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**KNOWLEDGE, ATTITUDES AND SEXUAL
BEHAVIORS RELATED TO HIV/AIDS PREVENTION
AMONGST MALAYSIAN ADOLESCENTS, 2009**



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Presentation Outline

- **Introduction**
- **Methodology**
- **Results and Discussion**
- **Conclusion**



INTRODUCTION

HIV/AIDS

- Human immunodeficiency virus (HIV) infection is posing a serious threat throughout the world since its discovery in 1981.
- It is estimated that in 2009, 33.3 million people were living with HIV (PLWH).
- Since the beginning of the epidemic, nearly 30 million people have died from AIDS-related causes.
- Youth have been described as being at the centre of the global HIV/AIDS pandemic.
- HIV is responsible for the social and economic decline within many communities across the globe.

HIV Global Trends

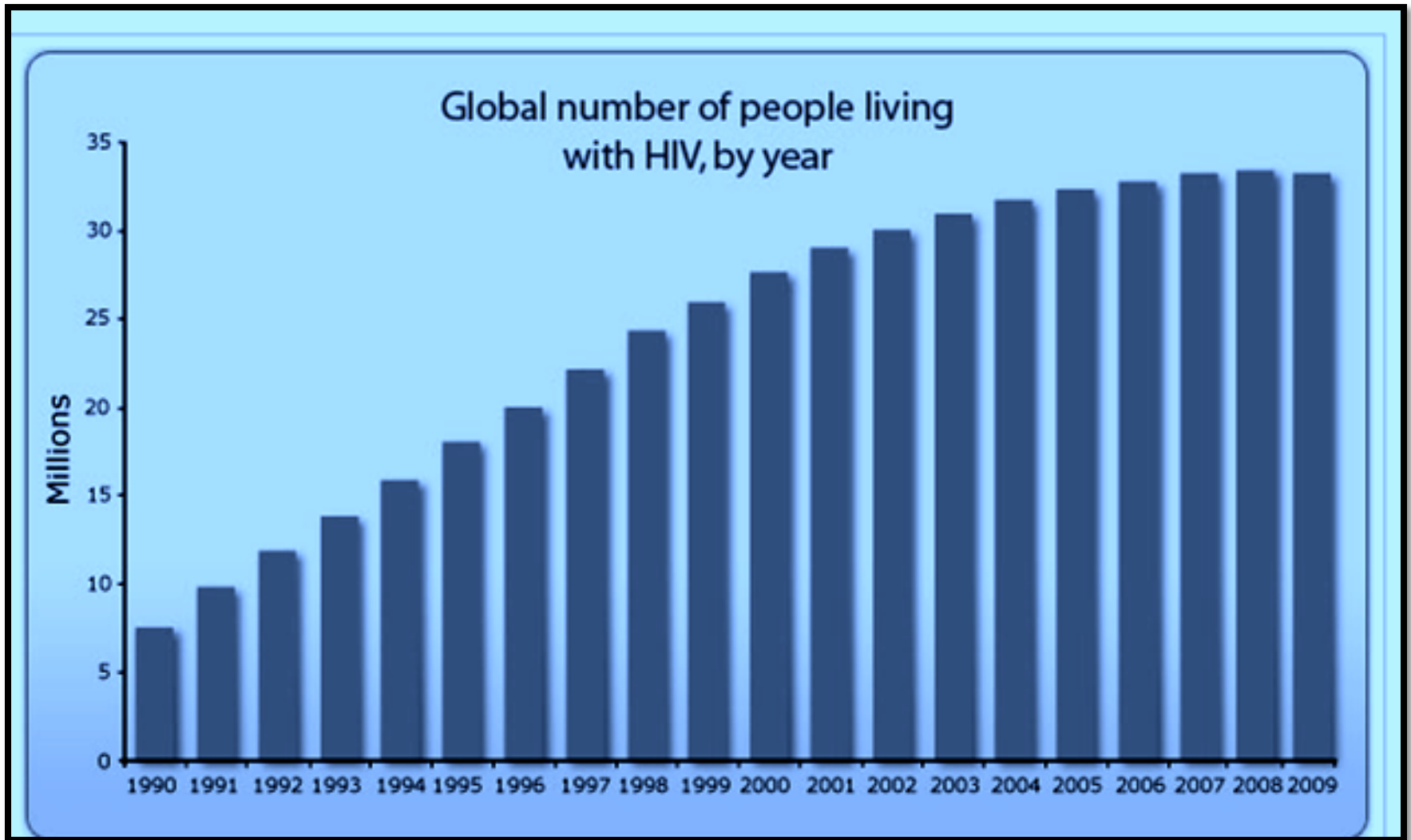


Figure 1. HIV Global trends

Source: UNAIDS/WHO, 2010)

HIV/AIDS in Malaysia

- ❑ Acquired Immune Deficiency Syndrome (AIDS) in Malaysia has become a significant health problem after it was first identified in 1986.
- ❑ The prevalence of HIV in Malaysia is estimated at approximately 0.5 % and the number of people living with HIV has increased steadily from 3 cumulative cases in 1986 to 87,710 cumulative cases as reported in 2010.
- ❑ Young people aged between 13 to 29 years old account for 35.9% of the reported infections in Malaysia.
- ❑ Young people are thus considered as a group of population vulnerable to HIV infection.
- ❑ There is concern about early(15 years old) sexual intercourse among the adolescents
- ❑ The percentage of premarital sexual activity seems to have increased over the years in Malaysia.

Objective

- The objective of this study was to determine the knowledge, attitudes and sexual behavior and associated factors related to HIV/AIDS among secondary school students in Klang district, Malaysia.



METHODOLOGY

- **Study Design:** Cross-sectional study design
- **Study location:** Klang district, Malaysia
- **Study Population:** Secondary school students of form two to form five.
- **Sample size:** 2259 students
- **Measuring instrument :** A standardized pre-tested self administrated questionnaire including 4 section:
 - 1- Socio-demographic characteristics;
 - 2- Sound Knowledge related to HIV/AIDS. This indicator combines the measures of knowledge of HIV transmission and prevention with the prevalence of most common misconceptions about HIV. Base on the 5 components which construct the indicator, it measured as follows:

Numerator:

- Number of respondents who gave **correct** answers to all five questions relating to transmission of HIV and misconceptions about HIV.

Denominator:

- Number of respondents who gave answers (including do not know) to all five questions.
 - 3- Attitude related to HIV/AIDS and
 - 4- Sexual behavior related to HIV/AIDS.

Data analysis

Data were analyzed using **SPSS** version 18.

- **The normality of the data was checked using Kolmogorov-Smirnoff test and using graphical method.**
- Descriptive statistics were used to analyze the demographic data and the mean and standard deviation were calculated for dependents variables and also frequencies determined for each of items.
- **Independent samples t-test, ANOVA and chi- square test** were used to examine relationship between dependent variables and independent variable .
- **logistic regression** was used to examine the association between **sound knowledge related to HIV/AIDS** and socio demographic factor.
- The level of significance was set at **$p < 0.05$** .

Ethical Approval

Ethical Approval was obtained from:

- The Medical Research Ethics Committee of the Faculty of Medicine and Health Sciences, Universiti Putra Malaysia
- Parents of students
- All the respondents before distribution the questionnaire.

Written approval was obtained from:

- Ministry of Education Malaysia
- The headmasters of three selected schools.



RESULTS & DISCOSSION

Socio-Demographic Characteristics

- The overall mean age of the 2259 respondents was 15.46 years (95% CI 15.4 -15.5; ± 1.1 SD) and ranged from 14 years to 17 years.
- The mean age of 1393 males was 15.46 years (95% CI 15.4 - 15.5; ± 1.1 SD) did not differ significantly as compared to the mean age of 866 females which was 15.47 years (95% CI 15.4 -15.6; ± 1.1 SD) years (t-test = -0.30, df = 2257, $p = 0.76$).

Table 1a. Socio - Demographic Characteristics of the respondents

Variable		Frequency	%
Gender	Male	1393	61.7
	Female	866	38.3
Age (years)	14	573	25.4
	15	628	27.8
	16	494	21.8
	17	564	25.0
Ethnicity	Malay	844	37.4
	Chinese	791	35.0
	Indian	587	26.0
	Others	37	1.6
Religion	Muslim	862	38.2
	Buddhist	716	31.7
	Hindu	505	22.4
	Christian	144	6.4
	Other	32	1.3

Table 1b. Socio - Demographic Characteristics of the respondents

Variable		Frequency	%
Parental marital statuses	Living together	2004	88.7
	Divorced	129	5.7
	Widow	96	4.2
	Other	30	1.4
Living arrangement	Both of my parents	1946	86.1
	My mother only	191	8.5
	My father only	85	3.8
	Other relatives	37	1.6
Father's education	No education	53	2.3
	Primary	239	10.5
	Secondary	1401	62.0
	College/university	464	20.5
Mother's education	No education	63	2.8
	Primary	286	12.7
	Secondary	1480	65.5
	College/university	349	15.4

Knowledge related to HIV/AIDS

- Overall **only 3.81%** out of the 2259 respondents had sound knowledge.
- Out of the 1393 males, only **4.1%** had sound knowledge as compared to **3.3%** out of the 866 females.

Table 2. Sound Knowledge regarding HIV/AIDS prevention

Item	Male n =1393	Female n = 866	Total n=2259
	Total with correct answer n (%)	Total with correct answer n (%)	With correct answer n (%)
1. Can people protect themselves from the HIV virus by having one uninfected faithful sex partner?	485 (34.9)	342 (39.5)	827 (36.6)
2. Can people protect themselves from the HIV virus by using a condom correctly every time they have sex?	504 (36.2)	238 (27.5)	742 (32.8)
3. Is it possible for a healthy looking person to be a HIV/AIDS infected person?	497 (35.7)	348 (40.2)	845 (37.4)
4. Can a person get the HIV virus from mosquito bites?	546 (39.3)	345 (39.8)	891 (39.4)
5. Can a person get the HIV virus by sharing food with a person who has HIV?	428 (30.8)	279 (32.3)	707 (31.3)

Table 3a. Relationship Between Sound Knowledge Related To HIV/AIDS And Demographic characteristics

Variable	Sound Knowledge		χ^2	p	
	Yes	No			
Gender	Male	57 (4.1%)	1336 (95.9%)	0.84	0.21
	Female	29(3.4%)	837(96.6%)		
Age (years)	14	12(2.1%)	561(97.9%)	20.34	0.001*
	15	14(2.2%)	614(97.8%)		
	16	24(4.9%)	470(95.1%)		
	17	36(6.4%)	528(93.6%)		
Ethnicity	Malay	36(4.3%)	808(95.7%)	3.66	0.302
	Chinese	34(4.3%)	757(95.7%)		
	Indian	15(2.6%)	572(97.4%)		
	Others	1(2.7%)	36(97.3%)		

Table 3b. Relationship Between Sound Knowledge Related To HIV/AIDS And Demographic characteristics

Variable		Sound Knowledge		χ^2	p
		Yes	No		
Religion	Muslim	37(4.3%)	825(95.7%)	9.03	0.060
	Buddhist	30(4.2%)	686(95.8%)		
	Hindu	10(2.0%)	495(98.0%)		
	Christian	9(6.2%)	135(93.8%)		
	Other	0(0%)	32(100.0 %)		
Father's education	No education	1(1.9%)	52(98.1%)	5.79	0.122
	Primary education	7(3.0%)	229(97.0%)		
	Secondary education	51(3.7%)	1350(96.3%)		
	College/university	27(5.8%)	437(94.2%)		
Mother's education	No education	0(0%)	63(100.0%)	5.23	0.156
	Primary education	9(3.1%)	277(96.9%)		
	Secondary education	58(3.9%)	1422(96.1%)		
	College/university	19(5.5%)	330(94.5%)		

Table 4. Logistic Regression Analysis Of Contributing Factors For Sound Knowledge

Items	β	SE	<i>p</i> value	OR	(95% CI)
Gender	-0.158	0.24	0.51	0.85	(0.54- 1.37)
Age	0.434	0.10	0.001*	1.54	(1.26- 1.90)
Ethnic	-0.41	0.28	0.15	0.66	(0.39- 1.13)
Religion	0.141	0.23	0.54	1.15	(0.72- 1.77)
Father's education	0.248	0.21	0.24	1.28	(0.87- 2.02)
Mother's education	0.229	0.21	0.29	1.26	(0.85- 1.97)

Attitude related to HIV/AIDS

- The overall mean attitude score was **40.2** (95% CI = 40.0 - 40.4) and ranged from 25 to 57. The median was **40**.
- The difference in the mean attitude score between females (**40.5**) and males (**40**) was very small but statistically significant.

Table 5a. Attitudes of respondents related to HIV/AIDS

Item	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
	Frequency(%)				
1. I would feel very uncomfortable being around someone with HIV.	594(26.4)	500(22.2)	852(37.8)	189(8.4)	119(5.3)
2. I feel that HIV is a punishment for immoral behavior.	577(25.6)	560(24.8)	689(30.6)	292(13.0)	139(6.0)
3. If I were having sex, it would be insulting if my partner insisted we use a condom.	170(7.6)	239(10.6)	1327(59.0)	250(11.1)	263(11.7)
4. I dislike the idea of limiting sex to just one partner to avoid HIV infection.	206(9.2)	383(17.0)	1169(52.0)	312(13.9)	180(8.0)
5. I would dislike asking a possible sex partner to get the HIV antibody tests.	197(8.8)	279(12.4)	805(35.8)	468(20.8)	502(22.3)
6. It would be dangerous to permit a student with HIV to attend school.	301(13.4)	403(17.9)	851(37.8)	402(17.9)	295(13.1)
7. I believe that sharing IV drug needles has nothing to do with HIV.	973(43.2)	521(23.2)	525(23.3)	107(4.8)	124(5.5)

Table 5b. Attitudes of respondents related to HIV/AIDS

Item	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
	Frequency(%)				
8. HIV education in schools is a waste of time.	96(4.3)	143(6.3)	608(27.0)	627(27.8)	778(34.5)
9. Even if a sex partner insisted, I would not use a condom.	221(9.8)	166(7.4)	1198(53.1)	318(14.1)	351(15.6)
10. I intend to talk about HIV prevention with a partner if we were to have sex.	537(23.8)	581(25.7)	885(39.3)	141(6.3)	109(4.8)
11. I intend not to use drugs so I can avoid HIV.	991(44.0)	379(16.7)	627(27.8)	102(4.5)	156(6.9)
12. I will use condoms when having sex if I'm not sure if my partner has HIV.	498(22.1)	507(22.4)	928(41.2)	134(6.0)	185(8.2)
13. I believe that AIDS is a preventable disease.	455(20.2)	462(20.5)	899(39.9)	199(8.8)	238(10.6)

Table 6a. Association between attitude scores related to HIV/AIDS and Demographic characteristics

Characteristic	N	Mean	SD	95% confidence interval for mean		F/t	p
				Lower Bound	Upper Bound		
Gender							
Male	1381	40.40	4.87	-0.88	-0.70	-2.30	0.022*
Female	858	40.88	4.64				
Age							
14	558	40.38	4.58	39.99	40.76	6.23	0.001*
15	625	40.22	4.43	39.87	40.57		
16	492	40.42	5.11	39.97	40.87		
17	564	41.32	5.01	40.91	41.74		
Total	2239	40.58	4.79	40.38	40.78		
Ethnicity							
Malay	837	40.76	4.46	40.46	41.06	3.11	0.026*
Chinese	786	40.78	4.80	40.45	41.12		
Indian	580	40.09	5.18	39.67	40.51		
Others	36	40.00	4.91	38.34	41.66		
Total	2239	40.58	4.79	40.38	40.78		

Table 6b. Association between attitude scores related to HIV/AIDS and Demographic characteristics

Characteristic	N	Mean	SD	95% confidence interval for mean		F/t	p
				Lower Bound	Upper Bound		
Religion							
Muslim	855	40.78	4.49	40.48	41.08	3.84	0.004*
Buddhist	712	40.83	4.76	40.49	41.19		
Hindu	500	40.00	5.15	39.55	40.45		
Christian	142	40.58	5.26	39.71	41.46		
Other	30	38.73	3.98	37.25	40.22		
Total	2239	40.58	4.79	40.38	40.78		
Parental marital status							
Living together	1987	40.52	4.73	40.31	40.73	2.72	0.043*
Divorced	127	41.20	5.54	40.23	42.18		
Widow	95	41.45	5.15	40.40	42.50		
Others	27	39.11	3.29	37.81	40.41		
Total	2236	40.58	4.79	40.38	40.78		
Living arrangement							
Both of parents	1932	40.51	4.74	40.30	40.72	2.99	0.030*
Mother only	189	41.43	5.09	40.70	42.16		
Father only	83	40.82	4.93	39.74	41.89		
Other relatives(s)	35	39.34	4.97	37.63	41.05		
Total	2239	40.58	4.79	40.38	40.78		

Table 6c. Association between attitude scores related to HIV/AIDS and Demographic characteristics

Characteristic	N	Mean	SD	95% confidence interval for mean		<i>F/t</i>	<i>p</i>
				Lower Bound	Upper Bound		
Father's Education							
No Education	53	39.87	4.12	38.73	41.00	1.22	0.300
Primary	236	40.65	4.99	40.01	41.29		
Secondary	1385	40.50	4.68	40.26	40.75		
University	462	40.90	5.12	40.44	41.37		
Total	2136	40.59	4.80	40.39	40.80		
Mother's Education							
No Education	62	39.89	3.98	38.88	40.90	2.48	0.059
Primary	286	40.35	4.71	39.80	40.90		
Secondary	1466	40.56	4.77	40.31	40.80		
University	347	41.19	5.14	40.64	41.73		
Total	2161	40.61	4.81	40.41	40.81		

Sexual behavior Related to HIV/AIDS Prevention

- Out of 2237 respondents, 136 (6.1%) stated that they have had sexual intercourse.
- The overall mean age at first sexual intercourse was 14.8 (95% CI 14.5 – 15.1) years and ranged from 11 years to 17 years. The median age was 15 years with a standard deviation of 1.7 years.
- For the males the mean age at first sexual intercourse was 14.9 (95% CI 14.5 – 15.2) years and ranged from 11 years to 17 years.
- For the females the mean age at first sexual intercourse was 14.5 (95% CI 13.9 – 15.2) years and ranged from 11 years to 17 years.
- The difference in the mean age at first sexual intercourse between males and females was not statistically significant ($p>0.05$).

Table7a. Sexual behavior of respondents related HIV/AIDS

Characteristic	Male (%)	Female (%)	Total(%)
1. Had sexual intercourse			
Yes	110 (8.0%)	26 (3.0%)	136 (6.1%)
No	1273 (92.0%)	828 (97.0%)	2101(93.9%)
2. Age at first sexual intercourse			
11	6 (5.5%)	2 (7.7%)	8(5.9%)
12	6 (5.5%)	0 (0%)	6(4.4%)
13	12 (11.0%)	3 (11.5%)	15(11.1%)
14	18 (16.5%)	7 (26.9%)	25(18.5%)
15	21 (19.3%)	7 (26.9%)	28(20.7%)
16	22 (20.2%)	5 (19.2%)	27(20.0%)
17	24 (22.0%)	2 (7.7%)	26(19.3%)
3. Forced into having sex			
Yes	26 (23.9%)	12 (46.2%)	38(28.1%)
No	67 (61.5%)	12 (46.2%)	79(58.5%)
Not Sure	16 (14.7%)	2 (7.7%)	18(13.3%)
4. Consumed alcohol before having sex			
Yes	18 (16.5%)	4 (15.4%)	22(16.3%)
No	91 (83.5%)	22 (84.6%)	113(83.7%)

Table 7b. Sexual behavior of respondents related HIV/AIDS

Characteristic	Male (%)	Female (%)	Total(%)
5. Consumed drug before having sex			
Yes	0 (0.0%)	2 (8.0%)	2(1.6%)
No	102 (100.0%)	23 (92.0%)	125(98.4%)
6. Used condom during last sexual intercourse			
Yes	48(44.0%)	9(34.6%)	57(42.2%)
No	61 (56.0%)	17 (65.4%)	78(57.8%)
7. Used any method to prevent pregnancy during last sexual intercourse			
Yes	72 (66.1%)	22 (84.6%)	94(69.6%)
No	37 (33.9%)	4 (15.4%)	41(30.4%)



CONCLUSION

Conclusion

- The levels of knowledge regarding HIV/AIDS transmission and prevention among secondary school students in Klang district is relatively **low** and serious *misconceptions* exist.
- The respondents seem to have **unfavorable** attitude on the prevention of HIV/AIDS and discriminatory and intolerant attitudes towards people living with HIV/AIDS.
- Some of respondents engage HIV/AIDS risky sexual behaviors.
- **Condom** use was not reported by a majority in last sexual intercourse (**42.2%**).

Recommendation

- Education program in schools through **peer-education** or curriculum.

Recommendation for Future Research

- Identify other determinants such as **cultural** and **psychological** that influence HIV/AIDS knowledge, attitude and practice of adolescents.

Acknowledgement

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