

# HIV/AIDS Knowledge Level Among Undergraduate Health Science Students in A Private University, Malaysia.

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## ABSTRACT

Globally, the spread of HIV/AIDS is a major public health challenge because of its pandemic magnitudes. Despite the fact that people of any age are susceptible to HIV, the younger population is more susceptible to be infected because of their lifestyle choices. The purpose of this study was to assess the extent of HIV/AIDS knowledge level among health science undergraduate university students as they play a primary role within the health care system of a country. A cross-sectional study was conducted by using a semi structured, self-administered, especially design questionnaire. Out of total one hundred fifty undergraduate university students, there were 96 males (64%) and 54 females (36%) with the age ranging from 19-25 years. All the students were able to write the acronym of HIV (100%) and AIDS (100%). Common routes of transmission and prevention measure were known by majority of the students. Students stated correctly regarding HIV/AIDS transmission from mother to child through pregnancy (18.02%), delivery (15.31%) and breast feeding (11.30%) which was very low level of knowledge. Most of the medical, dental and physiotherapy students had correct knowledge on high risk populace for HIV/AIDS; like singles, intravenous drug user, multiple sex partners and commercial sexual partner. Regarding the preventive measure as hand washing, use of facial mask and sexual abstinent was correctly mentioned by only 31.34%, 34.02% and 28.01% total students respectively. However other safety measure like condom use, effectiveness of condom use, screening of blood was widely known by the students. However, regarding the knowledge on treatment issue of HIV/AIDS, majority of the students (85.30%) correctly knew that HIV/AIDS was not curable, whereas only 15.31% and 20.01% correctly knew that the treatment was very expensive and available respectively. So, this study focus the educational endeavors that could be broadened to emphasis on its general knowledge on HIV/AIDS.

**Key words:** HIV, AIDS, Knowledge, undergraduate, health science student, Malaysia

## INTRODUCTION

HIV/AIDS infection has become a comprehensively paramount health concern worldwide because of its pandemic magnitudes. Every year, World AIDS day which is held on December 1st, remind people all over the globe not to quit the matters related with HIV/AIDS. Globally, more than one hundred million people living with HIV/AIDS; however more than half of these populations are youth (aged between 12-30 years) due to their lifestyles approaches (UNAIDS World AIDS Day report, 2012). As in most part of the world, it is alarming to observe that the HIV infection rate and AIDS instances in Malaysia also are showing a fast spreading among younger generation (Wong *et al.*, 2008).

In Malaysia, the first case of HIV/AIDS was identified in 1986. Within 30 years, the estimated number of HIV/AIDS patient is currently reported 105,439 which were 86,324 in 2013. Each day more than ten persons are identified as HIV/AIDS positive case which

indicates that HIV/AIDS is rapidly growing epidemic in Malaysia (Global AIDS Response Progress Report Malaysia, 2015). The highest mode of transmission is heterosexual relationship (51%) accompanied by injecting drug user (22%) and bisexual transmission (22%) (Global AIDS Response Progress Report Malaysia, 2014). But this year, the Ministry of Health Malaysia stated that 70% of HIV/AIDS transmissions occur via heterosexual relationship which means female sex worker to male clients because of unsafe sexual activities (International Aids Response Development report Malaysia, 2016). Among this population, those ages between 20-39 years, represent more than half of the new HIV/AIDS infection in Malaysia. So like other countries globally, adolescent and young adults in Malaysia are the target population as they may interact in unsafe sexual behavior (Lee, 1999). If these target populations remain unaware about the HIV/AIDS information, they'll be knocking hard by HIV/AIDS pandemic (Tan *et al.*, 2007).

Although people of any age are susceptible to HIV, the younger population is more vulnerable to becoming infected by HIV/AIDS. Young adults, particularly college and university students are in a phase of physical, mental, hormonal and psychological development. As a result interpersonal relationships are formed and sexual experimentation takes place, making them specifically susceptible to sexually transmitted diseases (STDs) as well as HIV infection. Many other factors also increase the susceptibility which include a lack of knowledge about HIV/AIDS, lack of proper education, poor access to health services and facilities, early sexual debut, early marriage, sexual intimidation (Tan *et al.*, 2007). So, to prevent HIV/AIDS infection, younger people need the requisite information about HIV and its related hazardous factors.

According to the report of a nationwide survey among the Malaysian young adults, the knowledge of HIV/AIDS was stated to be lacking in modes of transmission such as tattooing and piercing, sharing personal items, and breast-feeding from an infected mother (Rahman *et al.*, 2011). The findings of this nationwide survey suggested more education and intervention programs needed to extent knowledge and consciousness of HIV/AIDS (Wong *et al.*, 2008).

To enforce the improvement of more effective primary HIV/AIDS prevention program for young adults in Malaysia, the country need more knowledgeable people and health care providers. So to conquer this condition, the mode of transmission of HIV/AIDS can be demonstrated by using health educational intervention program to the young generation to improve knowledge and awareness about HIV/AIDS.

Health science students are the future health care provider who will implement proper preventive measures and health educational and promotional sessions to promote information and knowledge among the public. Consequently, it is crucial that this future health care provider should have profound expertise of this lethal infection. Thus, the aim of this study was to assess the level of knowledge of HIV/AIDS among the health science students at a private university in Malaysia.

**MATERIAL AND METHODS**

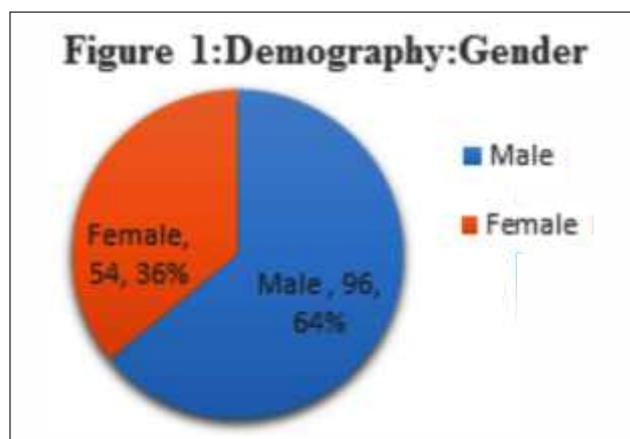
It was a cross sectional question based study which was conducted during June – July, 2016 among three

randomly selected faculties (Medical, Dental and Physiotherapy) at a private university college in Malaysia. Undergraduate students (age 19-25 years) of this three faculties were selected as a respondents by random sampling technique. A total 150 students were included for this study as sample subject. Semi structured, self-administered, specifically designed questionnaire was administered among the respondents after taking verbal informed consent. Respondent's confidentiality was maintained and special precaution was taken to reduce mutual communication to minimize bias by invigilating respondents while they were completing the questionnaire.

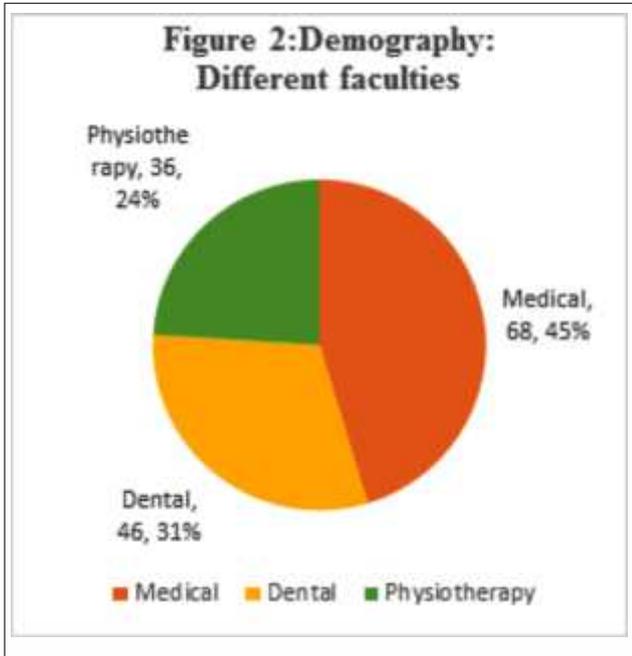
The questionnaire consisted of total 33 questions regarding HIV/AIDS transmission route, risk, prevention and treatment. Students were instructed about the objectives of the study, terminology used in questionnaire and instructions were given to fill up the questionnaire before data collection procedure. Respondents were given 30 minutes to complete the questionnaire. The participants were free to withdraw from the study anytime during the data collection procedure without any obligation. All eligible respondents were clearly instructed that participation in this study was voluntary and anonymous and confidentiality will be strictly maintained. Data analysis was done by Microsoft excel sheet and software statistical package version 22.

**Results**

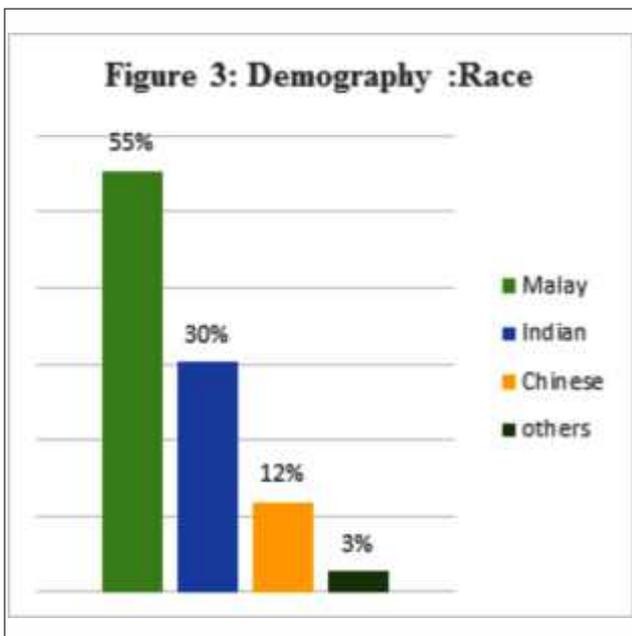
*Total 175 questionnaire was distributed and the response rate was 85.7% (N=150). There were 96 males (64%) and 54 females (36%) with the age ranging from 19-25 years (Figure 1).*



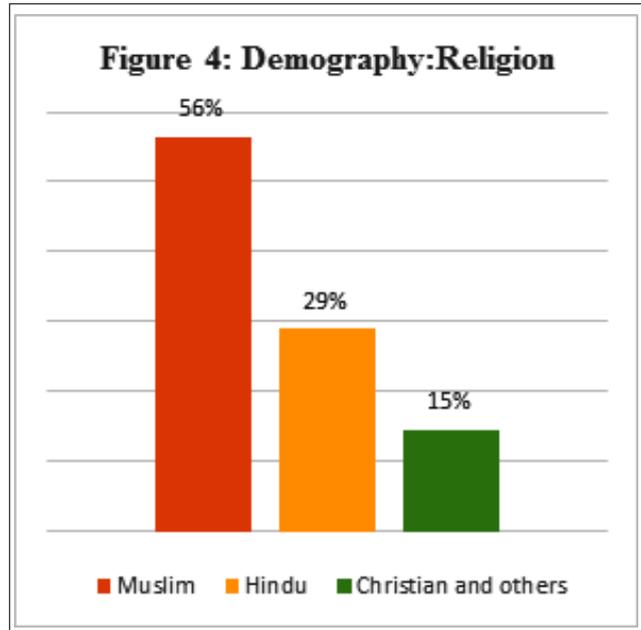
Out of total 150 students, there were 68(45.33%) medical, 46(30.66%) dental and 36(24.01%) physiotherapy students (Figure 2).



Most of the students were Malay (55.33%), followed by Indian (30.21%), Chinese (11.8%) and other races (2.66%) (Figure 3).



The major portion of the students were Muslim (56.47%) and Hindu (29.02%) followed by Christian and others (14.51%) (Figure 4).



All the students from the three different faculty were able to write correctly the acronym HIV and AIDS (100%) with a statistically significant ( $P < 0.05$ ) between three professional streams and the difference between the two terminologies were correctly known by 63.23%, 58.69% and 50.0% of medical, dental and physiotherapy students respectively (Table 1).

	Medical (n=68)	Dental (n=46)	Physiotherapy (n=36)	Total (n=150)
Acronym of HIV	68 (100%)	46 (100%)	36 (100%)	150 (100%)
Acronym of AIDS	68 (100%)	46 (100%)	36 (100%)	150 (100%)
Difference between the term HIV/AIDS	43 (63.23%)	27 (58.69%)	18 (50.0%)	88 (58.66%)

Regarding mode of transmission of HIV/AIDS, 94.12% medical, 86.95% dental and 80.55% physiotherapy students correctly recognized the unprotected sexual intercourse as the causes HIV/AIDS. Another important route of transmission was unscreened blood transfusion which was also correctly known by 83.82% medical, 80.43% dental and 58.35% physiotherapy students. Total 46.02% students gave correct statement regarding physical contact like kissing or hugging with an infected person with an oral ulcer. Majority of the students gave correct answer regarding the various methods of transmission of HIV/AIDS in term of unprotected sexual intercourse (88.67%), unscreened blood transfusion (76.68%) and sharing needle (64.02%) (Table: 2).

Table 2: Correct knowledge on mode of transmission of HIV/AIDS

	Medical (n=68)	Dental (n=46)	Physiotherapy (n=36)	Total (n=150)
Unprotected sexual intercourse	64 (94.12%)	40 (86.95%)	29 (80.55%)	133 (88.67%)
Unscreened Blood transfusion	57 (83.82%)	37 (80.43%)	21 (58.35%)	115 (76.68%)
Contact physically by kissing infected person with oral ulcer	29 (42.64%)	24 (52.17%)	16 (44.45%)	69 (46.02%)
Sharing needle	52 (76.47%)	27 (58.69%)	17 (47.21%)	96 (64.02%)

Regarding knowledge on mother to child transmission of HIV/AIDS infection, all students from three different faculties had low level of correct knowledge. Among the medical, dental and physiotherapy faculties, the correct knowledge on transmission of HIV/AIDS during pregnancy was given by 13(19.11%), 11(23.91%), 3(8.36%) respectively. Even the result was similar for the correct knowledge on transmission of HIV/AIDS during delivery and breast feeding. Total 23(15.31%) dental students and 17 (11.30%) physiotherapy students mentioned the correct answer about the HIV/AIDS transmission during delivery and breastfeeding respectively (Table 3).

Table 3: Correct knowledge on transmission of HIV/AIDS from mother to child

	Medical (n=68)	Dental (n=46)	Physiotherapy (n=36)	Total (n=150)
During pregnancy	13 (19.11%)	11 (23.91%)	3 (8.36%)	27 (18.02%)
During delivery	12 (17.64%)	7 (15.21%)	4 (11.14%)	23 (15.31%)
During breast feeding	7 (10.29%)	2 (4.34%)	8 (22.21%)	17 (11.30%)

Most of the medical, dental and physiotherapy students had correct knowledge on high risk population for HIV/AIDS; like singles, intravenous drug user, multiple sex partner, commercial sex workers were correctly known 86.76%, 91.17%, 83.8%, and 67.64% respectively by medical students; 78.25%, 89.13%, 58.69%, 54.34% respectively by dental students; 77.75%, 75.02%, 63.89%, 58.34% respectively with the physiotherapy students. The chronology of correct knowledge regarding the high risk population for HIV/AIDS from high risk to low risk among the total students was intravenous drug user 130 (86.66%), singles (82.01%), multiple sex partner 107 (71.33%), commercial sex worker 92 (61.34%), homosexual 69 (46.01%), adolescents 56 (37.33%) and frequent blood donor 50 (34.33%) (Table 4).

Table 4: Correct knowledge on high risk population for HIV/AIDS

	Medical (n=68)	Dental (n=46)	Physiotherapy (n=36)	Total (n=150)
Singles	59 (86.76%)	36 (78.25%)	28 (77.75%)	123 (82.01%)
Youth and adolescents	21 (30.88%)	19 (41.30%)	16 (44.45%)	56 (37.33%)
Intravenous drug user	62 (91.17%)	41 (89.13%)	27 (75.02%)	130 (86.66%)
Homosexuals	31 (45.59%)	24 (52.19%)	14 (38.87%)	69 (46.01%)
Multiple sexual partners	57 (83.82%)	27 (58.69%)	23 (63.89%)	107 (71.33%)
Commercial sex worker	46 (67.64%)	25 (54.34%)	21 (58.34%)	92 (61.34%)
Frequent blood donor	27 (39.70%)	11 (23.91%)	12 (33.36%)	50 (34.33%)

Majority of the students from three different faculties had correct knowledge on disposable syringe (84.05%), condom use (72.78%), effectiveness of condom (65.36%) and health education (49.32%). Whereas regarding screening of blood product only 57(38.01%) students stated accurate answer. All the three cohorts (medical, dental and physiotherapy) had low level of correct knowledge on the preventive measure of HIV/AIDS in term of hand washing, use of facial masks and sexual abstinence (Table 5).

Table 5: Correct knowledge on preventive measures of HIV/AIDS

	Medical (n=68)	Dental (n=46)	Physiotherapy (n=36)	Total (n=150)
Condom use	49 (72.05%)	37 (80.43%)	23 (63.89%)	109 (72.78%)
Effectiveness of condom	46 (87.64%)	33 (71.72%)	19 (52.75%)	98 (65.31%)
Screening of blood and blood products	19 (27.94%)	21 (45.65%)	17 (47.21%)	57 (38.01%)
Use of disposable syringes	57 (83.82%)	41 (89.13%)	28 (77.72%)	126 (84.05%)
Hand washing	16 (23.52%)	13 (28.26%)	18 (50.0%)	47 (31.34%)
Use of facial masks	26 (38.23%)	22 (47.81%)	3 (8.36%)	51 (34.02%)
Sexual abstinence	20 (29.41%)	14 (30.43%)	8 (22.21%)	42 (28.01%)
Health education	33 (48.52%)	12 (26.10%)	29 (80.55%)	74 (49.32%)

Concerning the information on treatment issue of HIV/AIDS, majority of the students (85.30%) correctly knew that HIV/AIDS was not curable, while only 15.31% and 20.01% correctly knew that the treatment was very expensive and available respectively (Table 6).

Table 6: Correct knowledge on treatment of HIV/AIDS

	Medical (n=68)	Dental (n=46)	Physiotherapy (n=36)	Total (n=150)
Treatment is available for HIV/AIDS	5 (7.36%)	19 (41.30%)	6 (16.67%)	30 (20.01%)
HIV/AIDS treatment is very expensive	12 (17.64%)	4 (8.69%)	7 (19.45%)	23 (15.31%)
HIV/AIDS is not curable	58 (85.29%)	37 (80.43%)	33 (91.70%)	128 (85.30%)

## Discussion

This study focused on the medical, dental and physiotherapy students of 19-25 years of age. The knowledge of this young generation play a major role in health care system of a country as they are future health care provider who would be responsible for conveying their knowledge and education to the community specially with respect to HIV/AIDS information, modes of transmission, high risk sexual behaviors in addition to effective preventive and treatment measures.

All three faculty students correctly wrote the acronym of HIV and AIDS (100%) in this study but in another study which was done among the first year MBBS, nursing and pharmacy students of a health university in India, majority of students correctly wrote the full form of AIDS (95.8%), in comparison to HIV (72.6%) (Sachdeva *et al.*, 2011). The difference between HIV/AIDS was known to total 58.66% in this study while it was 54% among university college students at Kazakhstan (Hansson *et al.*, 2008) and 82.3% university students at India (Sachdeva *et al.*, 2011).

In this study, majority of the respondents gave accurate responses regarding the numerous methods of transmission of HIV/AIDS during unprotected sexual intercourse, unscreened blood transfusion and sharing needle. Similar finding was noted among the students of Caribbean medical school, where 92.6% had correct knowledge on various routes of transmission (Orisatoki & Oguntibeju, 2008); even in another study which was conducted in DebreMarkos University among nursing, midwifery and public health students; total 98.8% student stated that HIV can transmitted by blood contact (Abebe *et al.*, 2015).

The correct answer of other mode of transmission of HIV/AIDS like contact with infected sweat and saliva, sharing cloths, sharing utensils and bathroom was very low. Regarding physical contact like kissing or

hugging with an infected person with oral ulcer, 42.64% (Table 2.) medical students gave correct answer for this study whereas 60.6% medical student of a public university of Malaysia, which was higher in comparison to this study (Ni & Htet, 2012). This finding was consistent with national survey among the Malaysian young adult in which the proportions of correct responses are casual contacts were 90.8% (Wong *et al.*, 2008).

Regarding information on mother to child transmission of HIV/AIDS infection, all students from three different faculties had low level of correct knowledge. Only 19.11% medical students gave correct answer regarding transmission of HIV/AIDS from mother to child during pregnancy, 17.64% during delivery and 10.29% during breast feeding, which is alarming (Table 3). According to the survey among Malaysian young adults, 54.8% are aware of the route of transmission by breast-feeding from an infected mother (Wong *et al.*, 2008). In a study done among 1st and 2nd year MBBS students at a medical college Baroda, 29% student were unaware regarding HIV/AIDS transition route through breast feeding (Mohsin, Nayak, & Mandaviya, 2010). Similar result of poor knowledge among the health related personals was noted in a study among the traditional birth attendants in Nigeria, wherein 62% recognized breastfeeding as a route of transmission while only 31.5% mentioned delivery as a possible method of transmission (Balogun & Odeyemi, 2010).

Most of the medical, dental and physiotherapy students had correct knowledge on high risk population for HIV/AIDS; like singles, intravenous drug user, multiple sexual partners, commercial sex workers were correctly known except youth and adolescents (37.33%) as a high risk population for HIV/AIDS which is very shocking. Even in another study conducted among the medical student in public university in Malaysia showed that only 17.4% medical students had correct knowledge on youth as high risk population. (Ni & Htet, 2012).

Majority of the students from three faculties had high level of correct knowledge on disposable syringe, condom use, and effectiveness of condom and health education as preventive measure but low level of correct knowledge in term of hand washing, use of

facial masks and sexual abstinence. But unfortunately, in this study only total 38.01% (medical, dental and physiotherapy) (Table 5.) student stated correct answer about one of the most effective preventive measure of screening of blood product which was indicated by 95.8% of total (medical, nursing and pharmacy) in a health university in India (Sachdeva *et al.*, 2011); 98.1% of the medical students in a public college in Malaysia (Ni & Htet, 2012). Another study conducted among the high school students in Northwest Ethiopia regarded sexual abstinence as an approach to prevent transmission of HIV (84.1%) (Gashaw *et al.*, 2007). But for this study it was correctly stated by 28.01% (Table 5.) of the total students which indicates that this knowledge gap should be taken in concern in future.

In a study conducted in India, proportion of respondents who were aware about existence of treatment for HIV/AIDS was 27.4%. However for this study only 20.01% correctly knew that treatment of HIV/AIDS is available (Sachdeva *et al.*, 2011). Correct knowledge about non-curable nature of HIV/AIDS was not known to 35% of medical, 43% of dental and 33% of physiotherapy students in India (Chauhan *et al.*, 2011). But for this study 85.29% medical, 80.43% dental and 91.70% (Table 6) physiotherapy students reported correct answer regarding HIV/AIDS being not curable.

Knowledge about HIV/AIDS is crucial for health care professional because of increasing prevalence of HIV/AIDS. Ignorance, lack of knowledge and misguided beliefs may also affect an individual to behave and communicate in a particular manner in term of HIV/AIDS infection. There is a strong impact about different level of knowledge on HIV/AIDS which was noted among three professional streams in this study. This indicates that a sustainable HIV/AIDS related training among the health care professional from the beginning of their carrier may reduce the prevalence of HIV/AIDS in Malaysia. There is enough possibility in improving knowledge, positive attitude and changing behavior regarding the HIV/AIDS among students during their period of training in the institute. This could assist to improve the pupil's understanding and demystify their misconceptions. In addition to providing adequate knowledge, the medical colleges and allied health

sciences colleges must foster an environment that is beneficial for the development of appropriate student attitude and behavior.

## CONCLUSION

This study focused on future leaders of health care system from medical, dental and physiotherapy under graduate students. Including HIV/AIDS related educational material in the curriculum for healthcare students may increase their awareness about HIV/AIDS and cultivate a positive attitude towards HIV/AIDS prevention. Community training and health promotion campaigns can drive out misconceptions about HIV/AIDS and thereby reduce phobias of healthcare specialists as well as general population and HIV/AIDS patients. To conclude, this study point out that educational endeavor could be broadened to increase awareness on the widespread knowledge related to HIV/AIDS.

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