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PSYCHOLOGY AND AIDS EDUCATION: REDUCING HIGH-RISK SEXUAL BEHAVIOR

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ABSTRACT: Several years of research produced a 1-credit AIDS education class that is effective in increasing student knowledge and changing high-risk sexual behavior. The course integrates information on AIDS, other sexually transmitted infections, sexual assault prevention, and related issues with self-management and sexual decision-making skills. The class is taught in small sections led by 2-person teams of peer instructors and uses a discussion and exercise approach to present the material. Data from a two semester course evaluation indicate a substantial decrease in the percentage of students engaging in high-risk sexual behavior. The course was replicated at three other universities and is a way of actively involving psychology departments and behavior analysis programs in the important activities of AIDS prevention and peer education.
Key words: AIDS/HIV education, sexual decision-making, peer instruction, self-management

The Centers for Disease Control recently released the results of the 1995 National College Health Risk Behavior Survey (Douglas et al., 1997). The report documented high levels of a variety of behaviors that put college and university students' health at risk. Of particular concern are a cluster of behaviors that increase the chance of students contracting sexually transmitted diseases including HIV/AIDs. This pattern of behavior consists of high levels of binge drinking (34%), high rates of sexual intercourse with multiple partners, and low frequencies of condom use (30% using a condom during last intercourse). Other investigators have also found that high risk sexual behaviors are common in the heterosexual college population (e.g., Caron, Davis, Halteman, & Stickle, 1993; DiClemente, Forrest, Mickler, & Principal Site Investigators, 1990). Consistent with this pattern are the findings that 50% of new HIV infections occur in people under the age of 25 with women showing the most rapid increase. Further, approximately 86% of all sexually transmitted infections (STIs) occur in persons in the 15-to-29 age range.

With over 14 million students attending the nation's colleges and universities, institutions of higher education would seem to be an ideal setting for providing instruction and training on how to deal with the issues of sexual behavior. However, designing and implementing effective programs for preventing the transmission of HIV and other STIs has proven to be difficult. Choi and Coates (1994) reviewed the area and found few programs that have actually affected AIDS risk behaviors. The exceptions to their observation have been multi-component programs, Coates, 1990; Kelly, St. Lawrence, Hood, & Brasfield, 1989, designed to impact the participants' overall pattern of behavior. To date, only two successful interventions have been reported with college students (Fisher, Fisher, Misovich,

Kimble, & Mulloy, 1996; Horn & Brigham, 1996), and each used a multi-component approach.

The course described in this paper, Psychology 106, and its supporting structure are the product of analyzing literature on AIDS prevention, especially the work of Kelly and his associates (e.g., Kelly, 1995a, 1995b) and the Fishers (e.g. Fisher et al., 1996), and several years of our own research (Brigham, Gilbert, Donahoe, Thomas, & Zemke, 1997; Horn & Brigham, 1996). The resulting program has several critical features worth noting. First, as a graded 1-credit course offered as an optional component of Introductory Psychology, it has both academic and experiential content. Second, the course involves small sections of approximately 15 students with instruction based on discussion and exercises with minimal lecture. Third, students actively and systematically collect data on their own behavior and evaluate the information in relation to their own goals and values. Fourth, teams of two junior-senior-level undergraduate peer instructors trained in both the course content and instructional procedures teach the sections. Finally, information on HIV/AIDS is presented within the context of an integrated conceptual framework for personal and sexual decision-making that also covers other STIs, sexual assault, and related issues. The features of the program have evolved as a function of experimental and qualitative research and continue to be assessed each time the class is taught.

COURSE DEVELOPMENT

The Psychology Department offered the resulting program as a regularly scheduled, 1-credit, graded course. In the first class session, all of the students received an extensive description of the course content and personal data reporting requirements and signed informed consent forms. For the semester, 193 students enrolled and were assigned to 12 sections of 12-18 students each that met once a week for a 50-minute session for the remainder of the 15-week semester. The peer instructors received extensive training in both program content and how to teach in small groups before the semester began.

Instructors used discussion, practice, and homework to cover the course material. Each session focused on a specific topic from the course manual (Brigham, 2001). Some of the topics covered were basic self-management skills; information about HIV and AIDS; the changing demographics of AIDS; HIV testing, risk perception and assessment; sexual communication; talking about condoms and AIDS; assertiveness concerning sexual issues; condom acquisition, availability and use; and how to anticipate and mitigate risk factors such as alcohol or hazardous situations. All topics had related activities, exercises, and role play rehearsals as the primary method of instruction in addition to the discussion period. For example, in one of the class sessions concerning condoms, the students compared and rated a selection of condoms representing the various types available in terms of appearance, strength, smell, and apparent sensitivity. The students then reported their ratings, a process that generated fairly animated

discussion and appeared to reduce students' reluctance to talk about condoms in later sessions.

In addition to the in-class exercises, each session concluded with a homework assignment. Homework included discussing HIV with a friend, purchasing and carrying condoms, giving condoms to a friend, calling an HIV/STD resource line, and calling a public health center to get information about HIV testing. Students wrote up homework assignments in their workbooks and discussed the assignments at the beginning of the next class. In addition, the students self-monitored their sexual behavior, condom use and related activities and turned in an anonymous self-report at the beginning of class each week. Finally, over the course of the semester, students developed an Individual Action Plan. In this process, students took the information and skills from the class and applied them to their own personal situation. In this manner, students could develop a plan that fit their own values and goals whether they were sexually active and multiple-partnered, monogamous, or abstinent. The overarching strategy in the design of materials, exercises, and homework was to give students experience with close approximations to the key self-management and health protective behaviors thought to be important in AIDS prevention rather than simply talking about them. Grading in the course was based on attendance, participation, completing the weekly self-report forms, and a final examination covering HIV/AIDS and self-management.

In addition, to counter student perception of low risk, the topics covered in the class were broadened. It is clear that the behaviors that put individuals at risk for becoming HIV positive also put them at risk for contracting other STIs, becoming pregnant, or becoming involved with sexual assault. Further, these consequences are much more probable and more immediate than AIDS (e.g., 650,000 new cases of Chlamydia per year versus 40,000 new AIDS cases.) Therefore, new sections on the medical and epidemiological characteristics of such common STIs as Chlamydia, Herpes, and the Human Papilloma Virus (HPV), as well as statistics and risk factors related to sexual assault and unplanned pregnancies were added. Finally, abstinence was integrated into the self-management and sexual decision-making skills taught in the course.

SELECTION, TRAINING, AND SUPERVISION OF PEER INSTRUCTORS

As noted earlier, peer instructors are the key to delivery of a quality course on AIDS education and sexual decision making, and developing procedures to insure that the peer instructors do the best possible job of presenting the class material is critical. Advanced undergraduate students either self-nominated or were nominated by faculty from across the campus to become peer instructors. Peer instructors did not have to be psychology majors but must have taken introductory psychology and at least two other psychology courses to provide the background to master the concepts they taught. The nominated student is interviewed and at that time, the duties and responsibilities of the peer instructor are fully explained, and the prospective peer instructor has an opportunity to ask questions about the

program. If the student is still interested, the other requirements are reading a paper on self-management and passing a quiz over self-management concepts. Once students have qualified, they read and sign a contract that details their responsibilities and duties in the program. The supervising professor or the graduate assistant also signs the contract.

Peer instructor training begins with a 10-hour workshop spread over 2 days followed by 90-minute weekly meetings during the semester. Training is based on a 250-page instructor's guide (Donahoe, Peeler, & Brigham, 2001) that provides extensive background information on every topic covered in the course and basic outlines for each class session. The initial workshop is designed to give peer instructors an overview of course procedures and instructional objectives, an understanding of the material to be covered in the first 5 weeks of the semester, as well as and instruction and practice in how to teach in the small section format used in the class. The instructors are also organized into two-person teams and assigned class sections during the workshop. The teams then have the opportunity to practice working together and receive feedback from experienced peer instructors. During the semester, the peer instructors are divided into groups of 10, who then meet weekly with the graduate assistant and other support staff to review and practice the next class session. To make the training more effective, the peer instructors must review and pass a quiz over the next weeks' material before attending the next training session.

In addition to the weekly training meetings, the supervisory staff periodically attend and review the actual class sessions. Each team of peer instructors is observed three times over the course of the semester. The process is not designed to force everyone to teach in the same fashion and cover each topic in exactly the same way. Rather, the goal is to help the students become better instructors by providing feedback on what they did well or poorly and to insure that the main points and activities are effectively covered. Although the first review clearly generated a fair amount of anxiety for the peer instructors, they uniformly found it to be a very valuable and rewarding experience. Overall, these procedures appeared to do a good job of training the peer instructors to effectively teach the class.

EVALUATION OF THE REVISED COURSE

The first semester Psychology 106 enrolled 193 students. Over the course of the semester, 11 students dropped the class for various reasons. This is a drop rate of less than 6% and is on the low side of the distribution of withdrawal rates for introductory classes (mean = 8.4%, registrar's office, 1998). Of the 182 students, 101 were women, and the mean age of the group was 19.2 years. Approximately 15% of the class were members of an ethnic minority group and the majority of the class were freshmen (115). The modal student was an 18-year-old white female freshman. Nonetheless, the course did enroll a higher percentage of men and ethnic minority students than the average psychology class. This overall pattern of participation was replicated during the next fall semester when

	Cohort			
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Patterns of Sexual Activity	Pre	Post	Pre	Post
Abstinent	33 (18%)	81 (46%)	82 (41%)	105 (53%)
Monogamous (100% condom use)	4 (2.5%)	32 (17%)	5 (2.5%)	17 (8.5%)
Multi-partnered (100% condom use)	1 (.5%)	34 (18%)	5 (2.5%)	30 (15%)
Monogamous or serially monogamous (erratic or no condom use)	65 (35%)	17 (9%)	46 (23%)	22 (11%)
Multi-partnered (Erratic or no condom use)	79 (44%)	18 (10%)	61 (31%)	25 (12.5%)

Table 1. Patterns of Sexual Activity: Fall, 1996 and Fall, 1997.

199 out of 210 students completed the course.

All data in the study were collected anonymously using an individually generated continuity number that allowed each student's data to be grouped together without ever using students' names. This procedure was developed by Kearney, Hopkins, Mauss, and Weisheit (1984) and removes major demand characteristics from the collection of longitudinal data. Further, the peer instructors never had access to their students' data. The students' self-reported patterns of sexual activity appear in Table 1. Sexual activity was assessed in the initial class meeting using an anonymous retrospective instrument,

"The Sexual Background Survey" (Horn & Brigham, 1996) where respondents answer specific questions about their sexual behavior and perceived patterns of activity over the past month and year. Using information from the past month, it was possible to categorize students in terms of their sexual behavior at the beginning of the course. As shown in Table 1, the students' patterns of activity were consistent with those found by the Centers for Disease Control (Douglas et al., 1997) and others (e.g., Catania et al., 1992). In year 1, the largest number identified themselves as multi-partnered and as using condoms inconsistently. Another substantial group identified themselves as sexually active but monogamous. However, of these 65 students, 36 reported having two or more partners in the past year while only four reported 100% condom use. This pattern

of sexual behavior is called serial monogamy and also puts individuals at risk for contracting STIs. A final cluster of 33 students indicated they were currently abstinent, and of those, 25 stated they had never had sexual intercourse.

At the completion of the course, the students' patterns of sexual activity were re-evaluated based on their anonymous weekly report forms. This form was used for the final evaluation of the students' behavior because it covered the week just ended in detail, and research suggests that this method generates the most accurate self-report data (Babor, Brown, & Del Bocia, 1990; Barlow, Hayes, & Nelson, 1984; Jaccard & Wan, 1995). The classification was based on the data from the last 6 weeks of semester with the additional requirement that the pattern of behavior be displayed for the entire period, (i.e., the person must have been abstinent for all six weeks to be classified as abstinent). The patterns of sexual activity reported for the final period of the semester were substantially different from those of the first reporting period. The largest change was the decline in the multi-partnered erratic condom use group from 79 to 18. In addition, there was an overall increase in the numbers of students who were abstinent at the end of the semester and those who reported being in monogamous relationships but using condoms.

In order to analyze these data, each pattern of sexual behavior was assigned a risk value of 1 to 5 with abstinence having a value of 1 and multi-partnered (erratic or no condom use) a 5. Using a paired samples test, the initial mean risk level (3.84) was compared to that found at the end of the semester (2.24). This difference was significant at the .001 level [$t(182) = 18.41$]. A similar analysis of year 2 data showed an initial mean risk level of 3.00 and final mean risk of 2.20. This difference was also significant at the .001 level [$t (198) = 11.23$].

The course has also been successfully taught at three other large public universities with similar results. These replications support the inference that participating in the class was affecting the students' behavior.

Perhaps the most interesting finding of this evaluation is the increase in the number of students who reported being abstinent at the end of the class. Neither the experimental nor the control groups in the Thomas (1996) study displayed any significant changes in the numbers of abstinent students from pre- to post-testing suggesting such changes are not a common trend seen in student behavior over the course of a semester. Similarly, Fisher et al. (1996) did not report observing any significant changes in the number of abstinent students in their university-based study.

At this point, it is not possible to offer a definitive theoretical explanation for the reported behavior changes. However, categorizing the primary explanations given by the students for their abstinence or 100% condom use, which were feeling of control over their lives, and health concerns, may suggest a possible explanation. There is considerable evidence that being able to control the environment and exercise choice are powerful positive reinforcers. Research in both the laboratory (Brigham & Sherman, 1971; Brigham & Hockstra, 1985; Catania & Sagvolden, 1980; Fisher, Thompson, Piazza, Crosland & Gotjen, 1997; Rodin, 1976) and applied settings (Brigham, 1979; Rodin & Langer, 1977; Savage,

Perlmuter, & Monty, 1979) demonstrates the value of choice. People work harder in order to exercise choice and report greater satisfaction when able to make choices. Catania (1998) suggested that organisms' preference for choice maybe unlearned with a phylogenic basis.

If being able to make choices and control the environment are reinforcing, it is feasible that the students acquired the self-management skills and used them to exercise choice and control in this important area of their lives. If this is the case, then HIV/AIDS prevention programs may be more effective if they emphasize the reinforcing aspects of learning to control the environment and exercise real choice rather than the risk and negative consequences associated with the disease. However, such conclusions require a more sophisticated research design and data analysis than was possible in this study.

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