7,195 in December 2004.^[2] This shows that the pandemic of HIV/AIDS continues amidst lack of therapeutic choices that can cure or prevent further disease progression and its complications. Lack of preventive strategies and failure to use highly effective tools to slow the spread of HIV are



among the other reasons for steady growth of HIV infection. The life-threatening nature of HIV/AIDS often results in negative attitudes and stigma among the public and health care providers toward patients living with HIV/AIDS.^[3] In other words, there is a barrier between the public and the health care providers whereby access to care is concerned. As the number of HIV/AIDS patients continues to rise, these infected patients will need healthcare. It is crucial that the students enrolled in different health profession schools who will practice in the future, be knowledgeable about HIV/AIDS in order to provide quality care to the infected patients and general public. This study assessed the level of knowledge, attitudes, and risk perceptions about human immunodeficiency virus (HIV) and acquired immunity deficiency syndrome (AIDS) among final year students enrolled in different health profession schools at the International Islamic University Malaysia (IIUM), Kuantan campus.

Methodology:

A prospective, cross-sectional study was conducted among health professions students in (IIUM). These students are enrolled in 5 different schools which are medicine, dentistry, pharmacy, allied health sciences, and nursing. A sample size of 236 participants was calculated from Raosoft calculator.^[4] Students were selected from health professions since their level of education and exposure about the HIV/AIDS pharmacotherapy is higher than other non health professions students at IIUM. Convenience sampling was used to approach the participants. A self-administered questionnaire was used to collect data from the participants. The questionnaire was designed after a thorough literature review, which was then subjected to content and face validity. The reliability of the questionnaire was measured by calculating Cronbach’s alpha (0.72). The final version of the questionnaire was composed of 27 questions, divided into 4 sections including demographic information, students’ knowledge, attitude and perception about HIV/AIDS. All the final year health professions students are invited to participate in the study. Both paper and electronic version of the questionnaire were made available to study participants.

Data were collected and analysed using the Statistical Package for Social Software (SPSS). A dichotomous scale was used to collect data about participant HIV/AIDS knowledge. Descriptive and inferential statistics were run. The chi-square test was considered significant at $p < 0.05$. Attitudes and risk perceptions regarding HIV/AIDS were measured using a Likert scale. The study protocol was approved by the Department of Pharmacy Practice, Kulliyah of Pharmacy, IIUM, Malaysia. Anonymity and

confidentiality were ensured throughout the research process.

RESULTS

A sample of final year healthcare students of IIUM, Kuantan campus comprised of 236 students out of 491 of the final year study population (48.06%) responded to the survey. 61 students from medicine (25.8%), 18 students from dentistry (7.6%), 97 students from pharmacy (41.1%), 40 students from allied health sciences (16.9%) and 20 students from nursing (8.5%) participated in this study. Majority of students were female ($n=165, 69.9%$), Malay, ($n= 231, 97.9%$) and aged between 19-25 years (mean= 22 ± 3 years) respectively (Table 1).

A significant number of students from all disciplines agreed that AIDS is a manifestation of HIV ($p=0.001$). Compared to other disciplines, the knowledge of transmission of HIV/AIDS by mosquito bite ($p=0.0001$) was significantly higher in students studying medicine or transmission of HIV/AIDS by sharing bathroom was significantly higher in students studying dentistry ($p=0.003$) respectively. A majority of pharmacy students ($p=0.001$) agreed that male circumcision can decrease HIV transmission. Compared to other disciplines, a significant amount of nursing students agreed that HIV/AIDS is not curable ($p=0.024$). Dentistry and allied health sciences students had significantly less knowledge compared to students from other schools about the availability of an effective drug to cure HIV ($p=0.014$). Dentistry, pharmacy and nursing students had more knowledge compared to allied health sciences and medicine

Table 1: Sociodemographic data of the students

Variable	Frequency (%)
Faculty	
Medicine	61 (25.8%)
Dentistry	18 (7.6%)
Pharmacy	97 (41.1%)
ALLHS	40 (16.9%)
Nursing	20 (8.5%)
Age	
< 18	1 (0.4%)
19- 25	220 (93.2%)
26- 30	15 (6.4%)
> 30	0 (0%)
Mean \pm SD	22 \pm 3
Gender	
Male	71 (30.1%)
Female	165 (69.9%)
Race	
Malay	231 (97.9%)
Chinese	1 (0.4%)
Indian	1 (0.4%)
Other	3 (1.3%)

Table 2: IIUM Student's Knowledge about HIV/AIDS

Survey Question/Statement	Yes (%)	No (%)	*p value (actual score), Faculty
Have you ever heard about HIV and AIDS?	235 (99.6)	1 (0.4)	0.578
Is it true that AIDS is manifestation of HIV?	220 (93.2)	16 (16.8)	0.001
Is it HIV/AIDS is a curable disease?	22 (9.3)	214 (90.7)	0.024
Is it true that a virus is the cause of HIV/AIDS?	233 (98.7)	3 (1.3)	0.692
Can AIDS cause death?	229 (97.0)	7 (3.0)	0.193
Currently there is no effective drug that can cure HIV/AIDS.	203 (86.0)	33 (14.0)	0.014
Can a healthy looking person can be positive for HIV/AIDS?	219 (92.8)	17 (7.2)	0.052
Can HIV be transmitted by sharing bathrooms?	18 (7.6)	218 (92.4)	0.003
Can HIV be transmitted by mosquito bites?	61 (25.8)	175 (74.2)	0.0001
Can HIV/AIDS be transmitted through air?	8 (3.4)	228 (96.6)	0.505
Can HIV/AIDS be transmitted from sharing needles?	234 (99.2)	2 (0.8)	0.885
Can HIV/AIDS spread through social contact such as shaking hands?	7 (3.0)	229 (97.0)	0.355
Can HIV/AIDS be transmitted from an infected mother to her child during pregnancy?	227 (96.2)	9 (3.8)	0.012
Can HIV/AIDS spread upon receiving blood from a blood bank?	234 (99.2)	2 (0.8)	0.216
Can HIV transferred from one individual to another individual during sexual intercourse?	235 (99.6)	1 (0.4)	0.578
Unprotected sex can increase the possibility of a HIV/AIDS infection.	234 (99.2)	2 (0.8)	0.058
Can condoms protect a person from getting infected with HIV/AIDS?	133 (56.4)	103 (43.6)	0.357
Can antiviral drugs such as amantadine and acyclovir be used to treat HIV/AIDS?	122 (51.7)	114 (48.3)	0.021
Is it true that male circumcision can decrease HIV transmission?	125 (53.0)	111 (47.0)	0.001
Having safe sex can reduce the probability of getting infected with HIV/AIDS.	216 (91.5)	20 (8.5)	0.033
AIDS virus increases probability of acquiring other infections	215 (91.9)	21(8.9)	0.000

*Parenthesis under chi square test results contains percent correct answer.

students that pregnant mothers can transmit HIV virus to their foetus (p=0.012). In contrast, pharmacy students were more knowledgeable compared to other disciplines that an antiviral cannot cure HIV/AIDS (p=0.021) The students enrolled in allied health sciences were more likely to know that having safe sex reduced the likelihood to acquire HIV/AIDS (p=0.033). A majority of the respondents from all disciplines strongly agreed (p=0.000) that AIDS virus increases the probability of acquiring other infections (Table 2).

Medicine and dentistry students had a positive attitude about their curriculum providing them with necessary education/information to work safely with HIV/AIDS patients compared to students from other disciplines (p=0.001). Compared to students from pharmacy, dentistry and allied health sciences, medicine and nursing students had a negative attitude about refusing treatment to HIV/AIDS patients on the grounds of protecting themselves and

their families from those HIV/AIDS patients (p=0.011) (Table 3).

A significant number of students enrolled in allied health sciences were of the perception that patients suspected of being infected with HIV/AIDS should be quarantined (p=0.001). Compared to nursing and allied health sciences students, a majority of the students enrolled in medicine, dentistry and pharmacy disagreed that separate schools and education facilities should be provided to HIV infected children(p=0.001). However, compared to other disciplines, students enrolled in pharmacy and medicine were more worried about acquiring HIV at their working place in later stage of their lives(p=0.001). A majority of students from dentistry, allied health sciences and nursing strongly agreed that all healthcare personnel and students enrolled in healthcare programs should go for mandatory HIV testing (p=0.008). Students enrolled in nursing compared to other disciplines, were of the opinion that patients with

Table 3: IIUM Student’s Attitudes about HIV/AIDS

Statement	Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)	*P Value
My curriculum has provided me with necessary education/information to work safely with HIV/AIDS patients	70 (29.7)	103 (43.6)	46 (19.5)	12 (5.1)	5 (2.1)	0.001
I am willing to assist/take care of HIV/AIDS patients in wards and operation theatres	45 (19.1)	99 (41.9)	77 (32.6)	8 (3.4)	7 (3.0)	0.111
I feel that I am competent enough to provide treatment, care and counselling for HIV/AIDS patients	18 (7.6)	43 (18.2)	116 (49.2)	45 (19.1)	14 (5.9)	0.213
I am concerned about being stigmatized by my family and friends because I have to provide care for patients with HIV/AIDS	21 (8.9)	51 (21.6)	89 (37.7)	89 (37.7)	32 (13.6)	0.279
I do not mind sharing equipment or facilities with people infected with HIV/AIDS	11 (4.7)	36 (15.3)	100 (42.4)	56 (23.7)	33 (14.0)	0.846
I would prefer not to take care of HIV/AIDS	10 (4.2)	22 (9.3)	95 (40.3)	74 (31.4)	35 (14.8)	0.410
I may try to avoid caring for HIV/AIDS patients	10 (4.2)	30 (12.7)	96 (40.7)	73 (30.9)	27 (11.4)	0.764
I fear becoming infected with HIV/AIDS if I have to care for an HIV patients	28 (11.9)	68 (28.8)	76 (32.2)	45 (19.1)	19 (8.1)	0.061
I would refuse to treat a patient infected with HIV/AIDS to protect myself and my family.	14 (5.9)	23 (9.7)	84 (35.6)	81 (34.3)	34 (14.4)	0.011

*Parenthesis under chi square test results contains percent correct answer

Table 4: IIUM Students’ Risk Perceptions about HIV/AIDS

Health sciences Based Students’ Risk Perceptions about HIV/AIDS	SA (%)	Agree (%)	Neutral (%)	Disagree (%)	SA (%)	*P value
Patients who are suspected of being infected with HIV/ AIDS should be quarantined.	25 (10.6)	37 (15.7)	62 (26.3)	87 (36.9)	25 (10.6)	0.001
Separate schools and educational facilities should be provided for HIV/AIDS infected children.	18 (7.6)	35 (14.8)	51 (21.6)	93 (39.4)	39 (16.5)	0.001
I am worry about acquiring HIV at my working place in the later stage of my life	26 (11)	66 (28)	86 (36.4)	42 (17.8)	16 (6.8)	0.001
Initial HIV test should be conducted for all patients admitted for surgical procedures.	101 (42.8)	91 (38.6)	28 (11.9)	10 (4.2)	6 (2.5)	0.281
In my opinion, all healthcare personnel and students enrolled in healthcare programs should go for mandatory HIV testing.	82 (34.7)	83 (35.2)	49 (20.8)	19 (8.1)	3 (1.3)	0.008
There is no harm in meeting a person with HIV/AIDS	109 (46.2)	97 (41.1)	18 (7.6)	6 (2.5)	6 (2.5)	0.030
Patients with HIV/AIDS should be nursed separately.	42 (17.8)	87 (36.9)	67 (28.4)	28 (11.9)	12 (5.1)	0.001
I feel that people infected with HIV/AIDS should have separate washing and toilet facilities.	30 (12.7)	55 (23.3)	88 (37.3)	45 (19.1)	18 (7.6)	0.014

*Parenthesis under Chi square test results contains percent correct answers

HIV/AIDS should not be nursed separately (p=0.001). Allied health sciences students were more likely to believe that people infected with HIV/AIDS should have separate washing and toilet facilities compared to other disciplines(p=0.014) (Table 4).

DISCUSSION

This study assessed the knowledge, attitudes and risk perceptions of students enrolled in medicine, dentistry, nursing, pharmacy and allied health sciences about HIV/AIDS. The results indicate that the students demonstrated

an inadequate level of knowledge about HIV/AIDS. One of the reasons might be the lack of courses based on sexual transmitted diseases and infectious diseases in the curriculum.

75% percent of the participants had accurate knowledge about mosquito bites not leading to the transmission of disease to other people. A previous study conducted among community dwellers in Malaysia showed that about 40% study population had a misconception about HIV being transmitted through mosquito bites.^[5] However, mosquito bites cannot transmit HIV since the virus is unable to survive and replicate within the mosquito's gut and it lacks special cells for multiplication that are found only in humans.^[6] Differences in the results obtained in both the studies might be due to the scientific background of the study participants in our study. A significant number of participants in this study also had knew about the spread of HIV/AIDS by sharing bathroom with the infected person as well as AIDS being a manifestations of HIV. Another study assessing knowledge and attitude of nursing students about HIV/AIDS also found that the nursing students knew that HIV cannot be transmitted through sharing toilets, or bed with someone who is infected as well as HIV leading to AIDS.^[7] In conclusion both the studies prove that most respondents demonstrated good knowledge about the transmission and manifestation of HIV. Knowledge about transmission of HIV/AIDS from a mother to her child during pregnancy or through unprotected sex was high in our study, also seen in the study conducted by Syed *et.al* (2009) that assessed knowledge about HIV/AIDS in final year pharmacy students at University Sains Malaysia.^[2]

Study participants knew about the unavailability of medications that can cure HIV/AIDS. Currently the medications available for treating HIV/AIDS are effective in fighting HIV and its complications, but cannot cure it. The treatments are designed to reduce the severity of the infection, keep the immune system as healthy as possible and decreasing the complications that may develop.^[8] However, half of our study population were unaware that antivirals cannot be used to treat HIV/AIDS patients. This shows that increased focus on HIV/AIDS pharmacotherapy in the curriculum of students in different schools is warranted.^[2] The study conducted by Syed *et.al* (2009) also showed that approximately 60% of the students were unaware about anti-virals such as acyclovir, ribavirine and amantadine cannot be used to treat HIV since it is a retrovirus.^[2] The U.S. FDA recommends that the therapy for HIV/AIDS should include Nucleoside Reverse Transcriptase Inhibitor (Zidovudine & Didanosine), Non-nucleoside Analogue (Nevirapine & Delavirdine) and

Protease Inhibitor (Saquinavir Ritonavir).^[9]

Attitudes of health care students towards providing care to HIV/AIDS patients in our study were poor. Despite the student's beliefs that their curriculum provided them enough with enough education or information to work safely with AIDS patients, they felt that they would refuse to provide care to HIV/AIDS patients in order to protect themselves and their family members. Previous studies conducted in India and Nigeria among nursing students assessing their knowledge and attitude about HIV/AIDS patients have shown similar results.^[7,10-12] The discriminatory behaviour of healthcare professionals towards people living HIV is unethical and can lead to missed opportunities of early disease prevention, diagnosis and treatment by turning away the needy patients.^[13,14]

More than half the study population did not want HIV/AIDS patients to be quarantined or have separate schooling for infected children. This indicates the unwillingness among the students to discriminate or stigmatize against HIV/AIDS patients.^[2] Students from each school in this study were concerned about becoming infected at their workplace through occupational practice. This might be especially true in case of health professionals from medicine since they have more clinical interaction with the infected patients compared to other health professionals. The study participants also agreed that there was no harm in meeting HIV-infected patients, the infected patients should be nursed separately and there should be separate washing and toilet facilities for the infected patients. This finding is a further affirmation to the previous finding which states that study participants had good knowledge about disease transmission.

CONCLUSION

This study found that students in different healthcare professions have inadequate knowledge about transmission and treatment of HIV/AIDS and poor attitude about assisting patients with HIV/AIDS. Including HIV/AIDS related education in the curriculum for healthcare students can increase their awareness about HIV/AIDS and foster a positive attitude towards HIV/AIDS prevention. Public education and health promotion campaigns can dispel misconceptions about HIV/AIDS and thereby reduce phobias held by healthcare professionals as well as the general public, about HIV/AIDS patients.

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