



Assessing of HIV Knowledge in Comparison to Urban and Rural in Malaysia: Findings of National Health Morbidity Survey in 2020

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ABSTRACT

Introduction: Human Immunodeficiency Virus (HIV) is a retrovirus that targets the CD4⁺ of human T-lymphocyte cells of the immune system. The weakening immune system causes susceptibility to multiple infective diseases and cancers. This study is aimed to determinant the knowledge regarding HIV/AIDS and to identify the associated factors of the HIV/AIDS knowledge among the urban and rural Malaysian young people.

Methods: Data was collected using Computer Assisted Telephone Interviewing (CATI) method. HIV knowledge was assessed using the UNGASS indicators, which contain five questions on HIV prevention and transmission. There were two questions regarding the association between HIV transmission with sexual practice and behaviour. The remainder was one question, each related to insect bite, meal sharing, and knowledge about the physical appearance of someone with HIV infection. Respondents who correctly answer all five questions were considered to have adequate knowledge about HIV/AIDS.

Results: The result from a questionnaire revealed the prevalence of the young people HIV/AIDS knowledge in urban area was 14.7% (95% CI: 9.96, 21.28) whereas in rural area was 10.9% (95% CI: 6.83, 16.89) in 2020. The results revealed significant difference of misconceptions on healthy-looking person have HIV where urban was 71.7% (95% CI: 66.46, 76.37) and rural was 59.8% (95% CI: 56.05, 63.41). Furthermore, there are significant difference of misconceptions on person get HIV by sharing food with someone who is infected whereas urban was 64.8% (95% CI: 60.48, 68.98) while rural was 52.6% (95% CI: 48.67, 56.50).

Conclusion: The findings from this survey have important implications for the development of primary HIV/AIDS prevention programs and HIV educational campaigns to increase knowledge and dispel misconceptions about HIV.

Keywords: HIV (Human Immunodeficiency Virus), AIDS (Acquired Immunodeficiency Syndrome); Misconception; Prevention; Campaign

Abbreviations: HIV: Human Immunodeficiency Virus; AIDS: Acquired Immunodeficiency Syndrome; WHO: World Health Organization

INTRODUCTION

Human Immunodeficiency Virus (HIV) is a retrovirus that targets CD4⁺ T-lymphocyte immune cells. The immune system's deterioration increases susceptibility to many infectious illnesses and malignancies. Infected individuals develop Acquired Immunodeficiency Syndrome as the disease advances over the years (AIDS). Multiple opportunistic infections (such as *Pneumocystis jirovecii*, Tuberculosis, generalised Candidiasis, and Cerebral Toxoplasmosis) and AIDS-related malignancies (such as

Kaposi's sarcoma) are defining characteristics of AIDS. HIV is spread through bodily fluids such as blood, sperm, and vaginal secretions, as well as vertical transmission from mother to child during pregnancy or birth. It cannot be transmitted through kissing, shaking hands, sharing personal items, or consuming contaminated food or water [1].

The World Health Organization (WHO) estimated that at the end of 2019, 38 million people worldwide were living with HIV, 1.7 million were newly infected with the disease, and 690,000 died

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from HIV-related disorders [1]. According to the 2019 Malaysian Country Progress Report on HIV/AIDS, the total number of HIV and AIDS cases reported was 118,883 and 25,925, respectively [2]. Health promotion involving HIV/AIDS knowledge has served as a key measure for comparing and assessing national HIV/AIDS preventive programmes[3]. During the United Nations General Assembly Special Session (UNGASS) on HIV/AIDS in June 2001, 189 countries declared their commitment to combating the spread of the pandemic [4].

A person with insufficient HIV/AIDS knowledge and awareness is more susceptible to contracting the disease and may spread the epidemic throughout the population [5]. Numerous global HIV knowledge prevalence studies have been conducted. 67% of Bolivians were observed to have inadequate understanding, compared to less than half (44.7% of South Africans) and 51.9% of unmarried young women in Uganda [6-8]. In 2006, a study of 1,075 young Malaysian adults aged 15 to 24 years revealed intermediate HIV/AIDS awareness, with a mean score of 20.1 out of 32 [9]. Only fifty percent of secondary school students in Malaysia who responded to an online survey utilising the UNGASS indicators correctly identified both methods for preventing the sexual transmission of HIV and rejected main HIV transmission myths [2].

The main objective of this study is to determine the prevalence of adequate HIV knowledge in Malaysia. This study is specific to determinant the knowledge regarding HIV/AIDS and to identify the associated factors of the HIV/AIDS knowledge among the urban and rural Malaysian young people.

MATERIALS AND METHODS

Study design

Computer-Assisted Telephone Interviewing (CATI) was used to collect data. Using the UNGASS indicators, which comprise five questions on HIV prevention and transmission, an evaluation of HIV knowledge, was conducted. There were two questions concerning the relationship between HIV transmission and sexual behaviour and practise. The remaining questions dealt with insect bites, food sharing, and understanding of the physical appearance of a person infected with HIV. Respondents who answered all five

questions correctly were deemed to have sufficient understanding of HIV/AIDS.

Data analysis

Data were cleaned and error-checked before coding using double data input in the Statistical Package for the Social Sciences (SPSS) (v.26) programme. Participants were recruited from multiple states; hence the SPSS survey software was utilised to adjust clustering effects. Data were reported as relative frequencies and 95% Confidence Intervals (CI) for categorical variables, and as means and 95% CI for quantitative variables. Using chi-square tests, the participants of various age groups' knowledge, attitudes, and behaviours were compared. All P-values were two-sided, and a value of less than 5% was considered statistically significant.

RESULTS

Prevalence of adequate HIV knowledge among respondents aged 13 years and above

Overall, the prevalence of adequate HIV knowledge was 22.6% (95% CI: 19.67-25.85) among general population aged 13 years and above. Respondents living in urban areas had a significantly higher likelihood of adequate HIV knowledge (24.9% (95% CI: 21.40-28.78)) than their rural counterparts (14.8% (95% CI: 11.82-18.42)). Meanwhile, the prevalence of adequate HIV knowledge was similar among males (22.7% (95% CI: 19.46-26.34)) and females (22.5% (95% CI: 18.9-26.54)). The age group of 40-44 years had the highest prevalence of adequate HIV knowledge (40.3% (95% CI: 32.19-49.05)), while the lowest prevalence was found among younger age group of 13-14 years (12.2% (95% CI: 6.29-22.31)). By ethnicity, Chinese respondents reported the highest prevalence of adequate HIV knowledge (32.3% (95% CI: 25.99-39.28)), followed by Malaysia (25.0% (95% CI: 22.47-27.77)) and other Bumiputeras (16.1% (95% CI: 11.39-22.18)). The prevalence of adequate HIV knowledge increased with increasing education level: primary education (12.5% (95% CI: 9.32-16.57)), secondary education (19.8% (95% CI: 17.06-22.96)), and tertiary education (36.5% (95% CI: 29.38-44.29)). Government employees showed a significantly higher prevalence of adequate HIV knowledge (43.2% (95% CI: 34.45-52.39)) compared to other occupational groups (Table 1).

Table 1: Prevalence of adequate HIV knowledge among respondents aged 13 years and above by sociodemographic characteristics.

Sociodemographic variables	Un weighed count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Malaysia	692	5856527	22.6	19.67	25.85
Location					
Urban	449	4983568	24.9	21.4	28.78
Rural	243	872959	14.8	11.82	18.42
Sex					
Male	325	3027947	22.7	19.46	26.34
Female	367	2828580	22.5	18.93	26.54
Age group					
Less than 15	20	173773	12.2	6.29	22.31
15-19	38	324356	13.5	8.26	21.22
20-24	55	409404	14.4	9.99	20.24
25-29	48	580112	16.4	10.56	24.64

30-34	93	818948	29.6	22.85	37.3
35-39	79	747573	27.9	19.01	39.01
40-44	109	829170	40.3	32.19	49.05
45-49	76	492502	28.4	18.3	41.25
50 and above	174	1480689	23	18.51	28.13
Ethnicity					
Malay	490	3134053	25	22.47	27.77
Chinese	80	1833777	32.3	25.99	39.28
Indian	16	-	-	-	-
Other Bumiputeras ^a	88	464566	16.1	11.39	22.18
Others	18	-	-	-	-
Citizenship					
Malaysian citizen	675	5648184	24.8	21.98	27.83
Non-Malaysia citizen	17	-	-	-	-
Education level					
No formal education	6	-	-	-	-
Primary education	80	690982	12.5	9.32	16.57
Secondary education	311	2239912	19.8	17.06	22.96
Tertiary education	295	2880538	36.5	29.38	44.29
Marital status^b					
Single	173	1697527	19.2	15.2	23.98
Married	470	3743496	24.5	21.02	28.34
Widow(er)/divorcee	49	415504	23.4	15.47	33.67
Occupation^c					
Government employee	119	822052	43.2	34.45	52.39
Private employee	186	2037681	23.2	16.7	31.33
Self employed	123	944476	26.1	20.98	32.02
Unpaid worker/homemaker/caregiver	101	649954	17.1	12.93	22.31
Student	77	672365	17.8	12.28	25.06
Not working (unemployed, health problem, old age, child and retiree)	84	707542	18.2	13.83	23.63

Note: ^aOther Bumiputeras includes Bumiputera Sabah, Bumiputera Sarawak and Orang Asli, ^bMarital status from 10 years old and above, ^cOccupation from 15 years old and above, N=3187

Proportion of correct response to each item of HIV knowledge among respondents aged 13 years and above

The question on “Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?” (Question 1) had the highest proportion of respondents who answered correctly (74.9% (95% CI: 69.52-79.67)) compared to other items. There was no significant difference across locality and age group (Table 2).

A total of 69.5% of respondents gave a correct response to the question, “Can a person reduce the risk of getting HIV by using a condom every time they have sex?” (Question 2). There was no significant difference across locality and age group (Table 3).

The question on “Can a healthy-looking person have HIV?” (Question 3) was correctly answered by 68.9% of respondents. A significantly higher proportion of respondents from urban areas

(71.7% (95% CI: 66.46-76.37)) answered this question correctly compared to respondents from rural areas (59.8% (95% CI: 56.05-63.41)). However, there was no significant difference observed between age groups (Table 4).

The question on “Can a person get HIV from mosquito bites?” (Question 4) had the second-highest proportion of being answered correctly by respondents (71.7% (95% CI: 68.79-74.37)). There was no significant difference across locality and age group (Table 5).

The proportion of respondents who answered the question “Can a person get HIV by sharing food with someone who is infected?” (Question 5) correctly was 62.0% (95% CI: 58.27-65.65). The proportion of respondents who gave a correct response to this question was significantly higher in urban areas (64.8% (95% CI: 60.46-68.98)) compared to their rural counterparts (52.6% (95% CI: 48.67-56.50)). No significant difference was observed between age groups (Table 6).

Table 2: Proportion of correct response to question 1: “Can the risk of HIV transmission be reduced by having sex with only one uninfected partner who has no other partners?”.

Sociodemographic variables	Un weighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Malaysia	2172	17708701	69.5	65.54	73.25
Location					
Urban	1230	13811288	70.4	65.28	75.1
Rural	942	3897412	66.5	63.48	69.48
Age group					
Less than 15	93	822524	58	47.81	67.46
15-19	159	1335344	55.5	47.22	63.48
20-24	188	1707788	60	51.05	68.42
25-29	209	2226463	63.4	53.69	72.2
30-34	251	2283377	82.6	77.62	86.67
35-39	237	1994388	75.5	67.96	81.77
40-44	221	1550947	75.4	67.56	81.93
45-49	191	1347970	79.6	70.33	86.57
50 and above	623	4439901	72.4	67.65	76.61

Note: (N=3172).

Table 3: Proportion of correct response to question 2: “Can a person reduce the risk of getting HIV by using a condom every time they have sex?”.

Sociodemographic variables	Un weighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Malaysia	2172	17708701	69.5	65.54	73.25
Location					
Urban	1230	13811288	70.4	65.28	75.1
Rural	942	3897412	66.5	63.48	69.48
Age group					
Less than 15	93	822524	58	47.81	67.46
15-19	159	1335344	55.5	47.22	63.48
20-24	188	1707788	60	51.05	68.42
25-29	209	2226463	63.4	53.69	72.2
30-34	251	2283377	82.6	77.62	86.67
35-39	237	1994388	75.5	67.96	81.77
40-44	221	1550947	75.4	67.56	81.93
45-49	191	1347970	79.6	70.33	86.57
50 and above	623	4439901	72.4	67.65	76.61

Note: (N=3155).

Table 4: Proportion of correct response to question 3: “Can a healthy-looking person have HIV?”.

Sociodemographic variables	Un weighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Malaysia	2142	17543340	68.9	64.88	72.73
Location					
Urban	1273	14042968	71.7	66.46	76.37
Rural	869	3500372	59.8	56.05	63.41
Age group					
Less than 15	93	924019	64.8	52.54	75.44
15-19	191	1649203	68.5	59.54	76.26
20-24	242	2118933	74.4	60.72	84.51
25-29	233	2347030	67.7	56.37	77.36
30-34	238	1929459	71.6	65.21	77.19
35-39	220	1916730	71.7	64.45	77.99
40-44	220	1652362	82.3	75.09	87.7
45-49	183	1128698	68.6	51.28	81.91
50 and above	522	3876906	61.7	57.87	65.46

Note: (N=3158)

Table 5: Proportion of correct response to question 4: “Can a person get HIV from mosquito bites?”.

Sociodemographic variables	Un weighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Malaysia	2271	18189480	71.7	68.79	74.37
Location					
Urban	1259	14087736	72	68.51	75.22
Rural	1012	4101744	70.6	65.78	74.99
Age group					
Less than 15	110	915573	64.8	46.07	79.88
15-19	206	1847092	76.7	70.62	81.87
20-24	222	1817111	64.3	54.88	72.71
25-29	230	2660335	77.4	69.75	83.64
30-34	235	1908963	69.2	61.91	75.67
35-39	243	2085754	78.8	72.94	83.65
40-44	229	1595546	78.4	71.34	84.18
45-49	178	1218689	73.1	65.21	79.76
50 and above	618	4140417	66.9	60.97	72.27

Note: (N=3151).

Table 6: Proportion of correct response to question 5: “Can a person get HIV by sharing food with someone who is infected?”.

Sociodemographic variables	Un weighted count	Estimated population	Prevalence (%)	95% CI	
				Lower	Upper
Malaysia	1876	15824929	62	58.27	65.65
Location					
Urban	1094	12743518	64.8	60.46	68.98
Rural	782	3081411	52.6	48.67	56.5

Age group					
Less than 15	64	621366	43.7	31.09	57.17
15-19	121	1074698	45.2	37.98	52.66
20-24	167	1679290	59.1	51.77	66.11
25-29	165	1938025	55.6	47.81	63.18
30-34	216	1928309	70.8	64.8	76.07
35-39	213	1743227	66.1	57.94	73.48
40-44	225	1597025	78.1	71.61	83.47
45-49	179	1286695	76.5	66.59	84.14
50 and above	526	3956295	62.8	56.45	68.71

Note: (N=3161).

DISCUSSION

In Malaysia, HIV/AIDS knowledge is increasing in rural areas, even though the proportion of HIV/AIDS knowledge in this cluster is much lower than in urban areas. HIV/AIDS is greatly influenced by a variety of socioeconomic and demographic factors. However, it is challenging to increase HIV awareness in rural Malaysia through accurate knowledge because the country needs to improve the educational environment in its underdeveloped rural areas, where HIV knowledge and belief are both lacking. According to the study's findings, both urban and rural Malaysians have a high level of knowledge about HIV transmission.

Almost all participants in urban and rural areas are aware that HIV transmission can be reduced by having sex with only one uninfected partner and by using a condom every time they engage in sexual activity. They are also knowledgeable regarding the fact that HIV cannot be transmitted through mosquito bites. A significant number of rural participants disagree with the statements can a healthy-looking person have HIV and can someone contract HIV by sharing food with an infected person [10]. Additionally, there are very few prejudices in urban areas. Prior efforts have revealed a significantly higher HIV prevalence among individuals who are unaware of and have inadequate knowledge of the potential routes of HIV transmission [11].

CONCLUSION

Overall, the prevalence of adequate HIV knowledge in Malaysia was low, especially among young people. Misconceptions about HIV transmission and prevention among young people are still common. The findings from this survey have important implications for the development of primary HIV/AIDS prevention programs and HIV educational campaigns to increase knowledge and dispel misconceptions about HIV. Such education and intervention programs should target rural areas, the young adult population, less educated, and unemployed groups.

ETHICAL CONSIDERATION

The study was conducted after approval had been obtained from The Medical Research & Ethics Committee (MREC), Ministry of Health Malaysia. All participants were informed of the objective of the study and verbal consents were received from the respondents for interview.

CONFLICT OF INTEREST

None to report.

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