

A Study of AIDS Risk-Behavior Knowledge Among College Students: Another Facet of Teaching Social Responsibility

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Abstract

The purpose of this study was to examine the level of HIV/AIDS risk-behavior knowledge of students majoring in recreation and health-related fields. A total of 258 undergraduate and graduate students were surveyed. Over 50% of the participants believed that HIV can penetrate unbroken skin, over 40% believed that sharing kitchen utensils and a bathroom with a person with AIDS places one at risk for contracting AIDS, and nearly 25% believed that AIDS can be transmitted by mosquitoes and cockroaches. No significant relationship was found between participants' personal experience with people with AIDS and level of knowledge. Overall students demonstrated some knowledge of AIDS. However, there is still a great deal of misinformation regarding AIDS suggesting the need for incorporating HIV/AIDS information into the curriculum.

Keywords: HIV/AIDS, HIV knowledge, recreation students, teaching for social responsibility

Biographical Information

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Introduction

Educating for social responsibility involves presenting students with the moral dilemmas and challenges they face with regard to their own behavior as well as facilitating change in the behaviors of their future clients. Grossman (1991) stated, "It is the professional responsibility of recreation educators to teach students about HIV and AIDS for their future careers . . ." (p.7), because, "The time has come to insist that an educated person is a socially responsible one . . ." (Goodale, 1992, p. 88).

There is ample evidence in the literature regarding the need for educating recreation professionals about AIDS transmission (Grossman & Caroleo, 1992; Grossman, 1993/94; Grossman, 1997; Kraus 2000; Turner & Keller, 1988). In a study conducted by Grossman and Caroleo that examined AIDS risk-behavior knowledge of therapeutic recreation specialists, it was found that participants answered 89% of the survey questions correctly. The researchers indicated that there was some AIDS risk-behavior knowledge possessed by the participants, yet there was still much misinformation regarding high-risk sexual and drug practices and risk-reduction steps.

With no known cure for AIDS, education and behavior changes remain the only methods of controlling the spread of HIV infection (Grossman, 2001). However, with a growing perception that the AIDS crisis is over, due in part to the numerous reports that indicate that AIDS is no longer feared as a serious threat, education efforts may be declining (Bozzette et al., 1998; Gilden, 1998; King, 1999; Venable, Ostrow, McKirnan, Taywaditep, & Hope, 2000). These reports provide evidence that new medical treatments for AIDS have resulted in people with AIDS (PWAs) living longer, healthier lives. Unfortunately, people continue to become HIV infected and die from AIDS at alarming rates. Worldwide, 36 million people are infected with HIV. This is more than the population of Australia, and includes an estimated 900,000 in the United States (Begley, 2001). One study conducted in eight United States cities showed that of people newly infected with HIV, 14% are infected with strains of the virus that are resistant to current anti-HIV drug treatments (Cohan, 2001).

The need for recreation professionals to have accurate AIDS risk knowledge is important for bringing about changes in behaviors that can lead to a reduction in HIV transmission. Grossman (1991) indicated that recreation professionals need basic HIV/AIDS knowledge including how the disease is spread, and how it can be contained, in order to work effectively with PWAs. Recreation professionals work with PWAs and with individuals at risk for contracting HIV, including sexually active teenagers. According to Kraus (2000), sexually active teenagers think they can identify individuals who have HIV because they will have visible signs of the disease and avoid contracting HIV by having sex only with "nice" people. Unfortunately, a disparity exists between the prevalence of sexually transmitted diseases (STD), including HIV/AIDS, and public knowledge and awareness of STDs, among young people (Institute of Medicine [IOM], 1997). By the age of 24, one in three sexually active teens will have contracted a STD (American Social Health Association, 1999) and one in 500 will become infected with HIV (Gayle et al., 1999).

Due to the medical advances of antiviral therapy or combination drug therapy most PWAs are living longer. These therapies may be providing a false sense of hope and a reduction in the practice of behaviors that reduce the spread of HIV infection. Kelly, Hoffmann, Rompa, & Gray (1998) found that nearly 20% of PWAs practice safer sex less often since the introduction of new HIV treatments. Similarly, in a study conducted by Kravcik, et al. (1998), the researchers found that 20% of HIV-infected indi-

viduals believed that the risk of HIV transmission was reduced and safer sex was less important for individuals receiving combination drug therapy. With the perception among PWAs that safer sex is less important in light of new medical treatments, it becomes increasingly more important for health care professionals to have accurate knowledge pertaining to AIDS risk behaviors. The misconception that safer sex is less important for a PWA receiving combination drug therapy is just one example. Other misconceptions include the belief that showering after unprotected intercourse reduces the risk of transmission and that mosquitoes can transmit HIV. Misconceptions about HIV transmission, by both the HIV-infected individual and recreation professionals, can contribute to behaviors that lead to HIV transmission or unnecessary fear.

There has been an ongoing movement by recreation professionals to increase the level of AIDS risk knowledge within the field since the late 1980's. This movement has included: educating recreation students on HIV/AIDS in the classroom; increased content in professional journals, magazines, and textbooks; HIV/AIDS workshops at conferences; and in-services for HIV/AIDS training.

The purpose of this study was to examine the HIV/AIDS risk-behavior knowledge of students majoring in therapeutic recreation, recreation administration recreation, and related health professions. It was hypothesized that students, many of whom had personal experience with AIDS, due to studying in New York City, an AIDS epicenter, would have high scores on the AIDS risk-behavior knowledge test.

Method

The researcher is a faculty member in a college Department of Health Services where the survey was conducted. At a routine faculty meeting, the researcher proposed the study as a convenience study, requesting support for utilizing students as respondents, explained the potential value of the study, distributed a copy of the questionnaire, and discussed possible access to faculty members' classes. All faculty were interested and provided the researcher with their class schedules. The researcher developed a schedule to collect data utilizing a research assistant to administer the questionnaire in order to reduce bias from instructor familiarity and to assure students' anonymity in responding. Participating courses included ten classes in recreation and eight classes in health education, health service administration, and nutrition.

Population and Data Collection

Questionnaires were distributed in the Spring of 1999 by a research assistant to a convenience sample of 270 undergraduate and graduate students attending classes at a college in New York City. Participants included students majoring in therapeutic recreation, recreation administration, and related health fields such as health education, health administration, and nutrition. Twenty minutes prior to the end of class the faculty member introduced the research assistant and then left the room. The research assistant in-

formed the students about the nature of the study and indicated that completing the anonymous questionnaire would indicate their consent to participate. Students were assured that their participation would have no impact on their grades or standing within the college and was completely voluntary. Students who did not wish to participate could either leave or sit quietly while their peers completed the questionnaire. Of the 270 students approached, 258 participated in the study.

Instrumentation

The questionnaire consisted of two parts, demographic information and the "AIDS Risk Behavior Knowledge Test" (Kelly, St. Lawrence, Hood & Brasfield, 1989). The demographic section consisted of questions regarding the participants' age, sex, years of college, ethnicity, and sexual orientation, if they had ever been tested for HIV, and if they had a friend or family member with HIV/AIDS. The AIDS Risk Behavior Knowledge Test contains 40 true/false items and was constructed to reflect three general knowledge areas: high-risk sexual and drug practices, risk reduction steps, and misconceptions regarding HIV/AIDS. The high-risk sexual and drug practice items included statements such as "Oral sex is safe if the partners don't swallow," and "Intravenous drug users are at risk for AIDS when they share needles." An example of a risk reduction item is, "Persons who are exclusively heterosexual are not at risk for AIDS." The final area, misconceptions regarding HIV/AIDS, includes items such as "Sharing kitchen utensils or a bathroom with a person with AIDS poses no risk," and, "The AIDS virus can be transmitted by mosquitoes or cockroaches." The test yields a total score based on the number of correct items, with 40 being the highest possible score. Kelly et al. (1989) reported that the instrument has satisfactory content validity, internal consistency coefficients of .74, and a test-retest reliability coefficient of .84, resulting in a high degree of temporal stability for the instrument.

Results

Description of Sample

Females ($n = 191$) constituted a majority of the 258 participants (see Table 1). More than half of the students were age 18 to 29 (56.1%). A majority of the participants, nearly three-fourths (74%) identified as either Black or Hispanic, while 21.3% were White. Regarding college level, most participants were undergraduate students 185 (71.7%) with only 72 (27.9%) being graduate students. Unfortunately, data pertaining to students' major were not collected. It was assumed, however, that the majority were recreation majors as more than half of the classes were recreation and recreation has the highest enrollment. This prevented the researcher from indicating number of students by major or correlating questionnaire data to major.

A significant number (47.7%, $n = 123$) of participants stated that they had been tested for HIV and nearly one-third ($n = 75$) indicated that they had a family member or close friend with AIDS. Upon completing the questionnaire three recreation students

identified themselves as having AIDS. These students wanted to know the answers to questions pertaining to high-risk sexual practices and misconceptions. One other student believed that cockroaches could transmit HIV. Even students with AIDS did not know the correct answers.

TABLE 1

Descriptive characteristics of participants (N = 258)

Characteristic	n	%	Characteristic	n	%
Gender			Ethnic origin		
Female	191	74	Black	112	43.4
Male	67	26	Hispanic	75	29.1
			White	55	21.3
Age			Native American	1	0.4
18-23	51	19.7	Asian & Pacific Islander	7	2.7
24-29	94	36.4	Missing	8	3.1
30-35	35	13.6			
36-39	29	11.3			
40 +	42	16.3	Sexual orientation		
Missing	7	2.7	Heterosexual	240	93
			Bisexual	8	3.1
College level			Gay/Lesbian	3	1.2
Freshman	12	4.7	Missing	7	.4
Sophomore	24	9.3			
Junior	69	26.7	Tested for HIV		
Senior	80	31	No	123	47.7
Graduate	72	27.9	Yes	135	53
Missing		1.4			
Have a family or close friend with HIV/AIDS					
No	183	70.9			
Yes	75	29.1			

AIDS Risk Behavior Knowledge

Overall the students demonstrated some knowledge of AIDS by collectively answering 84% of the questions correctly with a mean score of 33.5 (SD = 3.7). The range of scores was 19 to 40. When compared to the Grossman and Caroleo (1992) study, these scores indicate that the study participants had a lower level of knowledge than the therapeutic recreation specialists attending the 6th Annual New York State Therapeutic Recreation Forum in 1991 whose range of scores were 29 to 40. The 1991 study participants collectively answered 89% of the questions correctly with 3.5% having perfect scores compared to 84% and 1.16% (n=3) respectively in this study. It is possible that the respondents in the 1992 study consisted of working professionals who may have had coursework knowledge from attending colleges and universities, attended HIV/AIDS training or inservices, worked with clients with HIV/AIDS and represented a greater geographical area. Additionally, the racial difference between the 1991 study (14.6% identified as either black or Hispanic) and this study (74% identified as either black or Hispanic) may have played a role in the lower scores. The National AIDS Treatment Advocacy Project (2001) and Clemetson (2001) maintain that communities of color have poor access to health care and are less likely to seek HIV/AIDS education and treatment.

An examination of the data from the three areas addressed in the questionnaire revealed that most participants indicated that they have some knowledge in all areas, with the greatest knowledge in the area of high-risk sexual and drug practices. The second greatest area knowledge was risk reduction steps, and lowest level of knowledge was in the area of misconceptions regarding HIV/AIDS. The majority of incorrect responses related to questions concerning misconceptions regarding HIV/AIDS with six of these questions being answered incorrectly by over one-third of the participants (see Table 2). These misconceptions included: (a) a great deal is now known about how the AIDS virus is transmitted; (b) healthy persons in AIDS risk groups should not donate blood; (c) sharing kitchen utensils or a bathroom with a person with AIDS poses no risk; (d) donating blood carries no AIDS risk for the donor; (e) a positive result on the AIDS virus antibody test can occur even for people who do not carry the virus; and (f) the virus does not penetrate unbroken skin. Furthermore, 21.8% of the participants (n = 58) believed that AIDS could be transmitted by mosquitoes and cockroaches. Twenty-three percent (n = 60) also believed that most current cases of AIDS were due to blood transfusions.

No significant differences were found when analyses were completed that examined knowledge of AIDS risk behaviors with demographic variables such as gender, age, ethnicity, sexual orientation, level of education, or whether the student had been tested for HIV. Interestingly, although statistically insignificant, students who indicated that they had a family member or close friend with HIV/AIDS scored slightly lower (M = 33.27) than those who indicated that they did not know anyone with AIDS (M = 33.5).

TABLE 2

Frequency and Percentage of Incorrect Responses (N = 258)

Questions and correct answers (T/F)	Incorrect n (%)
1. Intravenous drug users are at risk for AIDS when they share needles. (T)	2 (0.8)
2. People who become exposed to the AIDS virus through needle sharing can transmit the virus to others through sexual intercourse. (T)	4 (1.6)
3. A wholesome diet & plenty of sleep will keep a person from becoming exposed to the AIDS virus. (F)	6 (2.4)
4. It is unwise to touch a person with AIDS. (F)	7 (2.8)
5. Oral sex is safe if the partners "don't swallow." (F)	7 (2.8)
6. Withdrawal immediately before orgasm makes intercourse safe. (F)	7 (2.8)
7. Persons who are exclusively heterosexual are not at risk for AIDS. (F)	8 (3.1)
8. Showering after sex greatly reduces the transmission of AIDS. (F)	12 (4.7)
9. Female-to-male transmission of the AIDS virus has not been documented. (F)	14 (5.5)
10. When people become sexually exclusive with one another, they no longer need to follow safer sex guidelines. (F)	14 (5.5)
11. Most people who have been exposed to the AIDS virus quickly show Symptoms of serious illness. (F)	15 (5.9)
12. A person can be exposed to the AIDS virus in one sexual contact. (T)	15 (5.9)
13. Pre-ejaculatory fluids carry the AIDS virus. (T)	17 (6.6)
14. Keeping in good physical condition is the best way to prevent exposure to the AIDS virus. (F)	21 (8.2)
15. Only receptive (passive) anal intercourse transmits AIDS. (F)	26 (10.1)
16. Anal intercourse carries risk for AIDS virus transmission. (T)	26 (10.1)
17. A cure for AIDS is expected within the next two years. (F)	29 (11.3)
18. Most people who transmit the AIDS virus look healthy. (T)	30 (11.7)
19. Vaginal intercourse carries high risk for AIDS virus transmission. (T)	30 (11.7)
20. Oral intercourse carries risk for AIDS transmission. (T)	31 (12.1)
21. Condoms make intercourse completely safe. (F)	33 (12.8)
22. Mutual masturbation and body rubbing are low risk unless the partners have cuts or scratches. (T)	35 (13.6)
23. Coughing does not spread AIDS. (T)	35 (13.6)
24. By reducing the number of different sexual partners, you are effectively protected from AIDS. (F)	36 (14)
25. It is more important to take precautions against AIDS in larger cities than in small cities. (F)	37 (14.4)
26. Most persons exposed to the AIDS virus know they are exposed. (F)	39 (15.2)

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TABLE 2 *continued*

27. A person must have many different sexual partners to be at risk for AIDS. (F)	40 (15.5)
28. Intravenous drug users become exposed to the AIDS virus because the virus is often contained in heroin, amphetamines and the injected drug. (F)	41 (15.9)
29. No cases of AIDS have been linked to social (dry) kissing. (T)	44 (17.1)
30. A negative result on the AIDS virus antibody test can occur even for people who carry the virus. (T)	45 (17.5)
31. The AIDS virus can be transmitted by mosquitoes or cockroaches. (F)	56 (21.8)
32. Most present cases of AIDS are due to blood transfusions. (F)	60 (23.3)
33. People carrying the AIDS virus generally feel quite ill. (F)	69 (26.8)
34. Sharing toothbrushes and razors can transmit the AIDS virus. (T)	80 (31.1)
35. A great deal is now known about how the AIDS virus is transmitted. (T)	89 (34.5)
36. Healthy persons in AIDS risk groups should not donate blood. (T)	97 (37.6)
37. Sharing kitchen utensils or a bathroom with a person with AIDS poses no risk. (T)	105 (40.7)
38. Donating blood carries no AIDS risk for the donor. (T)	110 (42.7)
39. A positive result on the AIDS virus antibody test can occur even for people who do not carry the virus. (T)	147 (57)
40. The virus does not penetrate unbroken skin. (T)	151 (58.6)

The results from this study indicate that misinformation still exists regarding HIV/AIDS, particularly among groups strongly affected by the AIDS crisis. Nearly fifty-six percent ($n = 145$) of the participants were born after AIDS was first identified and have never lived without the presence of HIV/AIDS in their lives. Seventy-four percent ($n = 191$) of the sample identified as either Black or Hispanic, a population that accounts for the majority of all HIV cases in the United States (Institute of Medicine, 1997). Black women currently represent the fastest growing population of new HIV cases (Kaiser Family Foundation, 1998). An estimated 1 in 160 black women is HIV-positive while only 1 in 3,000 white women is HIV-positive (Clemetson, 2001). African American women represented the largest segment of participants 48.6% ($n = 89$). Blacks aged 18-24 years old worry more about HIV/AIDS than older age groups, and over half have been tested for HIV (Kaiser Family Foundation). In the present study represented:

- the fastest growing population of new HIV cases,
- those individuals most concerned about HIV/AIDS, and,
- individuals with exposure to HIV/AIDS education efforts from the time of their birth.

Therefore, it was expected that they would have scored much higher than those participants in the Grossman and Caroleo (1992) study.

Discussion and Recommendations

Educators in the field of recreation and leisure appear to be aware of the need to educate students and working professionals about HIV/AIDS as evidenced by the number of articles in professional journals, sessions offered at conferences and seminars, and chapters in textbooks that discuss HIV/AIDS, yet 29% ($n = 75$) of the participants in this survey of students answered less than 75% of the questions correctly. This level of misinformation regarding HIV/AIDS is alarming considering: (a) sexually active college students tend to practice serial monogamy and engage in higher-risk sexual behaviors (Sanderson, 1999), and (b) upon entering the work force, they will likely work with individuals who are either at risk for contracting HIV, or have HIV/AIDS, and will be expected to provide factual information regarding HIV/AIDS. This misinformation or lack of knowledge can stem from a variety of misperceptions. For instance:

1. College students perceive themselves as invulnerable to HIV. A belief that "it couldn't happen to me" and that "other" people get AIDS (Seal & Agonstinelli, 1996) leads to lack of interest in the topic.

2. College students fear contracting HIV/AIDS and believe that ignorance is bliss (Seal & Agonstinelli).

3. College students believe that they have no control over their own susceptibility to HIV transmission, so why bother taking steps to reduce risk (Venable, et al., 2000).

Reduced interest and concern regarding risk for transmission of HIV can lead to dramatic increases in HIV infection

Simply educating students about high-risk sexual and drug practices, risk reduction steps, and misconceptions regarding HIV/AIDS is insufficient if academics intend to educate for social responsibility. It is the moral obligation of the educator to assist students in the process of self-actualization regarding how their own behavior is socially irresponsible, e.g., not using condoms. Dahl (1992) defined social responsibility as "being accountable for one's actions, the actions of an agent representing oneself, and caring for the welfare of all individuals whom one serves" (p. 98). Social responsibility revolves around commitment to making one's community more humane, caring about everyone, and transmitting or facilitating knowledge that informs and empowers one to make moral decisions regarding how to conduct oneself. To educate for social responsibility, academics should encourage students to integrate HIV/AIDS knowledge into their own behaviors demonstrating care, commitment, and knowledge for the society in which they live.

Educators and students should not be the only individuals held accountable in regard to social responsibility. New York State requires pre- and post-test counseling for

individuals being tested for HIV. Pre- and post-test counseling should include information pertaining to all three areas of knowledge surveyed in this study, according to New York State, and HIV testing can not occur until the individual demonstrates an understanding of these knowledge areas. With nearly 50% of the participants in this study having been tested for HIV, it is disconcerting that only three students received perfect scores, nor did these students score higher than those who did not receive pre/post test counseling. Is it possible that HIV counselors, phlebotomists, and physicians are simply drawing blood without providing the AIDS knowledge component required for HIV testing? Are they simply ignoring the procedures rather than insuring that individuals fully understand the information they are presenting? Is it possible that individuals being tested for HIV are indicating that they understand these knowledge areas when, in fact, they do not? Should there be an actual "exam" that assists health care professionals to determine one's understanding of these knowledge areas? Individuals testing for HIV, too, must be held accountable for teaching social responsibility. Educators should consider inviting these professionals to guest lecture in their classes, especially if they are unsure of the facts, want a field perspective on HIV occurrence, or are uncomfortable talking about the topic themselves. Perhaps educators and health professionals need to develop collaborations and partnerships to ensure that the "educational" aspect of good care is occurring.

One of the major limitations of this study was the use of a convenience sample; therefore, generalization of the findings to all students in recreation and health-related fields is not possible. It is possible however, that students' knowledge of AIDS in other urban areas may differ significantly due to levels of exposure to AIDS information, working with or knowing PWAs, and individual attitudes and beliefs about HIV/AIDS. There are four recommendations for future research. The first is to replicate this study with a sample of recreation majors from a larger, more geographically diverse population. This may provide a more detailed illustration of students' knowledge of HIV/AIDS. Secondly, this study might be replicated with both recreation educators and students to determine and compare level of AIDS risk knowledge between the two groups. Thirdly, when replicating the study, providing participants with correct answers and a discussion regarding HIV/AIDS knowledge immediately following completion of the survey would be socially responsible. Providing survey participants with correct responses may assist in dispelling many of the myths regarding AIDS. It might also foster ongoing discussions among educators and students by creating a safe space to discuss sensitive issues. Finally, researchers could examine and compare the efficacy of the amount, quality, and method of HIV/AIDS information that is presented in the classroom setting in relation to other disabilities for all recreation majors.

This study indicates that there is a need for continued, if not heightened, emphasis on HIV/AIDS education. Future professionals and educators, who are today's students, require access to factual AIDS information in order for them to succeed as change agents in the field. Glenn and Dattilo (1993) found that recreation professionals who attended conferences and read health journals on AIDS had increased AIDS knowledge. Grossman

(1997) contended that increased access to information, factual communication, and reasoned challenges to false assumptions regarding HIV/AIDS are the only effective methods to changing AIDS-related attitudes and knowledge. Recreation educators need to be knowledgeable about HIV/AIDS. Educators need to understand and acknowledge that the students they educate may be engaging in high-risk behaviors that can lead to HIV infection. Educators may need to examine and overcome their own attitudes and biases towards AIDS as they educate students to be socially and morally responsible adults and professionals. The AIDS crisis is not over. The profession cannot afford to let efforts for HIV/AIDS education and awareness dwindle as countless numbers of people continue to become infected partly due to misinformation and lack of knowledge.

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