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Cross-Sectional Study on the Awareness of HIV Among University of Cyberjaya Students

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Abstract

Background: Malaysia is currently confronting a significant Human Immunodeficiency Virus (HIV) epidemic, particularly among men who have sex with men (MSM) and the transgender community despite ongoing efforts to raise awareness about HIV. Objective: This study aims to assess knowledge and awareness level about HIV among University of Cyberjaya (UOC) students. Methods: A cross-sectional study done among students of University of Cyberjaya who fulfill the inclusion and exclusion requirement. Data collected via online questionnaires distributed to various faculty and were analyzed by using JASP. This study used a mean scoring system to check the awareness level and Pearsons's correlation to find the relationship between their awareness level and socio-demographic status. Results: In this study, out of 200 respondent, majority of the participants were Female (64.0%), aged between 20-29 years old (88.0%), Malay (46.0%), Single (96.0%), MBBS students (79.5%) from Faculty of Medicine (79.5%), currently in their 4th year of studies (39.0%). Conclusion: Overall, our findings show most of the participants have a high level of awareness and knowledge on HIV as more than 90% of them are able to identify the correct mode of transmission for HIV. However, there was no significant correlation between their level of awareness and socio-demographic status. In this study, participants show a lack of knowledge on PrEP as 56.5% of them have heard of PrEP. Although the number reached more than half percent, they had never discussed PrEP with family, friends or healthcare workers.

Keywords: HIV, PrEP, MSM, Preventive methods, Awareness

Introduction

Malaysia is currently facing a significant challenge with the growing HIV epidemic, particularly among men who have sex with men (MSM) and the transgender population [15]. In Malaysia, homosexual or bisexual partnerships were implicated in 63% of HIV cases that were recorded in 2021, while heterosexual relationships accounted for 33% of cases [10]. Despite ongoing efforts by the government and various organizations to raise awareness and increase access to testing and treatment options, many in the

LGBTQ+ community still lack the knowledge and understanding about HIV and how to protect themselves from infection [16]. Thus, due to a lack of knowledge and concurrent screenings, 68% of HIV-positive patients in 2021 were only identified in the advanced stages [13]. The lack of knowledge and understanding of HIV has resulted in a lack of action to protect oneself from HIV, which only fuels the epidemic.

One important prevention method that is gaining recognition is pre-exposure prophylaxis (PrEP). PrEP is a medication that can be taken daily by individuals who are at high risk of contracting HIV. When taken as prescribed, PrEP has been proven to be highly effective in preventing HIV infection [4]. The likelihood of contracting HIV through sexual interaction is reduced with PrEP oral medicine by 98%, while HIV transmission by drug injection is decreased by 74% [10]. In this article series, we will explore the use of PrEP as a prevention method and provide information on how to access it.

To combat this issue, this article series aims to educate and inform the public about the realities of HIV in Malaysia, specifically students of the University of Cyberjaya (UOC), including the risks, prevention methods, and available resources for those living with the virus [6]. We will take an in-depth look at the current state of HIV in Malaysia among the LGBTQ+ community and examine the challenges that are contributing to its spread. We will also explore the various prevention methods that are available and provide information on how to access testing and treatment options [3]. Our goal is to empower the students of UOC with the knowledge and understanding they need to take control of their own health and help to slow the spread of HIV in Malaysia.

In addition, we will also provide information on the available resources for those living with HIV within the LGBTQ+ community, including support groups, counseling, and medical care, as well as legal and social support [8]. We hope that this article series will contribute to a greater understanding of HIV among students of University of Cyberjaya and help to reduce the stigmatization and discrimination that people living with HIV often face [17]. Together, we can work towards a future where HIV is no longer a death sentence, and everyone has access to the care and support they need.

Research Methodology

The main objective of this study was to assess awareness of HIV among the students of University of Cyberjaya. This study was carried out between September 2022 to October 2023 after approval had been obtained from Cyberjaya Research Ethics Committee, Faculty of Medicine, University of Cyberjaya (UoC).

Study design

A cross-sectional design was used in this study. All respondents are students of University of Cyberjaya. They were given online questionnaire which consist of knowledge and preventive method on HIV.

Simple random sampling method was used and sample size was calculated using the following equation:

$$n = [(\frac{z}{m})^2 \times P(1-P)] + 10\%\, non - respondents$$

where;

n = number of respondents

Z-score,z = 1.96 (95% CI)
Margin of error, m = 0.07 (7%)
Proportion, P = Anticipated proportion of population for study design

The sample size of our study are 200 respondents

Questionnaire

In this study, the study instrument used is a research questionnaire which is divided into 4 sections. (1) Socio-demographic characteristic (Age, gender, ethnicity, marital status, Faculty, course and year of programme). (2) Knowledge and awareness of HIV (20 Questions). (3) Knowledge in preventing HIV (8 Questions). (4) Knowledge and awareness of PrEP (9 Questions). All questions in section 2, 3 and 4 requires simple response (e.g "True" or "False" or "Not sure"). Scores were given for every answer, False = 0, Not sure = 0.5, True = 1. Mean value of the score were calculated and classified based on their awareness level. (<0.33=low, 0.34-0.66=moderate, >0.67=high).

Data analysis

Data were analyzed by using Jeffrey's Amazing Statistical Program (JASP). General awareness, knowledge and attitude level was descriptive into mean and Pearson correlation was applied to investigate between sections 2,3 and 4 with their socio demographic characteristics.

Research findings

Total of 200 respondents from University of Cyberjaya students participated in this study with a 10% response rate.

In our study, most of the respondents were female (64.0%), aged between 20-29 years old (88.0%) and singles (96.0%). Out of 200 respondents, MBBS students from the Faculty of Medicine occupied (95.5%) participants in this study and 39% of the respondents were in their 4th year of study.

Table 1: Sociodemographic status of respondents in this study

Sociodemographic status		
Age	**N**	**%**
18-19	17	8.5
20-29	176	88.0
30-39	7	3.5
40-49	0	0
50-60	0	0
Gender		
Male	72	36.0
Female	128	64.0
Ethnicity		
Malay	93	46.0
Chinese	16	8.0
Indian	86	43.0
Others	5	2.5

Marital status		
Single	192	96.0
Married	7	3.5
Divorced	0	0
Widowed	1	0.5
Faculty		
Faculty of Medicine	159	79.5
Faculty of Pharmacy	10	5.0
Faculty of Psychology and social Sciences	8	4.0
Faculty of Allied Health and Science	3	1.5
Centre for Foundation, Language and General Studies	3	1.5
Faculty of Nursing	10	5.0
Occupational Safety & Health Management	1	0.5
Business & Technology	6	3.0
Course		
Bachelor of Medicine & Bachelor of Surgery (MBBS)	159	79.5
Bachelor of Pharmacy	10	5.0
Bachelor of Biomedical Engineering Technology	3	1.5
Bachelor of Psychology	8	4.0
Foundation in Science	3	1.5
Bachelor in Occupational Safety And Health	1	0.5
Diploma in Accounting	1	0.5
Bachelor in Business Administration	5	2.5
Bachelor in Nursing	10	5.0
Year of Programme		

This study conducted revealed a high level of awareness among students regarding HIV as a virus, with 99% acknowledging its viral nature. However, misconceptions persist, such as the belief that HIV can be transmitted through handshakes (10%) or normal kissing (17%), indicating a need for educational interventions. A significant majority correctly identified unprotected sexual relations (97.5%), sharing syringe (98%), and blood transfusions (94.5%) as transmission routes. Notably, 94.5% of students understood that HIV primarily affects the immune system.

Table 2: Knowledge & Awareness on HIV of respondents in this study

KNOWLEDGE & AWARENESS OF HIV AMONG UOC STUDENTS						
Statement	**N for True**	**% for True**	**N for False**	**% for False**	**N for Not Sure**	**% for Not sure**
1.HIV is a virus	198	99.0	1	0.5	1	0.5

2.HIV can be transmitted in various ways	185	92.5	11	5.5	4	2.0
3.HIV is transmitted by handshakes	20	10.0	177	88.5	3	1.5
4.HIV is transmitted by normal kissing	34	17.0	153	76.5	13	6.5
5.HIV is transmitted by sharing syringes with drug users	196	98.0	2	1.0	2	1.0
6.HIV is transmitted via sexual relations without protection	195	97.5	4	2.0	1	0.5
7.HIV is transmitted through saliva.	58	29.0	129	64.5	13	6.5
8.HIV is transmitted through mere physical contact.	30	15.0	160	80.0	10	5.0
9. A person dies immediately as soon as that person gets infected by HIV	18	9.0	165	82.5	17	8.5
10. HIV is transmitted through multiple sexual contacts.	187	93.5	12	6.0	1	0.5
11. HIV majorly affects the immune system.	188	94.5	7	3.5	5	2.5
12. HIV is transmitted through mosquito bites	33	16.5	152	76.0	15	7.5
13. HIV is transmitted through breast-feeding from an HIV infected mother.	160	80.0	23	11.5	17	8.5
14. HIV is transmitted through blood transfusion	189	94.5	4	2.0	7	3.5

15. Using a public swimming pool can spread HIV.	22	11.0	151	75.5	27	13.5
16. HIV can be transmitted by coughing or sneezing	25	12.5	160	80.0	15	7.5
17. HIV can be transmitted by anal sex.	170	85.5	18	9.0	12	6.0
18. HIV can be transmitted by oral sex.	126	63.0	59	29.50	15	7.5
19. There is a vaccine for HIV.	42	21.0	135	67.5	23	11.5
20. There is a blood test capable of diagnosing HIV infection.	172	86.0	11	5.5	17	8.5

In terms of prevention, most students recognized the effectiveness of monogamous relationships with uninfected partners (95%), using condoms (94%), and not sharing needles (96%). However, there were prevalent misconceptions about post-exposure practices and unnecessary avoidance behaviors towards HIV-positive individuals.

Table 3: Knowledge on HIV Prevention of respondents in this study

KNOWLEDGE IN PREVENTING HIV AMONG UOC STUDENTS						
Statement	**N for True**	**% for True**	**N for False**	**% for False**	**N for Not Sure**	**% for Not sure**
Q1. Having sex with only one faithful, uninfected partner.	190	95.0	9	4.5	1	0.5
Q2. Avoid sharing needles and syringes.	192	96.0	6	3.0	2	1.0
Q3. Use condoms during sexual intercourse.	188	94.0	7	3.5	5	2.5
Q4. Wash genital area with soap after sexual	49	24.5	119	59.5	32	16.0

KNOWLEDGE IN PREVENTING HIV AMONG UOC STUDENTS						
intercourse.						
Q5. Avoid touching HIV-positive people.	42	21.0	146	73.0	12	6.0
Q6. Avoid sharing toilets with people infected with HIV.	53	26.5	117	58.5	30	15.0
Q7. Do not share food or drinks with people infected with HIV.	47	23.5	139	69.5	14	7.0
Q8. Avoid contact such as hugging or touching with people infected with HIV.	35	17.5	154	77.0	11	5.5

Awareness of Pre-Exposure Prophylaxis (PrEP) was moderate, with 56.5% having heard of it, but only 12.5% having used it. Willingness to use PrEP increased significantly when provided with more information (60.5%) or if offered free of cost (66%).

Table 4: Awareness And Knowledge of PrEP of respondents in this study

AWARENESS AND KNOWLEDGE OF PRE-EXPOSURE PROPHYLAXIS (PrEP)				
Questions	**N for YES**	**N for NO**	**% for YES**	**% for NO**
1.Heard of PrEP?	113	87	56.5	43.5
2.What is PrEP?	102	98	51.0	49.0
3.Ever used PrEP?	25	175	12.5	87.5
4.Shared PrEP with friends/relatives?	60	140	30.0	70.0
5.Discussed PrEP with a Health Worker?	69	131	34.5	65.5
6.Any person known using PrEP?	43	157	21.5	78.5

WILLINGNESS TO USE				
7.If given more information about PrEP?	121	79	60.5	39.5
8.If PrEP is provided free of cost?	132	68	66.0	34.0
9.If available in pharmacies without prescription?	121	79	60.5	39.5

Based on the p-value, there was no significant correlation between knowledge and awareness of HIV among UOC students with their sociodemographic status.

Table 5: P-value of knowledge and awareness of HIV among UOC students with socio demographic data

	P-value
Age	0.834
Gender	0.758
Ethnicity	0.902
Marital status	0.222
Faculty	0.617
Course	0.443
Year of Programme	0.394

Based on table 6, there was no significant correlation between knowledge in preventing HIV among UOC students with their sociodemographic status.

Table 6: P-value of knowledge in preventing HIV among UOC students with socio demographic data

	P-value
Age	0.696
Gender	0.340
Ethnicity	0.659
Marital status	0.980
Faculty	0.772
Course	0.818
Year of Programme	0.501

Based on table 7, there was a significant correlation between knowledge of PrEP with their year of studies as the p-value shows 0.025. Our study also found there was a significant correlation based on their faculty with a p-value of 0.041.

Table 7: P-value of knowledge of PrEP among UOC students with socio demographic data

	P-value
Age	0.395
Gender	0.960
Ethnicity	0.849
Marital status	0.295
Faculty	0.041
Course	0.081
Year of Programme	0.025

These findings underscore the importance of comprehensive HIV education that corrects misconceptions and promotes effective prevention strategies, including the use of PrEP, to enhance the overall knowledge and preparedness of students in facing the HIV epidemic.

Discussions

According to the results of this study, the level of HIV awareness among UoC students is high. This is because about 99% of the total respondents knows HIV is a virus and 92.5% of the respondents knew that HIV was transmitted in many ways. The respondents were aware that HIV is transmitted via sharing syringes with drug users (98%), sex without protection (97.5%), anal sex (85.5%), oral sex (63%) and breast-feeding (80%). Having said that, there were some misconceptions and little lack of knowledge in some respondents where they answered true for transmitted through saliva (29%), mosquito bites (33%), normal kissing (17%) and physical contact (15%) which corresponds with a previous study [16]. Our results also aligned with the previous study which stated that the majority knew that HIV can be tested by a blood test (82.9%) while our study showed 86% [16]. Then, about 21% of respondents in our study said there is a vaccine for HIV, which is actually incorrect. This is supported by a study where 46% of respondents also believed that there were vaccines for HIV [5]. This proved that although students were aware of HIV transmissions, they were not fully competent in their knowledge of HIV.

Based on the results for knowledge of HIV prevention, majority of the respondents were successful in answering right for having sex with one partner who is not infected (95%), avoid sharing syringes and needles with an HIV infected person (96%) and using condoms during sex (94%) where it is supported by the study [16]. However, there was a portion of respondents who believed washing the genital area with soap after sex (24.5%), avoiding touching or HIV infected people (21%) and avoiding sharing drinks or food with them (23.5%) are preventions of HIV transmission where they are actually not. This is because some respondents had believed that HIV can be transmitted by touching hence, they thought avoiding touching an infected person is a preventive method. Even Though the respondents are aware of the

preventive methods, having just the knowledge itself is not enough, they need to be taught and guided to apply their knowledge in real life.

This study also reported the big gender difference in knowledge of HIV transmission and prevention with females being well educated more than males. Gender differences in HIV knowledge can be similarly seen in study where female college students are highly knowledgeable in HIV and AIDS [3]. However, another study among college students in China has more knowledgeable males compared to females [6]. HIV knowledge differences can also vary with ethnicities where majorities of the Malay have higher knowledge of HIV followed by Indians and then Chinese which correlates with the study [16]. Next, the analysis of this study found that students in the higher age group (20 to 29 years and 30-39 years) had better knowledge compared to the younger age group (18-19 years). This result is also similar in a study where teenage students scored significantly lower compared to older students [8]. This could be due to the fact that the younger students were not exposed to any HIV prevention talks or programs during their school days but older students had way longer experience in their lifetime and had enough time to learn and gain their knowledge on HIV. Moreover, the majority of respondents are from the Faculty of Medicine, especially students from Bachelor of Medicine and Bachelor of Surgery (MBBS) which made most of them well equipped with knowledge of HIV transmission and prevention of HIV.

In this study, 56.5% respondents have heard of PrEP before and 51% of them know what PrEP really is. This is similar in a study where almost half of the students were aware of PrEP during the survey [1]. A lower awareness of PrEP was found in a French study conducted in patients with HIV. In our study, only 12.5% of respondents have ever used PrEP before. Therefore, this showed a huge difference between PrEP awareness and its usage and there are reasons for it. Based on the study, it was stated that the reasons for the low usage of PrEP were high cost of it and fear of getting side effects [14]. According to this study, 70% of the participants gained information about PrEP on the Internet and 50% through friends and family [14]. Our study showed that 30% of respondents have ever talked about PrEP with their family and friends, 34.5% discussed PrEP with a healthcare worker and 21.5% of respondents had known other people had used PrEP before. However, the majority of the respondents are willing to use PrEP if they were given more information (60.5%), free of cost (66%) and available in pharmacies without prescription (60.5%). Having a university education was associated with higher use of or willingness to use PrEP. Further research is needed to understand this association that has been described in a similar study as well as for other factors that could lead to less willingness to use PrEP [14].

Limitation, Conclusion and recommendations

Limitation

This study acknowledges several limitations. The use of a simple random sampling method, while reducing selection bias, does not account for the potential variability in HIV awareness across different faculties or years of study. The cross-sectional nature of the study provides a snapshot of awareness and knowledge at a single point in time, which may not reflect changes in understanding or attitudes that develop over the course of a student's education. Additionally, the reliance on self-reported data through questionnaires may introduce response bias, as students might provide socially desirable answers rather than their true beliefs or knowledge levels. Lastly, the dichotomous nature of the questionnaire responses (True/False/Not sure) limits the depth of insight into the nuances of students' awareness and understanding of HIV and PrEP.

Conclusions

The study conducted at the University of Cyberjaya has provided insightful data on the current state of HIV awareness and knowledge of PrEP among its students. The high levels of correct identification of HIV transmission routes and prevention methods are commendable, reflecting the effectiveness of existing educational resources. However, the persistence of certain misconceptions about transmission through casual contact and the moderate awareness of PrEP highlight areas for improvement. The willingness of students to use PrEP, especially if provided with more information or at no cost, suggests a positive inclination towards proactive health measures. It is imperative that the university capitalizes on these findings to refine its health education programs, aiming to eradicate misconceptions and equip students with comprehensive knowledge that can aid in the global fight against HIV

Recommendations

We recommend to implement targeted educational programs that address the specific gaps in knowledge identified, ensuring that these programs are inclusive of all faculties and year levels.
Introduce interactive workshops that engage students in discussions about HIV prevention strategies, including the use of PrEP, to foster a deeper understanding beyond binary questionnaire responses. Encourage peer-led initiatives to promote open dialogue about HIV, which may help in reducing stigma and encouraging more honest communication among students. Conduct follow-up studies to assess the longitudinal impact of these interventions on students' awareness and behaviors regarding HIV prevention.

By adopting these recommendations, proactive steps can be taken towards building a more informed student body equipped with the necessary knowledge to combat the spread of HIV.

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