ORIGINAL ARTICLE

Knowledge and Attitude Towards Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS) Among Students in a Private University in Kajang

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ABSTRACT

Introduction: Over 70% of new HIV infection cases until 2019 are Malaysians aged 20 to 39. It is crucial to understand students' attitude and knowledge towards HIV/AIDS in controlling the disease. The aim of the study is to assess the knowledge level and attitude towards HIV/AIDS among students in a private university. **Methods:** A cross-sectional survey was carried out among 270 university students from 4th to 8th February 2021. A self-administered questionnaire consisted of sociodemographic characteristics, HIV-KQ-18 and AAS-G was used. **Results:** 60.7% of the participants had high knowledge. 91.1% demonstrated supportive attitude. There was no statistically significant association between knowledge level or attitude and sociodemographic characteristics, except for age and gender, respectively. However, there was a statistically significant association between attitude and knowledge level of the students on HIV/AIDS [χ^2 (1, n=270) = 5.966, p = 0.015]. **Conclusion:** Health education and awareness programmes specific to certain age and gender are needed to improve knowledge and attitude towards HIV/AIDS among university students.

Keywords: Knowledge level, Attitude, HIV/AIDS, University students

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INTRODUCTION

HIV is a virus that eliminates cluster of differentiation 4 (CD4) cells which defend the human body from many infections (1). HIV infected patients are more vulnerable to serious infections and cancers (1). AIDS is the final stage of HIV infection (1). Patients with AIDS commonly lost their lives not from AIDS but from opportunistic diseases or cancers (9). HIV transmission takes place via exchanging of bodily fluids, unprotected sex, sharing of needles, mother-to-child transmission through pregnancy and so on (9).

Around 87,000 people in Malaysia were living with HIV by the end of 2019 (13). Over 70% of new cases until 2019 are people aged 20 to 39 years old (13). People are stigmatising people living with HIV (PLHIV) and they are being isolated. According to the Ministry of Health (MoH) Malaysia, almost one third of Malaysians chose not to buy vegetables from PLHIV shopkeepers; approximately 26% citizens thought children with HIV should not attend school with other children (13). Error-free information should be disseminated for coping with these issues corresponding with the vision of the national strategic plan ending AIDS 2016 to 2030: No new infections, prejudices and AIDS induced mortality (12).

It is crucial for university students to have adequate knowledge and positive attitudes towards HIV/AIDS for better prospects of controlling the disease. However, more studies are required to investigate the present knowledge level and attitude of young populations, especially university students, to rule out effective HIV/AIDS preventive measures.

General objective of the present research is to assess the knowledge level and attitude of students towards HIV/AIDS in a private university in Kajang. The specific objectives are to determine the knowledge level and attitude of students towards HIV/AIDS; and association between knowledge level, attitude and sociodemographic characteristics (age, gender, religion practice and education level).

MATERIALS AND METHODS

A cross-sectional survey was carried out from 4th to 8th February 2021 in a private university in Kajang. 270 participants were recruited by using convenience sampling method. The approval for conducting the study was obtained from the ethical board of the university.

Inclusion criteria were foundation (pre-university) and undergraduate students from a private university in Kajang; aged 18 and above; consent and can take part in the study. Exclusion criteria were postgraduate students; aged below 18; decline or cannot take part in the study.

A validated questionnaire in English language was used to assess the knowledge level and attitude of university students towards HIV/AIDS. The self-administered questionnaire encompassed three sections.

The first section contained four closed-ended questions about sociodemographic characteristics of the participants such as age, gender, education level and religion practice.

The second section was Brief HIV Knowledge Questionnaire (HIV-KQ-18). Alternatives of "True", "False" or "Don't Know" are available for all the 18 questions (4). "Don't Know" is one of the incorrect answers. 1 point for correct answer. 0 point for incorrect answer. Score above 9 points denotes high knowledge level on HIV/AIDS and vice versa (3).

The third section was Generic AIDS Attitude Scale (AAS-G). A six-point Likert-type scale is attached to each of the 21 questions. 1 point for "Strongly disagree", 2 points for "Moderately disagree", 3 points for "Disagree", 4 points for "Agree", 5 points for "Moderately agree" and 6 points for "Strongly agree". Questions are divided into two subscales: Avoidance and Empathy (7). Mean scores of each subscale are calculated, ranging from 1 to 6 points. A difference score ranging from -5 to +5 was produced by subtracting the mean Avoidance sub score from the mean Empathy sub score. Negative score suggests intolerant attitude while positive score indicates supportive attitude (18).

Content validation was done by experienced internal and external department lecturers from faculty of medicine and health sciences of the university. Reliability tests were done for the third section which comprised a scale. The instrument was found reliable with Cronbach Alpha of 0.709 for Avoidance subscale, and 0.847 for Empathy subscale.

Web-based questionnaires were distributed to all participants through social media platforms involving Microsoft Teams, WhatsApp and Messenger. A concise account on the research topic, consent form, recruitment letter and personal data protection statement were displayed on the first page. Consents were obtained before participants began to answer the questionnaire. Data collected were anonymous and stored in a computer with encryption to ensure confidentiality.

SPSS version 26.0 was used for data analysis. Data entered manually were checked twice for preventing error. Computation of frequency of each value of variables were performed for accuracy. An analysis was carried out to ensure zero missing data. Frequency and percentage were used to present sociodemographic characteristics (age, gender, religion practice and education level), knowledge level and attitude towards HIV/AIDS. The associations between knowledge level, attitude towards HIV/AIDS and the sociodemographic characteristics were determined by running Chi-square tests. Confidence interval selected was 95%, p value was considered statistically significant when less than 0.05.

ETHICAL CLEARANCE

The study was approved by UTAR ethical board U/SERC/14/2021.

RESULT

All the 270 participants completed the questionnaires. The data on sociodemographic characteristics portrayed most of the participants aged 18 to 22 years old, 226 (83.7%), and were female, 192 (71.1%). A significant proportion of the participants practised religion, 213 (78.9%), and were undergraduates, 145 (53.7%). The rest of the results are as shown in Table I.

Table I Frequency and percentage distribution of study samples according to sociodemographic characteristics (n=270).

Sociodemographic characteristics	Frequency (f)	Percentage (%)
Age		
18 - 22	226	83.7
23 - 27	44	16.3
Gender		
Male	78	28.9
Female	192	71.1
Religion Practice		
Yes	213	78.9
No	57	21.1
Education level		
Foundation	125	46.3
Undergraduate	145	53.7

Table II depicts frequency and percentage of knowledge level of students on HIV/AIDS. Over half of the participants exhibited high knowledge level, 164 (60.7%). The remaining participants had low knowledge level, 106 (39.3%).

Table III illustrates frequency and percentage of attitude of students towards HIV/AIDS. Almost all the participants demonstrated supportive attitude, 246 (91.1%), whilst a

Table II Frequency and percentage distribution of knowledge level of students on HIV/AIDS (n=270).

Knowledge Level on HIV/AIDS	Frequency (f)	Percentage (%)
Low	106	39.3
High	164	60.7

Table III Frequency and percentage distribution of attitude of students towards HIV/AIDS (n=270).

Attitude towards HIV/AIDS	Frequency (f)	Percentage (%)
Intolerant	24	8.9
Supportive	246	91.1

minority of the participants showed intolerant attitude, 24 (8.9%).

Table IV presents association between knowledge level of students on HIV/AIDS and the sociodemographic characteristics. More than half of the participants aged 18 to 22 years old, 130 (57.5%), demonstrated high knowledge level. The remaining participants from the age category, 96 (42.5%), possessed low knowledge level. Around three-quarters of participants aged 23 to 27 years old, 34 (77.3%), showed high knowledge level. A minority of the participants in the age group, 10 (22.7%), showed low knowledge level. There was a statistically significant association between knowledge level and age [χ^2 (1, n=270) = 6.025, p = 0.014]. However, no statistically significant association between knowledge level and sociodemographic characteristics, unless for age.

Table IV. Association between knowledge level of students on HIV/AIDS and sociodemographic characteristics (n=270).

Sociodemographic Characteristics	Knowledge Level		Chi-Square Test
	Low f (%)	High f (%)	
Age			
18 - 22	96 (42.5)	130 (57.5)	6.025
23 - 27	10 (22.7)	34 (77.3)	p = 0.014*
Gender			
Male	31 (39.7)	47 (60.3)	0.011
Female	75 (39.1)	117 (60.9)	p = 0.917
Religion Practice			
Yes	86 (40.4)	127 (59.6)	0.527
No	20 (35.1)	37 (64.9)	p = 0.468
Education level			
Foundation	55 (44.0)	70 (56.0)	2.194
Undergraduate	51 (35.2)	94 (64.8)	p = 0.139

significant level at p<0.05

Table V reveals the association between attitude of students towards HIV/AIDS and sociodemographic characteristics. More than three-quarters of male participants, 66 (84.6%), presented supportive attitude. A small number of male participants, 12 (15.4%), had intolerant attitude towards HIV/AIDS. Almost every female participant, 180 (93.8%), had supportive attitude. A few female participants, 12 (6.3%), exhibited intolerant attitude. There was a statistically significant association between attitude and gender [χ^2 (1, n=270) = 5.715, p = 0.017]. Nevertheless, there was no statistically significant association between attitude and sociodemographic characteristics, except for gender.

Table V Association between attitude of students towards HIV/AIDS and sociodemographic characteristics (n=270)

Sociodemographic Characteristics	Attitude		Chi-Square Test
	Intolerant f (%)	Supportive f (%)	
Age			
18 - 22	19 (8.4)	207 (91.6)	0.398
23 - 27	5 (11.4)	39 (88.6)	p value = 0.528
Gender			
Male	12 (15.4)	66 (84.6)	5.715
Female	12 (6.3)	180 (93.8)	p value = 0.017*
Religion Practice			
Yes	18 (8.5)	195 (91.5)	0.239
No	6 (10.5)	51 (89.5)	p value = 0.625
Education level			
Foundation	13 (10.4)	112 (89.6)	0.656
Undergraduate	11 (7.6)	134 (92.4)	p value = 0.418

**** significant level at p<0.05***

Table VI highlights the association between attitude and knowledge level of students on HIV/AIDS. More than three-quarters of students with low knowledge level, 91 (85.8%), displayed supportive attitude. Almost all students with high knowledge level, 155 (94.5%), had supportive attitude. There was a statistically significant association between the attitude and knowledge level of students on HIV/AIDS [χ^2 (1, n=270) = 5.966, p = 0.015].

Table VI Association between attitude and knowledge level of students on HIV/AIDS (n=270).

Knowledge Level	Attitude		Chi-Square Test
	Intolerantf (%)	Supportivef (%)	
Low	15 (14.2)	91 (85.8)	5.966
High	9 (5.5)	155 (94.5)	p value = 0.015*

****significant level at p<0.05***

DISCUSSION

Over 60% of the participants had high level of knowledge on HIV/AIDS. Similar finding was also discovered by Talwar and Rahman (19). However, the finding of the current study was lower compared to Singh, et al (17) as the sample size of the current study was larger and the

questionnaire was slightly different. The current study assessed students knowledge on HIV/AIDS in general, mode of transmission and the treatment. Furthermore, the current study included students from non-medical programmes which could have contributed for the low knowledge about HIV/AIDS (23).

The attitude questionnaire was mainly looking at the blaming, stigmatising and empathy components in attitude towards PLHIV. 91.1% of students displayed supportive attitude towards HIV/AIDS. The finding was in line with research conducted in Malaysia and Tuzla, Bosnia and Herzegovina (10,16). The considerable finding might be from the beneficial effect of the national strategic plan for ending AIDS in Malaysia from 2016 to 2020 (12). Former relevant exposure and knowledge gained via sex education and workshops in schools or universities might have led to the positive score in the attitude section of the questionnaire by nearly all the participants in the present study.

There was no statistically significant association between the knowledge level and sociodemographic characteristics unless for age. Surprisingly, the finding was in contrast with a study done in another Malaysian university (17). This could be due to less knowledge level categories in the present research which led to greater difference in percentage, and significant association between knowledge level and age. The association between knowledge level, gender, religion practice and education level showed no statistical significance. These findings were in accordance with other studies done in Malaysia, Nagaland, Lebanon and Saudi Arabia (11,5,14,22). Unlike the previous studies, the present study found no statistically significant association between knowledge level and education level. The disparities could be due to different research instruments used and smaller sample size which involved university students only.

No statistically significant association was discovered between attitude and sociodemographic characteristics, except for gender. There was no significant association between attitude and age. Alwafi, et al. reported, the number of participants who were willing to live with HIV positive people was significantly higher in the age category of 19 to 25 years old in Saudi Arabia ($p < 0.05$) (11). Yet, the finding of previous study was in line with current study as the participants who had more positive attitude in both studies were of the same ages. In contrast, a study done in Ghana revealed the age group 15 to 19 years old was significantly associated with bad attitude towards PLHIV (6). United Nation highlighted the cycle between HIV/AIDS and poverty was perpetuated by inadequate education in Africa (21). Students from different countries, social and cultural backgrounds with different age of exposure to HIV/AIDS education can have different attitude towards HIV/AIDS. Association between attitude and gender was statistically significant whereas the association between attitude and religion practice showed no statistical significance in the current study. Similar findings were also revealed by research done in Ethiopia and Nagaland (14,15). No significant association between attitude and education level. Conversely, a population-based survey conducted in Bolivia highlighted that stigmatising attitude was significantly associated with insufficient education ($p=0.03$) (20). Owing to higher awareness on HIV/AIDS management and transmission modes, better educated participants were able to comprehend and assist PLHIV (22). This could be due to the narrower age range in the present study.

Moreover, there was a statistically significant association between attitude and knowledge level. This finding corresponds with previous study done in Lebanon (22). Youssef, et al. discovered more knowledge (Beta = 0.66) was significantly associated with more positive attitude (22). Past literature asserted low knowledge level on HIV transmission routes posed negative impact on people's attitude towards HIV/AIDS (2).

CONCLUSION

In conclusion, the findings of present research clearly demonstrated that most of the university students possessed high knowledge levels on HIV/AIDS. Over one-third of the students showed low knowledge levels on HIV/AIDS. It was noteworthy that almost all participants revealed supportive attitudes towards HIV/AIDS. A small number of students portrayed intolerant attitudes. No statistically significant association between knowledge level on HIV/AIDS and sociodemographic characteristics except for age. No statistically significant association between attitude towards HIV/AIDS and sociodemographic characteristics, unless for gender. The result pointed out age and gender specific awareness programmes consisting of counsellings, building coping skills and accurate HIV/AIDS information were required to eliminate present students' misunderstanding about HIV/AIDS.

The research highlighted the association between attitude and knowledge on HIV/AIDS was statistically significant. The findings posited the need to improve knowledge levels on HIV/AIDS followed by attitude towards HIV/AIDS among minority of the university students. Health education and talks ought to focus on enriching knowledge and decreasing angsts, misconceptions or blaming towards HIV/AIDS among the students.

The research delivered better understanding about the knowledge level and attitude towards HIV/AIDS of students in a private university in Kajang. Other implication was support, counselling sessions and right information regarding HIV/AIDS could be given by HIV

specialist nurses to high-risk youth and community in Malaysia (8).

Recommendations for future study encompassed stratified random sampling technique for minimising bias and increasing internal validity. Cohort study could be conducted for analysing and drawing conclusions on causality between knowledge level and attitude towards HIV/AIDS. Generalizability of the research findings could be boosted via multi-centred research with large sample size.

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