

seroconversion, particularly if there has been a substantial lag since the most recent negative test. □

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APPENDIX A—Further Details on the False-Positive and False-Negative Reports

False positives (n = 3). Two of these subjects reported having been tested in the same month and year as the index test. Both subjects were retested at the reporting visit, with another negative test result. The third subject reported only a year of testing (the same as the index test year) but reported three consecutive positive test results during that year. This subject was not retested and no validated reports

of prior positive test results were obtained.

False negatives (n = 6). Four of these subjects reported a test date that was either the same as the index test date or more recent. The fifth subject reported two negative test results during the same year as the index test date, but gave no month. However, at a later interview, this person reported negative test results for the same year as well as for the following year.

Inasmuch as documented cases of seroreversion from HIV seropositive to HIV seronegative are extremely rare, these cases in all probability reflect inaccurate reporting. The sixth subject reported a negative test result that was 2 years before the index positive result. We were not able to determine whether this reflected inaccurate reporting of the test result, or failure to report on the index test.

Cognitive and Attitudinal Impacts of a University AIDS Course: Interdisciplinary Education as a Public Health Intervention

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Introduction

The onset and spread of human immunodeficiency virus (HIV) infection has raised many social, ethical, and clinical issues that are of importance to individuals from varied backgrounds. A university course that provides a detailed education about HIV infection and acquired immunodeficiency syndrome (AIDS) serves to develop expertise in future community and professional leaders, and may enlighten society's response to this health care and social crisis. The educational topics incorporated in a disease-specific educational offering are applicable beyond the focus on AIDS. AIDS was dealt with in this course not only as a disease, but

also as a case study of how societies deal with contagion, stigma, disability, death, social stratification, and access to scarce resources.

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ABSTRACT

This paper describes an interdisciplinary, variable credit-bearing university course on acquired immunodeficiency syndrome (AIDS) that enrolled 429 students. Pre- and post-course questionnaires were used to assess knowledge and attitudes relative to AIDS and these were compared to National Health Interview Survey findings. Considerable cognitive and attitudinal changes occurred over the course period. University courses, taught annually, were found to be an efficient mechanism for educating large numbers of future community leaders and professionals about AIDS. (*Am J Public Health*. 1992;82:569–572)

TABLE 1—Risk Factor Knowledge: National, Precourse, and Postcourse Findings

	Percent Responding "Very or Somewhat Likely"		
	NHIS Ages 18–29 ^a (n = 2194)	Precourse (n = 339)	Postcourse (n = 245)
Question: How likely do you think it is that a person will get AIDS or the AIDS virus infection from:			
Living near a hospital or home for AIDS patients	5	0	0
Working near someone with the AIDS virus	11	1	0
Eating in a restaurant where the cook has the AIDS virus	13	6	4
Kissing—with exchange of saliva—a person who has the AIDS virus	51	26	15
Shaking hands with, touching, or kissing on the cheek someone who has the AIDS virus	8	0	0
Sharing plates, forks, or glasses with someone who has the AIDS virus	26	7	2
Using public toilets	17	4	1
Sharing needles for drug use with someone who has the AIDS virus	98	99	99
Being coughed or sneezed on by someone who has the AIDS virus	23	8	2
Attending school with a child who has the AIDS virus	6	0	0
Mosquitoes or other insects	30	10	4

^aHealth Information Survey data from 1989 provisional estimates, January to March 1989.

TABLE 2—Individual Risk Factors and HIV Testing Experience: National, Precourse, and Postcourse Findings

	Those Responding "Yes"		
	NHIS Ages 18–29 ^a (n = 2194)	Pre- course (n = 339)	Post- course (n = 245)
	%	%	%
Did you answer "yes" to having any one of 6 possible HIV risk statements (NHIS)?	3	6.4	9.5
Have you ever had your blood tested for the AIDS virus?	26	18	23
If yes, was the test			
part of a blood donation	67	60	60
part of a blood transfusion	0	1	4
voluntarily sought	19	24	32
part of some other activity that requires a blood sample	16	21	19

^aHealth Information Survey data from 1989 provisional estimates, January to March 1989.

Universities in the United States have responded to AIDS by incorporating relevant information into courses currently offered to students and by developing new courses.^{1–4} Cross-sectional surveys and other reports have defined gaps in HIV-related knowledge and attitudes among college students.^{5–27} However, the literature on the impact of AIDS education suggests that knowledge and attitude changes do occur over the course of educational programs.^{1–3,28–31}

This paper describes a study of an AIDS course as a public health intervention and examines cognitive and attitudinal changes that occurred in students over the course period.

The course, "AIDS: Principles, Practices and Politics," combined faculty and resources from health and social science disciplines. One faculty member from the Schools of Dentistry, Medicine, Nursing, Pharmacy, and Public Health participated in organizing and teaching

the course, thus exemplifying the interdisciplinary approach necessary to provide care and resolve the AIDS crisis.

Students, who were drawn from every school on the university campus, included undergraduates (69%), professional/graduate students (28%), and others (3%). Offered at one to three credit levels, the course involved weekly lectures, readings, and a graduate seminar. Enrollment between 1989 and 1992 has varied from 250 to 550 students per semester, with 429 enrolled in 1989.

Methods

In 1989, an anonymous precourse questionnaire was administered to students to examine their risk factors, knowledge, and attitudes. Three hundred and thirty-nine students took the pretest, and their responses were compared with those of the 245 students who took the posttest. The data were treated in the aggregate, as the anonymity of the instrument precluded matching individual precourse and postcourse questionnaires. Some of the questions were drawn from the National Health Interview Survey (NHIS),³² and findings include comparisons with these national data. Postcourse test mean responses were compared with precourse means using *t* tests and chi-square.

Results

Student knowledge about the risk factors for infection with the AIDS virus are displayed in Table 1. When compared with national surveys of US persons aged 18 to 29, from the same time period (NHIS, January to March 1989),³² it is evident that our sample of university students was less concerned about casual HIV transmission.

Students starting this course were more educated and accurate about risk factors for HIV infection than those in the national sample. Though students expressed no concern about living near, shaking hands with, touching, kissing on the cheek, or attending school with persons infected with the AIDS virus, the precourse survey showed some concern about other forms of casual contagion. These included sharing eating utensils (7%), eating in a restaurant where the cook has the virus (6%), and being coughed or sneezed on by an infected person (8%). There was also some concern about mosquitoes and other insects (10%). The relatively low level of precourse concern or misinformation was reduced during the course.

TABLE 3—Precourse and Postcourse Attitudes about Specific Issues

	Those Responding "Positive"				Chi-Square (df = 1)	P
	Precourse (n = 339)		Postcourse (n = 245)			
	%	#	%	#		
Health Care						
Should doctors be allowed to refuse to care for someone who has the AIDS virus?	27.8	(93)	14.1	(34)	15.202	.000***
Should nurses be allowed to refuse to care for someone who has the AIDS virus?	29.3	(98)	15.8	(38)	14.134	.000***
Should health care workers be notified if a patient has tested positive for the AIDS virus?	90.2	(303)	84.4	(206)	4.354	.037*
Should health officials be allowed to distribute information that contains sexually explicit language as part of AIDS prevention efforts?	91.3	(306)	96.3	(234)	5.625	.018*
Should health officials be allowed to distribute information that contains sexually explicit drawings as part of AIDS prevention efforts?	81.2	(272)	90.5	(220)	9.703	.002*
Should public health and medical workers take the responsibility to notify the spouse or sexual partner(s) of those who test positive for the AIDS virus?	76.3	(254)	81.5	(194)	2.252	.133
Schools						
Should children who have the AIDS virus be allowed to go to school with other children?	94.9	(316)	96.7	(235)	1.112	.292
If you had a school-age child, would you worry about him or her catching AIDS from a classmate?	34.9	(116)	25.5	(62)	5.832	.016*
Employment						
Should coworkers be allowed to refuse to work near someone who has the AIDS virus?	38.7	(130)	27.7	(67)	7.583	.006**
Should employers be allowed to fire workers who have the AIDS virus?	9.3	(31)	7.4	(18)	0.647	.421
Should the legislature develop legislation to explicitly prohibit discrimination against persons with AIDS in North Carolina?	86.5	(288)	91.3	(221)	3.226	.072
Insurance						
Should health insurance companies be allowed to ask questions to determine if someone belongs to a high-risk group for AIDS before issuing a policy?	47.0	(157)	36.4	(87)	6.407	.011*
Should insurance companies be allowed to exclude coverage specifically for conditions resulting from the AIDS virus?	15.0	(50)	4.2	(10)	17.635	.000***

Note. df = degrees of freedom.

* = $P < .05$, ** = $P < .01$, *** = $P < .001$.

At the start of the course, 18% of the students indicated that their blood had been tested for HIV (Table 2); this was less than NHIS cohort findings (26% among 18- to 29-year-olds). Over the period of the course, an additional 5% were tested. Most students reported that HIV testing had occurred through a blood donation, with fewer than a third specifically seeking a blood test voluntarily. When presented with a list of risk factors before the course, 6% of the students identified themselves as members of a high-risk group. This was twice the rate reported for the 18- to 29-year-old cohort in the NHIS.

At the end of the course, an additional 3% (amounting to a postcourse total of 9.5%) rated themselves as having behaviors that might place them at risk for HIV infection.

Attitudes toward the rights of health workers to refuse to care for persons infected with HIV changed over the course period (Table 3). There was a significant reduction in the percentage of those who indicated that physicians (-13.7%) and nurses (-13.5%) had such a right. Attitude changes were found, demonstrating by the course end increased understanding and tolerance for persons who are HIV positive.

Anonymous course evaluation forms were distributed after the final class sessions. Students largely rated the course and the lectures as good or excellent. The class most highly ranked was "The Human Side of AIDS," a panel of persons with AIDS. Ninety-five percent of the students would have recommended the course to others.

Discussion

This initiative in university interdisciplinary course development shows that large numbers of university students will

enroll in a credit-bearing course on AIDS. Variable-credit course options will attract undergraduate lecture course students as well as graduate seminar students.

This project indicates that many and significant changes occur in student knowledge and attitudes about AIDS

over the period of a university course on AIDS. It suggests that other universities might use this interdisciplinary educational approach and public health initiative to educate students—our future community leaders and professionals—about AIDS. Health sciences professional schools are in a unique position to begin similar campuswide educational programs that demonstrate in education the interdisciplinary nature of the work required in practice. □

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