

Assessment of the level of awareness on AIDS/HIV in Johor, Malaysia

***Nagarajan Srinivasan, Rajan Ethiraj Ugandar.**

Faculty of Pharmacy, Asia Metropolitan University, 43200 Cheras, Malaysia.

*** Corresponding author: Nagarajan Srinivasan**

E-mail id: n.srinivasan@masterskill.edu.my

ABSTRACT

The awareness of HIV/AIDS is important to reduce the mortality and morbidity rate. This is because, figures in December 2010 showed that there are 91, 362 cases of HIV infections and 16, 352 cases of AIDS in Malaysia. The numbers increased a year later. This affects not only the patients' quality of life, but also impose extra spending to the country. Hence, a cross-sectional survey was conducted to assess the level of awareness about HIV/AIDS among the population of Johor, Malaysia. A total of 396 respondents took part in this survey. They were evaluated based on questionnaires to assess the level of awareness of AIDS/HIV among them. Data collected were analyzed using SPSS version 17.0 software. The data indicated that AIDS/ HIV knowledge among the respondents was moderately high, with a mean mark of 37.9 of 48 points. Most were aware that high risk behaviors such as needle-sharing, sexual intercourse and blood transfusion could transmit the disease. However, most were still unaware that having tattoo or body piercing and also sharing personal items could lead to infection. More than half of the respondents believed that washing genital area with soap after intercourse could prevent the disease transmission. There was also misconception that if a pregnant woman becomes infected, the child will definitely be infected. The majority knew that there is no cure for AIDS/ HIV and some thought that there is difference between HIV and AIDS. The level of awareness of AIDS/ HIV among the Johor population was successfully evaluated.

Key words: AIDS, HIV, Mode of transmission of HIV.

INTRODUCTION

Human Immunodeficiency Virus (HIV) has claimed more than 25 million lives over the past three decades and so it continues to be a major global public health issue. In year 2011, there were approximately 34 million people living with HIV (WHO, 2012). There is no cure and no vaccine for HIV infection, but effective treatment with antiretroviral drugs can control the virus so that people with HIV can enjoy healthy and productive lives (NYSDH, 2010). The most advanced stage of HIV infection is Acquired Immunodeficiency Syndrome (AIDS), which can take from 2 to 15 years to develop depending on the

individual. AIDS is defined by the development of certain cancers, infections, or other severe clinical manifestations (WHO,2012). There were approximately 30.1 million adults living with HIV, of which 16.8 million were women, whereas children under 15 years old make up 3.4 million in year 2010. There were 2.7 million people newly infected with HIV, and 1.8 million people died of AIDS in year 2010. There were over 7000 new HIV infections a day in 2010; of which about 97% are in low and middle income countries (UNAIDS, 2011).

This shows that people still lack knowledge and often the tools they need to practice HIV-reduction

strategies such as the use of condom, and access to sterile needles for intravenous drug users (Rozaidah, 2006). Poverty, gender inequality, inequality in health and the education system, discrimination against marginalized people, and unequal resource pathways all affect the HIV response (UNAIDS, 2010). Some people are not even aware that they are infected with HIV; many who do learn their serostatus are diagnosed in the late stages of the disease and their disease progress to AIDS within a year of their first positive HIV test (Renee *et al.*, 2011). HIV/AIDS was nonexistent in Malaysia until 1986. Drug abuse is a serious problem in Malaysia. Injecting drug users (IDUs) are the largest group to transmit HIV either through needle sharing or sexual activity. A study by the Cabinet Subcommittee for the Treatment and Rehabilitation of Drug Users showed that 77.6% of the IDU were sexually active and only 18.7% of them use a condom during sexual intercourse. A further issue is the absence of comprehensive prevention programs to empower all women to negotiate for safe sex, emphasize male responsibility, and strengthen antenatal testing to protect women against HIV infection (Rozaidah, 2006). Furthermore, research addressing awareness of the need for improved sexually transmitted disease (STD) control, the importance of timely healthcare seeking, and compliance with treatment and implementation of partner referral could be useful (Lawrence, 2002).

However, since 1995, antiretroviral (ARV) therapy has saved 14 million lives in low and middle income countries. Fewer deaths from AIDS-related illnesses has transformed societies as more people, regaining their health are returning to work and taking care of their families. However, the gap between people who can access treatment and people in need is still very large, nearly 46% (UNAIDS, 2012). In Malaysia, free ARV drugs are given to all pregnant mothers who are HIV-positive (Lawrence, 2002). Furthermore the public may undergo HIV screening test at the clinics and government hospitals for free (MOH, 2011). Highly Active Antiretroviral Therapy (HAART) which is an aggressive treatment regimen uses a combination of three or more different drugs to suppress HIV viral replication and progression of the disease (Mark, 2009). HAART changed the face of AIDS and it boosted the immune system for the

majority who takes up treatment. There is evidence that transmission of HIV is less likely among those with low viral load (Susan, 2003). Treatments have also been effective in reducing mother-to-child (vertical) transmission of HIV (UNICEF, 2012).

In addition, evidence indicates that risk reduction counseling can be effective. For example, a meta-analysis reported that counseling resulted in a 26% decrease in unprotected anal sex among men having sex with men. Studies also reported that counseling produced a 30% increase in risk reduction skills among injection drug users and a 16% decrease in sexual risk behaviors (Carlos *et al.*, 2003). Thus, it is important to improve community-level understanding of HIV as a sexually transmitted infection (STI) and of improving our public health interventions that aim to delay the onset of sex, reduce numbers of sex partners, and increase safer-sex behaviors, including consistent and correct condom use (Madeline *et al.*, 2009). On the other hand, globally, tuberculosis (TB) is the leading cause of death among persons with HIV infection (CDC, 2011). Of the estimated 34 million people living with HIV, about one-third is estimated to have concomitant latent infection with *Mycobacterium tuberculosis* (UNICEF, 2011). Therefore, routine screening for TB disease is recommended for all people with HIV to facilitate early TB diagnosis and safe initiation of ART and isoniazid preventive therapy (IPT) (Cain, 2009). Besides TB, persons with HIV infection are disproportionately affected by viral hepatitis; about one-third of HIV –infected patients are co-infected with hepatitis B or hepatitis C. Viral hepatitis progresses faster among persons with HIV, and persons who are infected with both viruses experience greater liver-related health problems than those without HIV infection. These people are also at increased risk for serious, life-threatening complications. Thus, vaccination is against hepatitis is recommended so as to prevent complication of HIV management (CDC, 2013).

METHODS

Study Design

A cross-sectional study was conducted across the areas of Johor state in Malaysia.

Sample selection

Participants were randomly selected from few government schools and from the public. They were required to answer all the questions in the questionnaires provided. Two marks were allocated for each of the correct answer and one mark for incorrect or unanswered questions.

Questionnaire

The questionnaires were divided into four sections: 1, 2, 3 and 4. Section 1 required the participants to fill in their demographic characteristics, whereas section 2 consists of 7 general knowledge questions. However, out of the 7 questions, only 5 will be evaluated by marks because the other 2 questions have no right or wrong answers. Section 3 consists of 14 questions based on modes of transmission of AIDS/ HIV and section 4 consists of 5 questions about the prevention methods of HIV.

Data Analysis

Statistical Package of Social Science (SPSS) version 17.0 was used for data management and analysis (Anwar *et al.*, 2010). Descriptive statistics including frequencies, means, medians, and standard deviations were performed to give general descriptions of the data. T-test and ANOVA were performed to examine differences in knowledge scores and demographic variables. The level for statistical significance was set at $P < .05$

RESULTS

The total number of respondents who completed the survey was 396.

Characteristics of Respondents

The majority of respondents are adolescents, they make up 53.8% of the overall respondents (Table 1). This is followed by adults group, 42% and children 3.8%. 60.3% of the respondents consists of female. 52% of the respondents consists of Chinese, followed by 42% Malay, others 4%, and Indian 2%. Buddhism make up 46% of the religion embraced by them, followed by Islam 42%, Christian 9%, Hinduism 2% and others 1%. The majority of the respondents are having secondary school level of education, 67%,

followed by college/ university level, 26%, primary school % and 2% with no formal schooling. 60.3% are currently student. 31% of the respondents are having an income range of RM1000-RM2000. This is followed by 27% having less than RM1000 income per month, 22% within RM2001-RM3000, 10% with income range of RM3001-RM4000, 7% with income above RM5000 and 3% within the range of RM4001-RM5000. Most of the respondents are not married, they make up 87% of the total respondents. The respondents are mostly urban folk, and they make up 78.4% of the total respondents.

Table 2 shows that the majority of respondents were aware that there is no cure for HIV/ AIDS (84.7%), and a smaller majority knew that there is difference between HIV and AIDS (79.6%), and 73.4% were also aware that free HIV testing is available in all government hospitals in Malaysia. However, 45.5% were confused that a negative blood test indicates that a person is completely free from HIV virus. Besides, there was also confusion on whether a child will be born with HIV if the mother is infected with HIV, as only 20.6% answered correctly for this question. 83.2% of the respondents were aware of the services available in case they need help or advice on issues regarding AIDS/ HIV. The services may include HIV testing, counseling and treatment. Television is by far their main source (48.7%), followed by newspaper (18.6%), internet 14.8%, friends 4.8%, radio 4%, printed material from MOH 3.3%, PROSTAR 2.8% and family 2.5%.

Modes of transmission

Based on Table 3, most of the respondents knew that HIV is transmitted via sharing needles with HIV-infected person (86.9%), having sexual intercourse with HIV-infected person (84.4%), transfusion of HIV-infected blood or receiving HIV-infected organ, having sex with multiple sexual partners with unknown HIV status (83.4%) and from HIV-positive mother to her fetus (86.9%). Besides, they were aware that casual contacts such as hugging or kissing (83.9%) would not transmit the virus. However, a smaller majority were aware of other modes of transmission such as sharing personal items such as shaving blades (59.5%), and breastfeeding from HIV-infected mother (60.3%). A small majority were also aware that mosquito bites (72.4%), kissing a HIV-

infected person (61.1%), sharing a meal with HIV-infected person (79.4%), using public swimming pool (79.1%), sitting on a public toilet (77.9%) can cause HIV transmission. Transmission via tattoo or body piercing was the mode of transmission having the highest percentage of respondents (42.7%) with incorrect answer.

Prevention of HIV/ AIDS

Table 4 shows that a large majority of respondents were aware of the HIV prevention measures which

were to avoid sharing needles and syringes (93.5%), having sex with only one faithful, uninfected partner (92.7%), and also by using condom during sexual intercourse (83.9%). A smaller majority of them knew that avoid touching HIV-positive people will not help to prevent transmission (71.9%) and most of them thought that by washing genital area with soap after sexual intercourse can help prevention of HIV (49.2%).

Table 1: Sociodemographic characteristics of the respondents (N=396)

Characteristics	Number of Respondents	Percentage (%)
Age		
Child	15	3.8
Adolescent	214	53.8
Adult	167	42
Gender		
Male	156	39.2
Female	240	60.3
Ethnicity		
Malay	166	41.7
Chinese	207	52.0
Indian	7	1.8
Others	16	4.0
Religion		
Islam	166	41.7
Buddhism	184	46.2
Christian	35	8.8
Hindu	8	2.0
Others	3	0.8

Average household income per month

less than RM1000	105	26.4
RM1000-RM2000	122	30.7
RM2001-RM3000	88	22.1
RM3001-RM4000	40	10.1
RM4001-RM5000	13	3.3
above RM5000	28	7.0

Marital status		
Not Married	345	86.7
Married	50	12.6
Divorced	1	0.3

Locality		
Urban	312	78.4
Rural	84	21.1

Table 2: Correct Answers on General Knowledge

General knowledge	Correct Answer	Number of Respondents (% Correct answer)
Is there any difference between HIV and AIDS	Yes	317 (79.6)
There is a cure for HIV/ AIDS?	No	337 (84.7)
Is a negative blood test indicates that a person is completely free from HIV virus?	No	181 (45.5)
If a pregnant women becomes infected with HIV, her child will also be born with HIV	No	82 (20.6)
Is free HIV testing available in all government hospitals in Malaysia?	Yes	292 (73.4)

Table 3: Correct Answers on Modes of Transmission

Modes of Transmission	Correct Answer	Number of Respondents (% Correct answer)
Sharing needles with HIV-infected person	Yes	346 (86.9)
Having sexual intercourse with HIV-infected person	Yes	336 (84.4)
Transfusion of HIV-infected blood or receiving HIV-infected organ	Yes	345 (86.7)
Having sex with multiple sexual partners with unknown HIV status	Yes	332 (83.4)
From an HIV-positive mother to her fetus	Yes	346 (86.9)
Sharing personal items such as shaving blades	Yes	237 (59.5)
Breast-feeding from an HIV-infected mother	Yes	240 (60.3)
Mosquito bites	No	288 (72.4)
Kissing an HIV-infected person	No	243 (61.1)
Having tattoo or body piercing	Yes	170 (42.7)
Sharing a meal with an HIV-infected person	No	316 (79.4)
Using a public swimming pool	No	315 (79.1)
Sitting on a public toilet	No	310 (77.9)
Casual contacts (hugging or touching) with an HIV-infected person	No	334 (83.9)

Table 4: Correct Answers on Prevention of HIV

Prevention of HIV	Correct Answer	Number of Respondents (% CorrectAnswer)
Do not share needles and syringes	Yes	372 (93.5)
Having sex with only one faithful, uninfected partner	Yes	369 (92.7)
Use condom during sexual intercourse	Yes	334 (83.9)
Wash genital area with soap after sexual intercourse	No	196 (49.2)
Avoid touching HIV-positive people	No	286 (71.9)

DISCUSSION

The total number of respondents who completed the questionnaire was 396. There were altogether 35 questions in the questionnaires including the respondents' demographic characteristics. Out of the 35 questions, only 24 questions were given marks. The correct answer was allocated 2 marks, whereas the incorrect answer was given 1 mark. Hence, the highest the total scores ranged from 24 to 48 marks. The mean ($\pm$ SD) of the total scores was found to be 37.9 ± 2.8 .

The results showed that the majority of respondents were aware that there is no cure for HIV/ AIDS (84.7%). This shows that prevention towards HIV/ AIDS is very important, and therefore, knowledge on the precautions and modes of transmission should be at hand. The rest of the respondents who thought that there is a cure for the disease might mistake that the treatments available such as antiretroviral therapy (ARV) can cure the disease. However, the fact is that treatments available can only help to prolong life and not to treat it completely. In fact, ART has substantially reduced the morbidity and mortality rates related to HIV/ AIDS worldwide (Hogg, 1997). A smaller majority knew that there is difference between HIV and AIDS (79.6%) and 73.4% were also aware that free HIV testing is available in all government hospitals in Malaysia. However, 45.5% were confused that a negative blood test indicates that a person is completely free from HIV virus. Besides, there was also confusion on whether a child will be born with HIV if the mother is infected with HIV, as only 20.6% answered correctly for this question. 83.2% of the respondents were aware of the services available in case they need help or advice on issues regarding AIDS/ HIV. The examples of the services

may include HIV testing, counseling and treatment. Television was their main source of information (48.7%), followed by newspaper (18.6%), internet 14.8%, friends 4.8%, radio 4%, printed material from MOH 3.3%, PROSTAR 2.8% and family 2.5%. The study is consistent with findings from other studies that television, and newspaper are the primary source of information (Bertrand *et al.*, 2006).

Based on questions about modes of transmission, most of the respondents knew that HIV is transmitted via sharing needles with HIV-infected person (86.9%), having sexual intercourse with HIV-infected person (84.4%), transfusion of HIV-infected blood or receiving HIV-infected organ, having sex with multiple sexual partners with unknown HIV status (83.4%) and from HIV-positive mother to her fetus (86.9%). Besides, they were aware that casual contacts such as hugging or kissing (83.9%) would not transmit the virus. However, a smaller majority were aware of other modes of transmission such as sharing personal items such as shaving blades (59.5%), and breastfeeding from HIV-infected mother (60.3%). A small majority were also aware that mosquito bites (72.4%), kissing a HIV-infected person (61.1%), sharing a meal with HIV-infected person (79.4%), using public swimming pool (79.1%), sitting on a public toilet (77.9%) can cause HIV transmission. Transmission via tattoo or body piercing was the mode of transmission having the highest percentage of respondents (42.7%) with incorrect answer. The results showed that the majority were aware that HIV is transmitted high-risk behaviors such as having sex (Zulkifli *et al.*, 2002).

A large majority of respondents were aware of the HIV prevention measures which were to avoid sharing needles and syringes (93.5%), having sex

with only one faithful, uninfected partner (92.7%), (83.9%). A smaller majority of them knew that avoid touching HIV-positive people will not help to prevent transmission (71.9%) and most of them thought that by washing genital area with soap after sexual intercourse can help prevention of HIV (49.2%).

The score ranged from 24 to 48 marks, and the highest score was 46 while the lowest score was 31. The mean ($\pm$ SD) of the total scores was found to be 37.9 ± 2.8 . People are more knowledgeable nowadays with the advent of technology. They no longer rely solely on mainstream media but also internet and other resources for information. T- test was used to analyze the association between marks and gender, as well as marks and locality. The mean ($\pm$ SD) marks of males were found to be 38.3 ± 2.5 and that of females were 37.6 ± 2.9 . This indicates that males fared better than females and the data showed significant difference with $p=0.025$ in the marks between the two groups. This is consistent with studies among college students from China (Li *et al.*, 2004). Besides gender, there is also significant difference between the marks of urban and rural respondents. This is represented by a p value of 0.007. The mean ($\pm$ SD) marks of rural respondents were 38.5 ± 2.4 , compared to urban respondents which were having 37.7 ± 2.8 marks. This shows that rural people do not lag behind in acquiring knowledge regarding HIV/ AIDS, and they are more informative than their urban counterparts. This finding is similar to reports from Wong *et al.*, 2008.---The results also brought to light that the marks among the three age groups differed significantly, with $p=0.008$. This is especially so for the mean marks between adolescents and adults. The mean ($\pm$ SD) marks for adults is 38.4 ± 2.4 compared to that of adolescents with mean marks of 37.5 ± 3.0 . The significance value, p is found to be 0.005 when comparing the two groups of respondents. In this case, adults are more knowledgeable probably could be due to higher awareness about the disease.

In terms of the level of education, the data shows that there is significant difference in the mean ($\pm$ SD) marks when comparing groups between secondary school level and those without formal education

and also by using condom during sexual intercourse ($p=0.034$). In addition, there is also significant difference between those without formal schooling and those with college or university level of education ($p=0.05$). This may be because of the small number of respondents, 2.3% who never received formal schooling, compared to a large % of respondents having secondary level of education, 66.8%. Hence, more number of samples from those without formal schooling should be collected in future. On the other hand, this finding may also indicate that they obtained sufficient knowledge regarding AIDS through resources other than formal education. For example, they may get the information through watching television, reading newspaper, listening to radio, through printed materials from MOH, through internet and also from friends and family members.

CONCLUSION

Based on the research study, the general knowledge, knowledge on modes of transmission, and also prevention of HIV/ AIDS were successfully evaluated. In conclusion, more efforts can be done to achieve the global target of zero transmission, zero new infections, and zero mortality on AIDS.

Implications for future research

The findings from the survey could be an important guide towards future studies. Education, mass media and information technology as well as government and non-governmental organizations could work hand in hand to disseminate accurate information and eradicate social stigma so that the population as a whole can have a better quality of life.

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