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AWARENESS, KNOWLEDGE, AND BEHAVIOR REGARDING HIV/AIDS AMONG FRESHMAN STUDENTS AT OAKLAND UNIVERSITY

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ABSTRACT

Human immunodeficiency virus (HIV) causes a sexually transmitted disease (STD) affecting the human immune system. It is mainly transmitted through sexual intercourse, blood transfusions, hypodermic needles, and parenterally. Multiple actions can be taken to prevent the spread of HIV/AIDS, such as condom and sterile needle use and HIV testing for pregnant women. This study aims to assess freshmen students' awareness, knowledge, attitudes, and behavioral perceptions regarding HIV/AIDS at Oakland University (OU) in Michigan. This study is a cross-sectional survey targeting freshman students at OU. The questionnaire is comprised of seven sections including demographics, risk perception, protection measures, alcohol tendencies, health-seeking behaviors, culturally sensitive issues, and methods of dissemination of information. The mean age of respondents was 20. The majority of respondents knew that HIV is transmitted sexually (98%) and by sharing needles (98%). Many misconceptions about transmission of HIV were expressed by 53%. Data showed that while there was good knowledge regarding HIV transmission and prevention, some misconceptions still prevailed. Our results indicate the need to develop educational programs with specific interventions to raise awareness about preventive measures, clear misconceptions, and promote healthy lifestyle in order to prevent new HIV infections among young college students.

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1. Introduction

HIV is a lentivirus family of mammalian retrovirus that evolved to establish chronic and persistent infection with gradual onset of clinical symptoms (1). The most common ways that HIV is transmitted by are sexual intercourse, non-sterile needle use, and a mother passing it to her baby either during birth or through breast feeding. Most patients develop symptoms two to four weeks after exposure to the virus. Initial symptoms include rash, anorexia, diarrhea, and other flu-like symptoms (2). HIV was first reported in the USA in 1981, with five previously healthy homosexual men in Los Angeles, and in 26 previously healthy homosexual men in New York who were also involved in drug use. In 1983, HIV was isolated and in 1984 it was determined to be the etiological agent of AIDS (3). Since the discovery of HIV/AIDS, the virus has emerged as a worldwide epidemic. As of December 2007, approximately 25 million individuals had died of HIV-related illnesses across the globe, and there are about 33.2 million people that are currently living with HIV/AIDS (4). Prevalence of HIV/AIDS is highest in sub-Saharan Africa, where 22.5 million are infected (5). The infection is also growing at an alarmingly fast rate in Central Asia and Eastern Europe where the number of new HIV cases has increased from 30,000 in 1995 to 1.4 million in 2004. The UNAIDS Program predicts that by 2020, HIV will be responsible for more than one third of all infectious disease-related deaths worldwide. However, this epidemic is not confined to the Eastern hemisphere, and has been spreading throughout the western hemisphere (4). HIV/AIDS continues to be a growing problem in the United States of America. The CDC estimates that 1.1 million people are currently living with HIV, and approximately 56,000 new infections occur each year in the USA (1). It is estimated that 1/3 of the HIV infected people in the USA do not know that they are infected and have not been tested (6). With testing and treatment, HIV infected individuals can live up to near-normal life expectancies (7). In 2005, HIV/AIDS was the fourth leading cause of death among black men aged 25-44 and the third leading cause of

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death for black women in the same age group (4). HIV/AIDS is commonly thought to be a virus affecting mainly homosexual persons, and while 38% of HIV positive patients were exposed to the virus from homosexual contact, another 20% were exposed during heterosexual contact. HIV is not the only STD that is growing in America (4). 110 million men and women have an STD in the United States, and there are 19.7 million new STDs every year in the Unites States (8). One common STD, Human Papilloma Virus, is so common that nearly all sexually-active men and women will contact at least one strain of it at some point in their lives. It is estimated that nearly half of all people will have an STD at some point in their lifetime (9,10).

As with the rest of the United States, Michigan is also affected greatly by HIV and other STDs. As of December 2008, Michigan reported 16,866 AIDS cases to the CDC, and ranks 15th highest among the 50 states in cumulative reported AIDS cases (11). In just the year 2012 alone, there were 48,727 Michiganders newly diagnosed with chlamydia, 12,770 diagnosed with gonorrhea, and 757 diagnosed with syphilis (11,12).

Younger adults continue to be a large risk factor for HIV/AIDS. In 2014, youth aged 13 to 24 accounted for more than 1 in 5 newly diagnosed HIV cases. In 2012, nearly 44% of infected youths aged 18 to 24 did not know they had HIV (13). It is worth noting that 81% of diagnosis among youth occurred in the ages of 20-24, which falls in the range of college students (13). According to the Youth Risk Behavior Surveillance System, only 22% of high school students had been tested for HIV, and only 41% of sexually active high school students had used a condom during their last sexual contact (14). Literature suggests that while there is a general knowledge base within college students, there is a lack of general use of preventive measures regarding HIV (15). Previous research seems to show a wide range of results for protective measures, but it seems that well below 50% of sexually active college students use condoms and have been tested for HIV (16,17). Other research suggests that college students were much more knowledgeable and willing to use protective measures after an HIV instructional college course (18,19). Information regarding how previous knowledge affects attitude and perception of HIV, and the choice of means for information dissemination has not been studied adequately. The objective of this study is to assess freshman students' knowledge, attitudes, and behavioral perceptions regarding HIV/AIDS at Oakland University (OU) in Michigan, and understand their choice of information dissemination.

2. Methods

A cross-sectional survey was performed targeting a randomized sample of 1000 freshman students at OU. The questionnaire included seven sections that ask about demographics, risk perception, protection measures, alcohol, health seeking behaviors, gender, culturally sensitive issues, and potential ways for dissemination of information. The survey instrument was an online, self-administered anonymous questionnaire conducted using Google survey software, which automatically populates and saves digital responses to a secure database protecting participant confidentiality throughout the surveying process. Study invitation was sent out two times a month for four months totaling seven study invitations.

Data analysis was performed by the biostatistician in the Department of Biomedical Sciences at OUWB School of Medicine, Michigan. Statistical analysis was performed using SPSS Statistics for Windows Version 21.0. (Armonk, NY: IBM Corp).

3. Results

Out of the 1000 individuals who were offered the survey, 69 completed it. The mean age of the respondents was 20. The majority of the respondents knew that HIV is transmitted sexually (98%) and by sharing needles (98%). Misconceptions about transmission of HIV were reported by 53%. Even though, 70% of the students listed condoms as a preventive method for HIV contraction, only 28% reported using this method. While 67% of the participants revealed that they were sexually active, only 19% of the participants have been tested for HIV in the past two years. Over 60% of the respondents either chose the internet or university educational activities as their optimal means of information dissemination.

Of the students who completed the survey, 81% of them were female. Each of them was a college freshman at OU. The mean age of the respondents was 20, and 92% were single (table 1).

Age, mean in yrs (range)	20 (18-43)
Gender, (%)	
- Male	19
- Feamle	81
Drinking Status, (%)	
- Drinks alcohol	60
- Does not drink alcohol	40
Marital Status, (%)	
- Married	3
- Single	92
State Attended High School, (%)	
- Michigan	3
- Other State	97

Table 1 - General information

As reported in table 2, Over 18% of the respondents either thought HIV was not caused by a virus or were unsure. Ten percent thought that HIV and AIDS were the same thing and 83% did know that condoms could be used to prevent HIV during sexual intercourse. More than 35% of respondents were unsure or incorrect in asserting that mosquito bites could cause HIV infection. On the other hand, 98% of students knew that HIV could be transmitted through the use of non-sterile needles.

Finally, data on HIV risk perception showed that among the respondents who answered that condom use was applicable to them, sixty one percent in particular said they use condoms regularly. In addition, 88% said that they would see a doctor if they believed that they might have HIV, however most sexually active respondents did not think they had any risk. Only 19% had been tested for HIV within the past two years.

About half of the respondents thought that they needed to learn more about STDs, and almost 50% thought they needed to learn more about prevention measures. However, around 70% of the students thought that the best way to learn this information was either from the internet or from college educational opportunities.

	Yes (%)	No (%)	Do Not Know (%)
Aids is caused by a virus	82	7	10
US/Michigan is known for not having registered any HIV infections	4	51	44
It is possible to protect yourself from HIV by using a condom during sexual intercourse	84	10	6
You can get HIV by getting bit by a mosquito	28	54	18
People can get HIV by sharing plates with someone infected	10	87	3
People can get HIV by using non sterile needles for injection	99	1	0

Table 2 - HIV/AIDS knowledge perception

	Yes (%)	No (%)	Do Not Know (%)
People living with HIV should be allowed to continue their studies	96	1	3
Do you think Oakland University students are at risk for acquiring HIV	48	31	21
Do you think there is a cure for HIV/AIDS	22	61	16
Can you tell whether a person is infected by HIV by just looking at them	1	92	6

Table 3 - HIV/AIDS risk perception

4. Discussion

Although there has been a lot of evidence supporting generally high knowledge among college age students regarding HIV/AIDS, and low use of preventive measures; this study shows that there is still a need and desire for more education at the college level. While previous studies show that around 40% of college age students have been tested in their lifetime, this study shows that only 19% had been tested in the past two years.

Both of those numbers are incredibly low, and while there has been a large push to increase the number of HIV testing in college; this needs to be a much larger priority. Earlier studies have shown the drastic improvement in college students' willingness to use protective measures after a college course compared to before taking a course. There has not been many studies looking at how the information could best be approached and taught. There also has not been enough information and research done to see what exactly should be taught. It seems that studies show that there is a large knowledge fund in the college students, so the question is why is there the gap between the knowledge and the protection measures. While we were able to observe this gap in this study, the reason was not. There should be more studies looking at this in the future. We did show that even the students with high knowledge scores, still wanted to have extra opportunities to learn about STD prevention. We also learned that the most preferred method of disseminating this information was either through the use of the internet, or through college educational opportunities.

In brief, this study showed that even though there was good knowledge regarding ways of HIV transmissions and methods of prevention, some misconceptions still prevailed. Our results indicate the need to develop educational programs with specific interventions to raise awareness about preventive measures, clear misconceptions, and promote healthy sexual behaviors in order to prevent new HIV infections among young college students. The main limit of the study is the small sample size of respondents. Moreover, the respondents were all freshman at Oakland University, so this is not representative of any larger groups. There is also an implicit response bias due to the nature of a survey study.

5. Conclusions

This study looked at the awareness, knowledge, and behavior regarding HIV/AIDS among college students at Oakland University. Our results agree with previous studies that there is a generally high knowledge base among college freshman regarding HIV, but a low adherence to protection measures. Our results also show that access to HIV information is necessary and desired among college students, especially regarding HIV prevention measures. This information seems like it would most likely be desired in the form of Internet education or physical college courses.

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