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An Assessment of the Level of Awareness, Attitudes, Opinions of Pharmacy Students Concerning HIV and AIDS in Malaysia

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Authors' contributions

Authors RKV and SIA conceptualized, designed and led all aspects of the study, analyses, and critically revising the manuscript. Author SBB participated directly and actively in all of these aspects of the study including data collection and manuscript drafting. Author AB was actively involved in analysis and interpretation of data. All authors have approved this manuscript.

Original Research Article

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ABSTRACT

Aims: HIV and AIDS spreading wide and causing serious threats and deaths among Malaysian residents. A nationwide cross-sectional survey was conducted to assess the awareness, attitudes and opinions about HIV and AIDS among pharmacy students.
Methods: A total of 316 pharmacy students of year three and onwards took part in the survey. Students were asked to fill in questionnaires with consent forms. The results were analyzed by using SPSS version 17.
Results: The data indicated that awareness about HIV and AIDS was moderate. High level of awareness was seen for major routes of HIV transmissions, but lower level of awareness was seen for other modes of transmission like circumcision, visiting barbers, and blood splashes on outer body surface. Only 19.3% and 13.3% of respondents were aware about HIV prevention by sex abstinence and by staying faithful to one partner respectively. The respondents had doubts in keeping HIV and AIDS patients in close vicinity to them and their family.

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Conclusion: According to the findings, the respondents had a few misconceptions about HIV transmission and prevention. Data from this survey may be useful to hold programs and campaigns designed to convey accurate information about HIV transmission and prevention. Talks and media campaigns should also be carried out to change their attitudes and opinions about HIV and AIDS.

Keywords: HIV and AIDS; awareness; attitudes; opinions; pharmacy students.

1. INTRODUCTION

The first HIV case in Malaysia was detected in 1986. In 2010, which is about 20 years after that, World Health Organization classified Malaysia as a country with high rate of HIV and AIDS cases. An average of 10 cases daily was reported with a total of 3652 cases in 2010.The main cause of the HIV epidemic in Malaysia is sexual intercourse and sharing of the tools used for injecting drugs. As for age factor, 2.24% of the cases in 2010 was taken up by children. These children has been discriminated which lead to illiteracy, homelessness and exploitation. Adolescents are the significant group that is prone to HIV infections[1].HIV can be transmitted by many routes mainly sexual intercourse, injecting drugs, mother-child transmission, and blood transfusion. In Malaysia, more cases were detected among the younger generation. Ministry of health has indicated that for people aged 13 to 29 years old, the percentage of infection is 36%. HIV prevention is recommended and some ways against HIV are loyalty to partners, choosing correct partners, HIV tests and the use of condoms [2]. As for United States alone, half of the infections are detected among people less than 25 years of age. The majorities of the infections are via sexual route [3]. According to some demographic health surveys of many countries, it was found that adolescents hits puberty at much younger age and are being involved in early unsafe and unplanned sexual intercourses. This has exposed them to sexually transmitted disease (STD) HIV [4]. Girls are more prone to HIV and AIDS compared to males [5]. Women have a higher risk of HIV infection because of their higher biological susceptibility.

Heath care professionals including doctors, nurses, pharmacists, and laboratory workers play a vital role in AIDS preventative programs and the management of diagnosed patients [6]. However, it has been suggested that health care workers are deficient in appropriately managing and counseling HIV and AIDS patients and lack sufficient knowledge of symptoms, diagnosis and treatment of HIV [7]. Pharmacist usually has less exposure to HIV patients and thus has lower occupational risk of contracting HIV and AIDS. However, pharmacy students must have knowledge about treatment and prevention of HIV and AIDS. Much research from around the world have shown gaps in students' knowledge about HIV and AIDS [8]. Many interventions in educational and practical programs for prevention and treatment of HIV has been done in different parts of the world and have shown positive outcomes. However, for Malaysian pharmacist, the low level of knowledge and negative attitudes can be a barrier to this success. We must ask the pharmacy students if they are willing to treat HIV patients in future and what their risk perceptions is for HIV and AIDS [8].

2. METHODS

The main objective of the survey was to assess the level of awareness, attitudes, and opinions concerning HIV and AIDS among pharmacy students. The data collection was done between the months of August and September 2012.

2.1 Study Design

The design used to carry out the survey is cross-sectional survey. The respondents were asked to fill up a structured questionnaire. The questionnaire was self- prepared and self-administered.

2.2 Sample Selection

The studies were conducted in Kuala Lumpur and Pahang State. The universities from which the subjects were collected was chosen based on the availability of year three to year four pharmacy students.

2.3 Ethical Considerations

The study was conducted after approval from International Medical University Research and Ethics committee. The participants were informed about the purpose of the study and were asked to fill in informed consent forms to make sure the participants are participating voluntarily.

2.4 Questionnaires

Test-retest reliability (kappa statistics k=0.89) and intra-observer reliability (Cronbach's alpha = 0.76). The questionnaires were developed based on literature reviews and consultation from experts. The questionnaires were self-prepared and self-validated. Validation of the questionnaires was done by conducting a pilot study on students for feedback and to check the reliability of the questionnaire. The questionnaires were made available in English language. The questionnaire consisted of three sections. The three sections were awareness, attitude and opinions. In section A, awareness was assessed based on correct or incorrect answer. Section B&C for attitudes and opinions was assessed using Likert scale where the scale ranges from strongly agree to strongly disagree.

2.5 Data Analysis

Data analysis was done using Statistical Package of Social Science version 17. Descriptive statistics including means, medians, standard deviations and frequencies were performed. The level of statistical significance was set at $P< .05$.

3. RESULTS

3.1 Socio-demographic Characteristics of the Students

Table 1 shows percentages of sex and races of students. Out of 316 subjects, 72 were male while 244 were female making a percentage of 22.8% for males and 77.2% for females. The percentage shows that higher number of females took part in the survey. As for race of the subjects, the percentage for Indians was 3.8%, 55.4% for Malays, 38.9% for Chinese and 1.9% for other races. This shows that the majority of the subjects were Chinese and Malays.

Table 1. Socio-demographic Characteristics of the Students (N = 316)

Sex	No. of respondents	Percentage (%)
Male	72	22.8
Female	244	77.2
Race	No. of Respondents	Percentage (%)
Indian	12	3.8
Malay	175	55.4
Chinese	123	38.9
Others	6	1.9

3.2 Awareness on Transmission of HIV and AIDS

The survey found that 8.5% of respondents (n=27) has the misconception that HIV can be transferred through sneezes and coughs. 88.3% of respondents (n=279) understands that there is a risk of HIV transmission when having tattoo or body piercing. Surprisingly, more than half the respondents (n=169) thinks that there is no risk of HIV transmission when visiting a barber. 76.6% of respondents (n=242) thinks that health care workers are at risk of contracting HIV through contact with HIV patients. Out of 316 subjects, more than half of them, with a percentage of 58.2%, believes that circumcision can prevent HIV.

60.1% of respondents are not aware that there is risk of HIV transmission if someone gets blood splashes in outer body surfaces. Only 39.9% (n= 126) are aware of it. Most of the respondents (n=220) are aware that HIV cannot be transmitted through swimming pools. As expected 98.7% of respondents (n=312) were aware of mother to child transmission of HIV (Table 2).

Table 2. Awareness on modes of transmission

Transmission	Number of respondents (% correct answer)
Transferred through sneezes and cough	289(91.5)
Having tattoo or body piercing	279(88.3)
Visiting the barbers	147(46.5)
Risk to healthcare workers via contact to HIV infected patients	74(23.4)
Circumcision protect against HIV	132(41.8)
Blood splashes on outer body surface including mouth and eyes	126(36.6)
Spread through swimming pools	220(69.6)
Transmitted through toilet seats	254(80.4)
Transmission through homosexuality	286(90.5)
Transmission from mother to child	312(98.7)

3.3 Awareness on Prevention of HIV

Majority of the respondents (n=255) with a percentage of 80.7% believed that HIV can be prevented by abstaining from sex. 86.7% of 316 respondents also had the idea that HIV can be prevented by staying faithful to one partner. Only 23.1% of respondents (n=73) were in misconception that sex cannot be prevented by using condoms correctly for every intercourse. High awareness was found in understanding that HIV can be prevented by

avoiding previously used needles. 94.6% of the respondents (n=299) were aware of it and only 5.4% were not. 205 respondents with a percentage of 63.9% knew that HIV cannot be prevented by vaccination (Table 3).

Table 3. Awareness on HIV and AIDS Prevention

Prevention	Number of Respondents (% Correct Answer)
By sex abstinence	61(19.3)
By staying faithful to one partner	42(13.3)
By correct usage of condom	243(76.9)
By avoiding use of previouslyused needles	299(94.6)
By vaccination	205(63.9)

3.4 Attitude towards HIV and AIDS

In response to statement of keeping HIV patients out of school/university/family, the median for this statement is the lowest and shows high level of disagreement to the statement. However, respondents showed agreement for the statement of providing proper care and counseling to HIV patients. The same level of agreement was also found for the statement where they were asked if they would like to continue their friendship/ respect if any of their friends had HIV and AIDS. This goes the same with the statements saying that receiving blood transfusions puts them at risk of HIV. Agreement was given by the respondents. They also showed willingness to take initiative to educate others and admit that they are HIV positive if they ever become one. However, they were undecided when asked if they will keep an HIV patient in close proximity to them and their families (Table 4).

Table 4. Attitude towards HIV and AIDS

Statement	Median
I will keep an HIV patient in close vicinityto me and my family.	3.00
Receiving blood transfusion puts me atrisk of HIV.	4.00
I will provide proper care/counseling toHIV patient.	4.00
If I become an HIV patient, I will take theinitiative to educate others and also admit that I too belong to this category of patients.	4.00
I would like to continue myfriendship/ respect if my friend hadHIV and AIDS.	4.00
People with HIV should be kept out ofschool/ university/family.	2.00

3.5 Opinions about HIV and AIDS

As for opinions of the respondents towards HIV and AIDS, strong agreement was seen for the statement that parents should be the first initiators to provide education and awareness to their children. High level of agreement was also given when asked if a law should be enacted on pre-marriage HIV testing. There was also agreement shown for the statement saying that cartooning is a way of message delivery about risk factors of HIV to children. However, the highest level of disagreement was when asked if the HIV patients should be quarantined. The respondents were undecided if HIV-positive patient should be allowed to marry a HIV-negative patient (Table 5).

Table 5. Opinions towards HIV and AIDS

Statement	Median
A law should be enacted on pre-marriage HIVtesting	5.00
Cartooning is a way of message delivery aboutrisk factors of HIV to children.	4.00
Parents should be the first initiators to provideeducation and awareness to their children	5.00
Patients with HIV should be quarantined.	2.00
HIV-positive patient should be allowed to marry HIV-negative patient.	3.00

4. DISCUSSION

The results provided baseline data on the awareness, attitude and opinions about HIV and AIDS among pharmacy students in Malaysia. The findings indicated that their awareness on transmission of HIV and AIDS is about 75%. 70% had the misconception that healthcare workers are at risk from HIV through contact with HIV infected patients. This is not necessary if safety measures are taken. According to a study done, the risk found was low especially by physical contact [9]. 55% of the respondents also do not believe that there is a risk of HIV transmission when visiting the barber. The use of non-potent disinfectants and improper handling of sharp instruments can cause transmission of HIV. Prevention methods like instrument decontamination are highly recommended. [10]. 65% of the respondents were also not aware that having blood splashes in outer body surface like mouth and eyes is related to HIV transmission. According to a study [11], HIV contamination has been reported by healthcare workers from blood splash to the eye. Doctors and surgeons are at high risk. However, one of the best awareness was about mother to child HIV transmission. HIV can be transmitted to child during pregnancy, labour or by breastfeeding. In Europe and USA, for HIV-positive women who does not go through treatment, 15-20% of their babies are infected [12].

The level of awareness on prevention of HIV and AIDS was also moderate. 75% of them were aware that HIV can be prevented by using condom correctly for every sexual intercourse. They also understood that avoiding the use of previously used needles is a step of HIV prevention. As we know, IV drug users who share unclean needles are at high risk of getting infected with HIV. 63% of the respondents think that HIV can be prevented by vaccination. However, currently there is no vaccine available to protect against HIV. This is because HIV does not act like other viruses for which we already have the vaccines. However, vaccination can be the best long-term hope to end HIV [6].

The respondents agreed to provide proper care/counseling to HIV patient. According to a study [7], HIV counseling is a key intervention for HIV and AIDS control and is highly recommended. However, they think that HIV patients should not be quarantined. They also agreed to continue their friendship and respect towards their friends that are diagnosed with HIV and AIDS. This shows that they did not want to judge their friends and were supportive towards them. The respondents were undecided about keeping HIV patients near them or their family.

The opinions of the respondents towards enacting law on pre-marriage HIV testing were more towards agreement. This shows that respondents are considering the risk of marrying a HIV positive partner. In India, guideline of World Health Organization towards HIV testing

has been adopted and measures to encourage HIV testing are being done [9]. Other than that, when asked if HIV positive patient should be allowed to marry a HIV negative patient, the respondents were undecided. Cartooning as a way of message delivery about risk factors of HIV to children was also a well-supported idea. Usually, comic strip, gag cartoon and comic books are popular tools used among children to spread HIV awareness. Both the dialogues and words are created creatively to help the children [10]. Their attitudes towards willingness in educating others and also in admitting their condition if they are infected with HIV was also positive. This shows that if they were ever infected with HIV, they would want to be positive and open-minded. They also agreed that parents should be first initiators to provide education to their children. This shows that they believe that parents can be good early HIV message delivers.

Findings from Panjasaram V. Naidoo et al. suggested that Pharmacy students have a moderate knowledge of circumcision and HIV prevention with relatively positive attitudes. While study conducted by us suggested that 41.8% pharmacy students were able to provide the correct response on question subject to circumcision [13].

There were some correlations (positive or negative) found between some statements in the questionnaires. It is shown in the Table 6.

Table 6. Correlation coefficient between Statements

Statements	Correlation coefficient	P value	Correlation
S1: A law should be enacted on pre-marriage HIV testing. S2: HIV-positive patient should be allowed to marry HIV-negative patient.	-.207	.0001	Negative(-)
S1: I will provide proper care / counseling to HIV patient. S2: Patients with HIV should be quarantined.	-.153	.006	Negative(-)
S1: If I become an HIV patient, I will take the initiative to educate others and also admit that I too belong to this category of patients. S2: Cartooning is a way of message delivery about risk factors of HIV to children	+. 180	.001	Positive(+)
S1:If I become an HIV patient, I will take the initiative to educate others and also admit that I too belong to this category of patients S2: Parents should be the first initiators to provide education and awareness to their children.	+.280	.0001	Positive(+)
S1: I would like to continue my friendship/respect if my friend had HIV/AIDS. S2: Patients with HIV should be quarantined.	-.284	.0001	Negative(-)
S1: I would like to continue my friendship/respect if my friend had HIV/AIDS. S2: I will keep an HIV patient in close vicinity to me and my family.	+.220	.0001	Positive(+)

5. LIMITATIONS OF THE STUDY

Time constraints and convenience was a limitation to the study in that it was difficult to synchronise a convenient time for the participating students and the researchers as the study had to be explained during lecture time which resulted in a loss in lecture time or insufficient time to explain and motivate the participation of students. A further limitation of the study was the small sample size as study designed for country level and limited to two universities.

6. CONCLUSION

The findings served to express important points about HIV and AIDS awareness among pharmacy students in Malaysia. There are significant gaps in their awareness about transmission and prevention of HIV. However, to help fill in this gap, measures should be taken to educate the students. This is important because they are the future healthcare professional that will decide the future of AIDS. Data from this survey may be useful to hold campaigns or programs designed to increase HIV awareness and to change their attitudes towards HIV.

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COMPETING INTERESTS

The authors declare that they have no competing interests.

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