

Knowledge and Attitude of HIV/AIDS Infection among Medical Students

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ABSTRACT

Introduction: HIV/AIDS is a major public health problem with approximately 1600 new cases occurring every day. According to the global estimates by UNAIDS, the people living with HIV/AIDS was 33.4 million by the end of 2008, with 3.8 million being in South and South East Asia.

In Malaysia, the introduction of HIV virus was estimated to be around early 1980's. Since then, according to the Ministry of Health Statistics, 87,710 confirmed HIV infected cases, 15,317 AIDS cases and 13,394 HIV/AIDS related deaths are reported by the end of 2009. Adults aged between 20 and 39 years constitute for more than half of the new HIV infections. Every day, more than 10 Malaysians are tested positive for HIV infection.

Objective: The objective of this study was to assess the knowledge and attitude of HIV/AIDS infection among the medical students of Universiti Malaysia Sabah, a public medical school in Malaysia.

Method: This study was a cross sectional questionnaire based study conducted at the School of Medicine, Universiti Malaysia Sabah. A specifically designed questionnaire was distributed to all the medical students on the first day of the semester. The questionnaires regarding knowledge were focused on various methods of transmission, high risk behaviours and preventative measures. Attitude towards HIV/AIDS patients, sexual behaviours, condom usage, sex education and resource allocation for HIV/AIDS patients were assessed.

Result: A total of 155 medical students participated in this study, with the age ranging from 19 to 25 years. Majority gave correct responses for mode of transmission while only 60.6% had knowledge that HIV can be transmitted via kissing an infected person when oral ulcer is present. Concerning mother to child transmission, 72.3% responded that the transmission is in-utero and only 65.2% realized the transmission through breast milk. Regarding knowledge on high risk population for HIV infection, only 17.4% agreed for youth. 146 students (94.2%) had knowledge that HIV infection can be prevented by condom usage but only 69 students (44.5%) responded correctly the effectiveness of the condom. Majority of the respondents (83.2%) disagree for showing no sympathy towards HIV positive persons. Regarding various sexual behaviours, 43.2% and 35.5% approved for masturbation and oral sex respectively while 78.7% and 86.5% disagreed for anal sex and sex with changing partner respectively. 88 respondents (56.8%) agree for condom usage with every sexual encounter whereas 1 student believed that condom should never be used. Most of the students (98.7%) agreed for the need of sex education sessions. 90.3% did not believe that resource allocation for caring of HIV/AIDS patients is unworthy.

Conclusion: Even among the medical students, the knowledge of mother to child transmission through breast feeding is weak and most of them believe that transmission is mainly in utero. Only a small

percentage of medical students regard the youth as one of the high risk populations for HIV infection. Majority of the students acknowledge that condom can be preventive of HIV infection but they did not know the extent of effectiveness of the condom usage. Furthermore, only 56.8% agree for condom usage with every sexual encounter. Based on the findings of this study, knowledge regarding mother to child transmission and condom usage must be more emphasized in the medical curriculum so that the future doctors could play the leading role in better prevention of HIV/AIDS infection in the community.

Keywords: Knowledge, Attitude, HIV/AIDS infection, Medical students

Introduction

Since its first recognition in 1981, HIV/AIDS infection has become a major health concern worldwide. According to 2011 UNAIDS world AIDS day report, people living with HIV/AIDS was 32.3 million in 2008, which increased to 34 million at the end of 2010 of which 4.0 million living in South and South East Asia. Approximately 1600 new cases occur every day and a total of 2.67 new HIV/AIDS infection cases occurred globally in 2010. 1.76 million died of AIDS related deaths in 2010¹.

In Malaysia, the first three cases of HIV infection were detected in 1986. By the end of 2009, 23 years into the HIV epidemic, 2010 UNGASS country progress report by the Ministry of Health has recorded a total of 87,710 confirmed HIV infected cases, 15,317 AIDS cases and 13,394 AIDS related deaths. An estimated 105,439 people are currently living with HIV. Adults aged between 20 and 39 years constitute for more than half of the new HIV infections. Every day, more than 10 persons are tested positive for HIV infection².

Likewise in most of the countries worldwide, adolescents and young people in Malaysia are more likely to be among the target population affected by HIV/AIDS infection since they may engage in unsafe sexual behaviours³. If these population lack adequate knowledge on HIV/AIDS infection and safe sexual

behaviours, they will be hit hard by HIV pandemic⁴.

Medical students are the future health care providers who will implement appropriate preventive measures and health education sessions to promote knowledge among the public. Thus, it is essential that these future doctors should have profound knowledge of this fatal infection.

According to the nation-wide survey done among the Malaysian young adults, the knowledge of HIV/AIDS is found to be lacking in modes of transmission, such as tattooing and piercing, sharing personal items, and breast-feeding from an infected mother⁵. The findings of this nationwide study indicate more education and intervention programs are needed to increase the level of knowledge and awareness of HIV/AIDS⁵.

To implement the development of more effective primary HIV/AIDS prevention programs for young adults in Malaysia, the country needs more educated persons or health care providers. Thus, the aim of this study is to assess the level of knowledge and attitudes of HIV/AIDS among a group of medical students who are the future doctors of the country.

Material and Method

This study was a cross sectional descriptive study conducted among the medical students at the School of Medicine, Universiti Malaysia Sabah in 2010. A specifically designed questionnaire was distributed to all the medical students from year three to year five of MD course on the first day of the semester after explaining the aims of the study and obtaining verbal consents from them. All potential responders were clearly advised that participation in this survey was voluntary and anonymous.

The students were given 30 minutes to respond the questionnaires which consisted of three parts. Part one was personal data (excluding names) and demographic characteristics, part two was knowledge about HIV/AIDS infection, mainly focusing on various modes of transmission, high risk behaviours and preventive measures. The third part was to assess their attitudes regarding HIV/AIDS infected persons, sexual behaviors and condom usage as well as sex education. The collected data were compiled and analyzed using the Statistical Package for Social Sciences (SPSS) version 16.0.

Results

Out of 160 questionnaires distributed, a total of 155 students responded with a response rate of 96.9%. The participants were 69 males (44.5%) and 86 females (55.5%) with the age ranging from 19 to 25 years. Majority of the students were Chinese (41.3%) and Malay (39.3%) followed by Indians and other races constituting 9.7% each. Most of the students were Muslims (42.6%) and Buddhists (30.3%), with Christians, Hindu, Taoist and other religions being 14.2%, 7.7%, 3.9% and 1.3% respectively.

The majority of the students gave correct responses regarding the various methods of transmission of HIV/AIDS infection whereas only 94 (60.6%) had knowledge that HIV can be transmitted via kissing an infected person in the presence of oral ulcer. (Table 1)

Concerning mother to child transmission of HIV/AIDS infection, 112 students (72.3%) believed it is mainly in-utero, 142 (91.6%) responded at the time of birth whereas only 101 (65.2%) realized the transmission through breast milk. (Figure 1)

Intravenous drug users, homosexuals and persons having multiple sexual partners were recognized as high risk groups for HIV/AIDS infection by most of the students. However, only 12(7.7%) and 27(17.4%) believed singles and youth as high risk population respectively. (Table 2)

Almost all the students were aware of the preventive measures such as screening of blood and blood products (98.1%) and use of disposable syringes (99.4%). The ineffectiveness of handwashing and use of facial masks in the prevention of HIV/AIDS transmission were recognized by 88.4% and 84.5% respectively. 146 students (94.2%) had knowledge that HIV transmission can be reduced by condom usage but only 69 students (44.5%) responded correctly the effectiveness of condoms. (Table 3)

Most of the respondents disagree with the beliefs that HIV infected persons are dishonorable (73.5%), have bad sexual habits (63.2%) or have extra-marital affairs (63.6%). Showing no sympathy towards HIV/AIDS patients and the concept of unworthy resource allocation for these persons were not acceptable by 83.2% and 90.3% of participants respectively. 153 students (98.7%) strongly believed that sex education sessions were important in reducing the prevalence of HIV/AIDS infection. (Table 4)

Regarding various sexual behaviours, 43.2% and 35.5% approved for masturbation and oral sex respectively while 78.7% and 86.5% disagreed for anal sex and sex with changing partner respectively. (Figure 2)

In this study, 88 respondents (56.8%) agree for condom usage with every sexual encounter whereas 1 student believed that condom should never be used. Most of them agreed for easy availability of condoms (76.1%) and importance of knowledge on correct condom usage (91%). (Table 5)

Discussion

This study focuses on the medical students of 19-25 years of age. The knowledge and attitudes of this population play a major role in the health care system of a country as they are the future health care providers who would be responsible for imparting their knowledge and educating the public regarding HIV/AIDS information, modes of disease transmission, high risk sexual behaviours as well as effective preventive measures.

In this study, all the respondents recognized the major routes of transmission of HIV/AIDS infection such as transfusion of infected blood and blood products, unprotected sexual intercourse with an infected person. Similar finding is noted among the students of Caribbean medical school, where 92.6% had correct knowledge on various routes of transmission⁶.

The great majority also knew that HIV is not transmitted by sharing utensils, close physical contact like hugging, handshaking and contact through saliva or sweat. This finding is consistent with nationwide survey among the Malaysian young adults in which the proportion of correct responses are casual

contacts (90.8%), sitting on public toilets (90.5%), and using public swimming pool (89.7%)⁵.

A study done among the general population of United States of America indicated that responses of people with less education are less likely to be correct than well educated persons⁷. Therefore, it can be expected in advance that medical students would have better knowledge and the responses are more likely to be correct.

Surprisingly, in this study, we noted the weakness of students' knowledge concerning mother to child transmission. Even though the majority realized the transmission at the time of birth, a substantial proportion had misperception that transmission is mainly in utero. The more alarming finding is that only 65.2% of the students had the knowledge of transmission through breast milk. This is in contradiction with our expected result of higher proportion of correct responses among the medical students compared to the young adults. According to the survey among the Malaysian young adults, 54.8% acknowledged transmission by breast-feeding from an infected mother⁵. In a study done among the 1st and 2nd year MBBS students at the Medical College Baroda, 29% were unaware that HIV/AIDS could be transmitted through breast feeding⁸. Similar result of poor knowledge among the health related personals was mentioned in a study among the traditional birth attendants in Nigeria, in which 62% recognized breastfeeding as a route of transmission while only 31.5% mentioned delivery as a possible method of transmission⁹.

Another area of weakness in knowledge of HIV transmission in our study is kissing an infected person in the presence of an oral ulcer where just 60.6% of the medical students gave the correct response. A study done among London and Cambridge medical students also

showed limited factual knowledge despite having completed genitourinary medicine attachment¹⁰.

Majority of the students in our study acknowledged intravenous drug users, homosexuals and those with multiple sexual partners as the high risk population for HIV infection whereas only a few categorized singles and youth as having more chance of acquiring the infection.

Encouraging and satisfactory response concerning major preventive measures such as screening of blood and blood products, use of disposable needles and condoms were reflected in our study. However, it was also a matter of concern that only 44.5% answered the effectiveness of condoms correctly while 49% were unsure of the extent of prevention of HIV transmission by the use of condom. In a study conducted among high school students in Northwest Ethiopia, abstinence, faithfulness to one's partner and use of condom as means to prevent transmission of HIV was responded by 84.1%, 60.4% and 41.8% respectively¹¹.

Negative attitudes towards people living with HIV/AIDS (PLHA) were noted among the senior school students in Iran. Majority of the students believed that PLHA should be isolated in designated institutions; they were deserved to death and should not receive care¹². No such negative attitudes were presented in our study. Most of the medical students disagree with the beliefs that PLHA were dishonorable, had bad sexual habits or extramarital affairs. 83.2% in our study disapproved the concept of no sympathy towards PLHA. Similar finding is seen in Rahnama's study done in Universiti Putra Malaysia where the mean attitude score was 24.09 out of a maximum score of 35 showing a favorable attitude on HIV/AIDS among the Malaysian university students¹³. Overall attitudes towards issues concerning HIV/AIDS demonstrated by medical and

allied health students were also high in an Indian study¹⁴.

Almost all of the respondents in our study agreed for health education sessions to reduce the number of HIV/AIDS infected persons. This reflects the positive attitude of the students for retarding HIV transmission among the community and reducing the number of PLHA in the country.

In response to questions on various sexual behaviours, 43.2% and 35.5% in our study agree for masturbation and oral sex respectively whereas the majority disagreed for anal sex and sex with changing partners.

Although an unsatisfactory response about knowledge on effectiveness of condom in prevention of HIV/AIDS is reflected in our study, the attitude concerning condom usage is encouraging. Majority agreed that all sexually active persons should know the correct usage of condoms and the condoms should be easily available. 56.8% responded that condom must be used on every sexual encounter; however, there was one student who believed that condom should never be used. Similar report is seen in a study in India, where 80% believed that condoms should be easily available and 90% agreed for condom usage in prevention of HIV transmission¹⁵. In our study, though the overall attitude is satisfactory, there are areas of weakness that need to be emphasized on condom usage among the medical students.

Knowledge and attitude about HIV/AIDS is crucial for health care professionals because of increasing prevalence of this infection. Our study reveals lack of awareness of some areas especially on breast feeding and effectiveness of condoms even among the medical students. This indicates a strong need for HIV/AIDS related education from the very beginning of the medical profession. This will help to

improve the student's knowledge and demystify their misconceptions.

Conclusion

Even among the medical students, the knowledge of mother to child transmission of HIV through breast feeding is still weak indicating this is the most important aspect that needs to be emphasized and modified in the future medical curriculum for better health care services and education to the public.

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Conflict of Interest: None declared.

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Table 1: Knowledge on mode of transmission of HIV/AIDS infection (n= 155)

| | Yes | No | Don't know |
|---|------------|------------|------------|
| Sexual Intercourse | 155 (100%) | 0 (0%) | 0 (0%) |
| Blood Transfusion | 155 (100%) | 0 (0%) | 0 (0%) |
| Close physical contact e.g. hugging, handshaking | 12(7.7%) | 133(85.8%) | 10(6.5%) |
| Contact with infected sweat, saliva and intact skin | 8(5.2%) | 142(91.6%) | 5(3.2%) |
| Sharing of utensils | 4(2.6%) | 141(91%) | 10(6.4%) |
| Kissing when oral ulcer is present | 94(60.6%) | 48(31%) | 13(8.4%) |

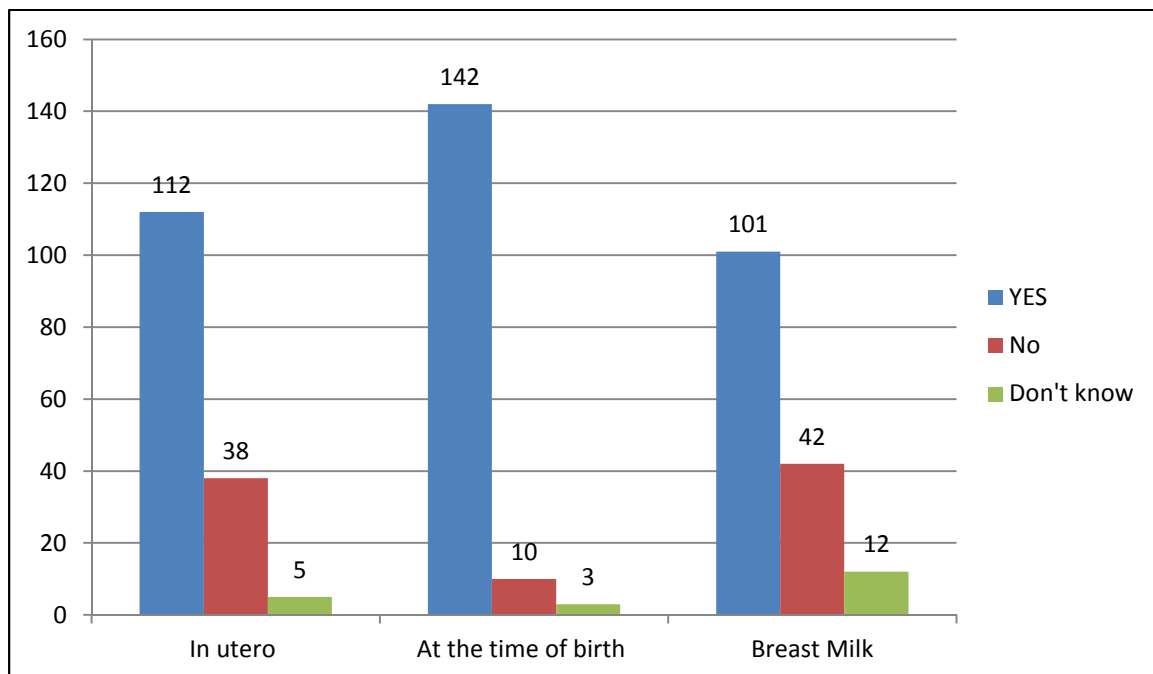


Figure 1: Knowledge on mother to child transmission of HIV/AIDS infection

Table 2: Knowledge on high risk population for HIV/AIDS infection (n= 155)

| | Yes | No | Don't know |
|--------------------------|------------|-------------|------------|
| Singles | 12(7.7%) | 132(85.2%) | 11 (7.1%) |
| Youth and adolescents | 27(17.4%) | 117 (75.5%) | 11 (7.1%) |
| Intravenous Drug Users | 154(99.4%) | 1(0.6%) | 0(0%) |
| Homosexuals | 146(94.2%) | 6(3.9%) | 3(1.9%) |
| Multiple sexual partners | 155(100%) | 0(0%) | 0(0%) |

Table 3: Knowledge on preventive measures of HIV/AIDS infection (n= 155)

| | Yes | No | Don't know |
|---------------------------------------|------------|------------|------------|
| Condom | 146(94.2%) | 7(4.5%) | 2 (1.3%) |
| Effectiveness of condoms (60-96%) | 69(44.5%) | 10 (6.5%) | 76 (49.0%) |
| Screening of blood and blood products | 152(98.1%) | 3(1.9%) | 0(0%) |
| Use of disposable syringes | 154(99.4%) | 1(0.6%) | 0(0%) |
| Hand washing | 8(5.2%) | 137(88.4%) | 10(6.5%) |
| Use of facial masks | 15(9.7%) | 131(84.5%) | 9(5.8%) |

Table 4: Attitudes on HIV/AIDS infection (n= 155)

| | Agree | Disagree | Don't know |
|---|------------|-------------|------------|
| HIV positive persons are dishonorable | 29(18.7%) | 114 (73.5%) | 12 (7.7%) |
| HIV positive persons have bad sexual habits | 43(27.7%) | 98(63.2%) | 14 (9.0%) |
| HIV positive persons have extra-marital affairs | 44(28.6%) | 98(63.6%) | 12(7.8%) |
| No sympathy towards HIV/AIDS patients | 11(7.1%) | 129(83.2%) | 15(9.7%) |
| It is not worth spending to treat HIV/AIDS patients | 10(6.5%) | 140(90.3%) | 5(3.2%) |
| Sex education sessions will reduce the number of HIV infected persons | 153(98.7%) | 2(1.3%) | 0(0%) |

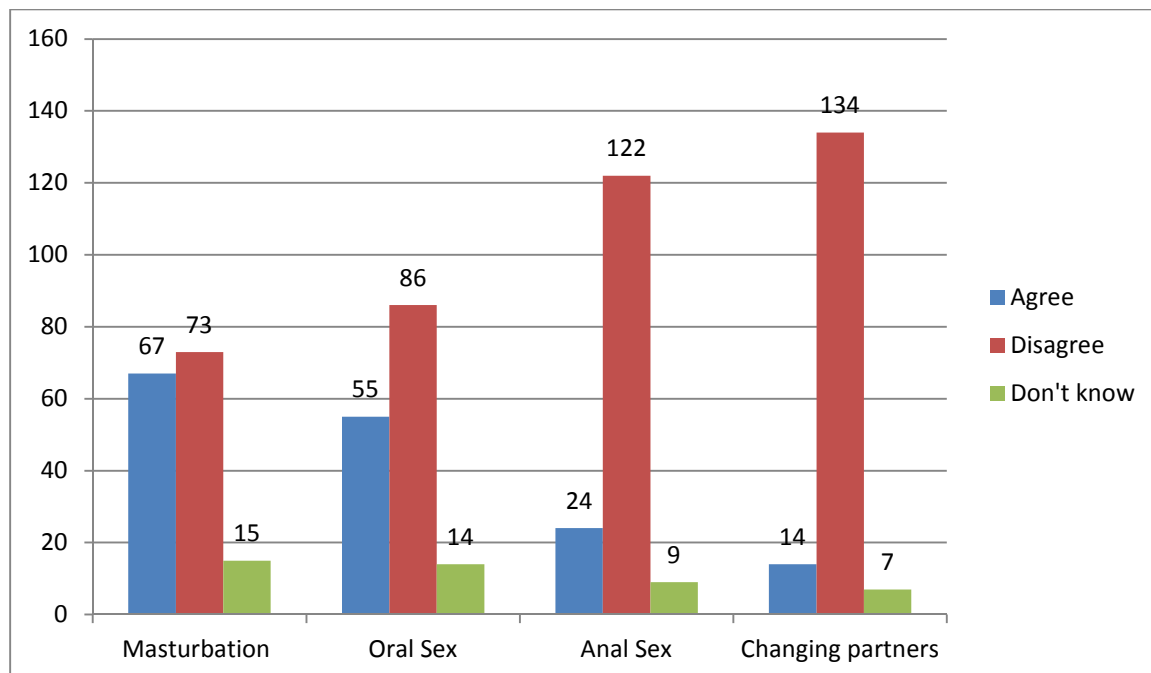


Figure 2: Attitude towards various sexual behaviours

Table 5: Attitudes on condom usage (n= 155)

| | Agree | Disagree | Don't know |
|--|------------|------------|------------|
| Condom must be used on any sexual encounter | 88(56.8%) | 52(33.5%) | 15(9.7%) |
| Condoms should never be used | 1(0.6%) | 146(94.2%) | 8(5.2%) |
| Condoms should be easily available | 118(76.1%) | 28(18.1%) | 9 (5.8%) |
| Sexually active persons should know about correct condom usage | 141(91.0%) | 6(3.9%) | 8 (5.2%) |