death") in Northern Ireland. J Prev Soc Med 25: 119-134 (1971).
18. Brandt, C. D., et al.: Sudden infant death syndrome and viral respiratory disease in metropolitan Washington, DC. *In* SIDS 1974: proceedings of the Francis E. Camps International Symposium on Sudden and Unexpected Deaths in Infancy, edited by R.R. Robinson. Canadian Foundation for the Study of Infant Death, Toronto, Ontario, Canada, 1974, pp. 117-129.
19. Forsyth, K. D., et al.: Lung immunoglobulins in the sudden infant death syndrome. BMJ 298: 23-26, Jan. 7, 1989.
20. Mitchell, I., et al.: Frequency and severity of apnoea in lower respiratory tract infection in infancy. Arch Dis Child 58: 497-499 (1983).
21. Lidwell, O. M., and Sommerville, T.: Observations on the incidence and distribution of the common cold in a rural community during 1948 and 1949. J Hyg Epidemiol Microbiol Immunol 49: 365-381 (1951).
22. Dingle, J. H., Badger, G. F., and Jordan, W. S.: Illness in the home: a study. Western Reserve Press, Cleveland, OH, 1964, p. 80.
23. Mowat, D. L., and White, C.: Medical examination of school entrants: later school problems and absenteeism of attendees and non-attendees. Am J Public Health 75: 395-396 (1985).
24. Guntheroth, W. G., Lohmann, R., and Spiers, P. S.: Risk of sudden infant death syndrome in subsequent siblings. J Pediatr 116: 520-524 (1990).
25. Fedrick, J.: Sudden unexpected death in infants in the Oxford Record Linkage Area. Brit J Prev Soc Med 27: 217-224 (1973).
26. McGlashan, N. D., and Grice, A. C.: Sudden infant deaths and seasonality in Tasmania, 1970-1976. Soc Sci Med 17: 885-888 (1983).
27. Deacon, E. L., O'Reilly, M. J. J., and Williams, A. L.: Some statistical and climatological aspects of the incidence of the sudden infant death syndrome. Aust Paediatr J 15: 248-254 (1979).
28. Goldberg, J. R., Horning, T., Yamashita, T., and Wehrmacher, W.: Age at death and risk factors in sudden infant death syndrome. Aust Paediatr J 22 suppl. 1: 21-28 (1986).

Equipment

A. SPSS\PC+, v. 3.0. SPSS, Inc., 444 N. Michigan Ave., Chicago, IL 60611; tel. (312) 329-3300.

Feasibility of Interactive Videodisc Technology To Teach Minority Youth About Preventing HIV Infection

STEVEN P. SCHINKE, PhD
MARIO A. ORLANDI, PhD, MPH
ROBERT F. SCHILLING, PhD
CLIFF PARMS, BA

Dr. Schinke is Professor, and Dr. Schilling is Associate Professor, at the Columbia University School of Social Work. Dr. Orlandi is Chief, Division of Health Promotion Research, and Mr. Parms is Senior Research Scientist, American Health Foundation.

Support for the preparation of this paper was provided by grant AI26387, awarded by the National Institute of Allergy and Infectious Diseases, Public Health Service.

Tearsheet requests to Steven Schinke, Columbia University, School of Social Work, 622 West 113th St., New York, NY 10025, tel. 212-854-8506.

Synopsis

Hispanic and African American adolescents are more likely than white Anglo youth to harbor misconceptions about acquired immunodeficiency syndrome (AIDS) and are also more likely to engage in intravenous drug use and sexual intercourse. This paper describes the development of an AIDS prevention curriculum that uses an interactive videodisc program to teach skills for interventions. Focus group and expert panel studies yielded suggestions for intervention vignettes and scenes relevant to Hispanic and African American adolescents. The authors then developed and produced a sample curriculum, specifically designed for Hispanic youth. Content was designed to build knowledge, attitudes, and skills in handling situations where young persons are at risk for human immunodeficiency virus (HIV) infection.

The feasibility of the finished pilot product was tested with adolescents and with professionals who serve ethnic and racial minority youth. Adults and Hispanic adolescent viewers rated the videodisc as enjoyable, interesting, and likely to achieve positive effects with the intended target population. Findings suggest that the interactive videodisc is a useful way to interest and help Hispanic adolescents learn ways of reducing their risk of contracting and spreading HIV infection through lifestyle practices. This developmental research in the use of interactive videodisc also provides a basis for further investigation.

AMERICANS OF HISPANIC and African heritage account for 40 percent of all cases of acquired immunodeficiency syndrome (AIDS) among men, 79 percent of cases among female and heterosexual male IV drug users, 72 percent of all cases among women, and 77 percent of all cases among children (*1,2*). Among adolescents, Hispanics and African Americans are more likely than white youth to harbor misconceptions about AIDS (*3,4*). As for behavioral risk factors, rates of intravenous drug use, sexual intercourse, and sexually transmitted diseases are higher for Hispanic and African American adolescents than for nonminority adolescents (*5–7*).

Behavioral risks associated with acquired immunodeficiency syndrome are preventable among ethnic and racial minority populations (*8*). Yet few tested interventions exist to help Hispanic and African American youth prevent infection with human immunodeficiency virus (HIV). In an effort to test scientifically and promulgate such interventions, the authors describe the development of an AIDS prevention curriculum, combining skills intervention and interactive videodisc.

Skills Intervention

Skills used in interventions, which are derived from social learning theory, can help adolescents avoid problems and stay healthy by employing certain techniques of cognition and behavior. Those skills encompass problem solving, coping, and interpersonal communication. Research supports the efficacy of intervention skills to prevent drug abuse and to postpone sexual activity among minority group adolescents (*9–11*). Intervention skills have considerable potential for preventing HIV infection among Hispanic and African American adolescents (*12,13*).

The realization of that potential begins with adaptations of interventions that are culturally sensitive to Hispanic and African American youth (*14–16*). Once adapted, the skills for interventions will prevent AIDS to the extent that they attract, interest, and influence at-risk youth (*17–19*). The interactive videodisc is a most promising way to inform and influence Hispanic and African American youth about health risks.

Interactive Videodisc

The interactive videodisc combines the audiovisual capacities of videotape with the storage capacity of laser discs. Videodisc programs come in three levels. Level I videodiscs noninteractively present information, such as in point-of-sale presentations. Via intelligent playback devices, level II videodiscs interact with viewers by a user interface, often a remote control similar to a television channel changer. Level II videodiscs concurrently store read-only information and record viewer entries. Level III applications require both videodisc players and microcomputers for large data storage and complex programming.

The level II videodisc is an attractive vehicle for delivering AIDS prevention material. Because it is interactive, the level II videodisc invites and holds adolescents' interest. By interactive branching with videodisc programs, youths elicit information in areas of greatest concern to them (*20–22*). The videodisc's display and audio features obviate the need for advanced reading skills (*23,24*). For youths who are out of school and who respond poorly to didactic instruction, videodisc is a viable way to deliver prevention information and promote skill development (*25*).

A videodisc intervention can offer youths confidential access to objective information. Confidentiality is essential if adolescents are to link risks of HIV infection with their behavior. Objectivity is crucial for young people to learn about HIV infection risks from value-laden activities.

Videodiscs can provide new opportunities for learning through modeling, role playing, and feedback (*26*). Modeling occurs when animated characters or filmed actors display interpersonal skills, or even speak aloud the thoughts used in avoiding high-risk situations. Similarly, youths can respond to queries on the videoscreen, thereby approximating the challenges and decisions that confront people in high-risk circumstances. Videodiscs can provide corrective feedback, and depending on the sophistication of the programming, offer simple messages that reinforce the desired responses or subtle cues that warn respondents to alter their initial course of action.

Interactive videodisc programs could help Hispanic and African American adolescents learn skills to prevent HIV infection and instill in youths the confidence to apply these new skills. Among adolescents from disadvantaged backgrounds, interactive modes potentially can bring a sense of self-efficacy as youths control their progress and learning (*27,28*). Moreover, ethnic-racial minority families are at least as likely as majority culture households to have video equipment (*29*). Although interactive video equipment is still in relatively few

homes, access will become more common as prices drop and as schools and community institutions acquire more units.

Culturally sensitive and interactive interventions will appeal to high-risk adolescents and to professionals who work with them. Commercially produced videodiscs in interactive modes are popular in educational and kindred institutions that serve youth. Industry statistics show annualized sales for videodisc players and software in excess of $100 million (*30,31*). With the bulk of these sales for educational and training purposes, access to videodisc technology is increasing (*32,33*). Hispanic and African American adolescents' use of interactive videodisc will grow as hardware costs decline and markets expand (*34,35*). To capitalize on these trends, development and scientific testing of AIDS prevention software for interactive videodiscs must begin now to anticipate and meet future needs and capacities.

Feasibility Study

In this developmental study, we engaged in four steps to test the feasibility of the interactive videodisc for educating Hispanic youth about HIV infection. The four steps were to conduct focus group and expert panel studies, develop a curriculum and shooting script, produce a videodisc, and pilot test the videodisc.

Focus group and expert panel studies. These initial studies served three objectives. First, focus group and expert panel studies generated data on the nature, specificity, and delivery of interventions for preventing HIV infection among Hispanic and African American adolescents. Second, the studies yielded directions for appropriate vignettes and scenes to be taped. Third, focus group and expert panel studies produced content on risk factors and illustrative examples of preventive intervention.

Focus groups. Focus groups consisted of Hispanic and African American adolescents from the East Harlem, Bedford-Stuyvesant, and South Bronx areas of New York City. Groups of 6 to 10 adolescents, under joint Hispanic and African American leadership, met at recreational and youth services agencies, centers, and facilities. Each focus group followed a semistructured interview format of stimulus questions, probes, and summary statements (*36*).

Seven focus groups conducted over 2 months involved 58 Hispanic and African American adolescents (31 young women, 47 young men; mean age = 12.3 years). Each focus group began with introductory remarks about the purpose and task. After reviewing ground rules to ensure candor and imaginative thinking, leaders assured participants of anonymity. Each focus group was guided by a written agenda, posted on a flip chart.

'Research supports the efficacy of intervention skills to prevent drug abuse and to postpone sexual activity among minority group adolescents.'

Through branched questions, focus group data were first obtained about the nature, specificity, and delivery of information on AIDS prevention. Qualitative and quantitative findings from focus groups generated conclusions on the means of reaching high-risk youth. Findings from focus groups also shed light on the circumstances and situations that Hispanic and African American adolescents face relative to HIV infection risks.

For example, youths agreed that drug abuse and early and promiscuous sexual activity were sufficiently dangerous to warrant repeated information on these topics. Focus group members said that by underscoring the risks associated with drug use and with unsafe sexual activity, preventive intervention pertinent to HIV infection could build on other efforts to target these behaviors.

Regarding the means of reaching at-risk adolescents, focus group members commented on relevant settings such as schools and churches; discussed whether videodisc technology and AIDS prevention topics should be offered as part of science courses, as self-study modules in school libraries, or as activities in after school programs; and considered the merits of teachers and other adults who would supervise and instruct adolescent participants. Focus group members agreed that programs to prevent HIV infection cannot limit delivery of interventions to school settings. Rather, group members said that school students do not represent the population most in need of prevention. Participants recommended prevention efforts suitable for out-of-school Hispanic and African American youth in such sites as neighborhood outreach programs, fast food establishments, Job Corps centers, and even bodegas (grocery stores).

When focus groups considered intervention agents—persons who convey AIDS prevention mes-

sages—they agreed on age, sex, and social status characteristics. Age parameters suggested by focus groups varied with the target population. Group members suggested that early adolescents would respond best to adults; older adolescents would respond best to other youths.

As expected, group members preferred that persons of their own sex deliver intervention content on sexuality. Unexpected were group members' preferences for positive role models and not necessarily for high-status delivery agents. Group members preferred intervention agents who were articulate, attractive, and of the same ethnic-racial background as youths in the intervention program.

Regarding mechanisms to deliver AIDS prevention programs, focus group members supported multimedia and audio-video presentations. Extensive use of video was recommended by most focus group members. They indicated that successful AIDS prevention content will use scenes and language that are familiar to minority youths. They recommended everyday street language and inclusion of high-risk situations familiar to many Hispanic and African American adolescents. Focus group members also stressed the importance of information on sexual risk taking. Youths said that the frequency of adolescents' sexual activity and their curiosity about sexual topics created a receptive climate for conveying such information. For example, panelists stated that content on prevention should deal honestly with the tactics youths often employ in manipulating same- and opposite-sex peers around matters of sex and intimacy.

Youths observed that drug use is also a pernicious temptation. They were aware that crack cocaine is associated with promiscuous sexual activity and is a possible gateway into subsequent injection of heroin or cocaine. Focus group members who were knowledgeable about these risk behaviors stated that videodiscs could interest adolescents who might not be receptive to discussions facilitated by teachers or other adults.

Expert panels. Consisting of Hispanic and African American human services professionals, expert panels were held at community and social service agencies in East Harlem, the South Bronx, and Central Harlem. Expert panels consisted of five to eight members and two leaders. Six expert panels convened in a 2-month period had a total of 42 members. All panel members reported their primary job assignment as providing services to Hispanic and African American adolescents or as supervising workers who serve these youth.

Results of expert panel meetings revealed a consensus within groups of professionals and between the professionals and focus group members, although the expert panel members were more abstract and serious than the adolescents. For example, panel members argued for the inclusion of content that depicted the fatal consequences of AIDS.

Panel members also suggested that content attend to the immediate potential effects of sexual activity and drug use, rather than addressing only HIV infection risks. As an example of that focus, members recommended including information on sexually transmitted diseases as a consequence of early and promiscuous sexual activity. Similarly, they stated that the intervention's content on drugs should include the criminal and social consequences of drug use. Panel members recommended that such material attend to the everyday realities of drug dealing and drug use within the street culture, to the opportunities adolescents face for unsafe sexual activity, and to the choices youths make about their futures. Members of panels agreed on the merits of presenting factual and risk reduction content audiovisually and interactively.

Although panel members favored the use of games and scoring systems to foster youths' learning, they cautioned against competitive formats. Many panelists indicated that adolescents could lose sight of the purpose of intervention if the competition were too stimulating.

A final area of feedback from expert panel members concerned the explicitness needed to accomplish the intervention's objectives. Besides the provision of up-to-date information about HIV infection, its transmission, and its prevention, an effective curriculum will—according to expert panel members—unambiguously demonstrate how adolescents can lower their risks for HIV infection through lifestyle changes. They recommended providing youths with facts on the relationship between their number of sexual partners and their risk for AIDS. Other ideas focused on the use of protective means for sexually active adolescents, on drug use risks associated with HIV infection, and on the likelihood of exposure to HIV infection for the partners of bisexual and homosexual males, IV drug users, and sexual partners of persons who engage in high-risk behavior.

Development of written curriculum and shooting script. Based on results of focus group and expert panel study discussions, on our past experiences, and on the available literature, we next developed a

written curriculum and shooting script. Our objective was to test the feasibility of interactively delivering AIDS prevention messages to Hispanic and African American adolescents. In line with that objective, we developed a sample curriculum to determine the feasibility of the interactive videodisc approach. Feasibility was assessed in terms of the acceptance, attraction, and potential effectiveness of interactive videodisc as a vehicle for the intervention. A curriculum that responds to all Hispanic and African American adolescents, we reasoned, may not respond to the sex and ethnic-racial prerogatives of any specific subgroup in enough detail to effect positive changes. We decided to target one sex and ethnic population for the pilot test. The creation of the written curriculum and shooting script for Hispanic adolescent males represented a first step in the development of an intervention program to help Hispanic and African American youth reduce their risks for HIV infection.

We convened a team of curriculum specialists in the areas of HIV infection risks, skills interventions, and prevention programming with Hispanic adolescents. After reviewing the results of focus group and expert panel studies and drawing together existing curriculums and scientific and clinical knowledge, the team outlined a plan for an interactive videodisc curriculum, sensitive to cultural, age, and sex issues.

To accommodate the curriculum and shooting script format, team members created vignettes on HIV infection risks relevant for young Hispanic males. These risks were unsafe sexual activity and drug use. The curriculum took shape as a pilot demonstration of interactive videodisc programming to build knowledge, attitudes, and skills in areas that put young Hispanic males at risk for HIV infection.

Responses of 45 adolescents and professionals to interactive videodisc on prevention of HIV infection

Questionnaire item	Adolescents		Professionals		χ^2 value [1]
	Mean	SD	Mean	SD	
Age appropriate	6.03	.71	6.54	.12	.412
Hispanic relevant	6.34	.37	6.42	.38	.001
Sex specific	3.87	1.71	4.18	1.64	.023
Content:					
Attractive	5.93	.64	5.62	1.22	.017
Easily understood	5.84	.78	6.09	.71	.011
Language appropriate	5.67	1.38	6.15	.69	.038
Realistic	5.83	.86	6.02	.97	.006
Sensitive	6.11	.64	6.34	.76	.008
Technical quality:					
Graphics	5.45	1.03	5.96	.65	.009
Video	5.92	.89	6.21	.59	.013
Audio	5.38	.94	5.82	.71	.011
Narration	6.08	.76	6.13	.64	.005
Format inviting	6.16	.62	6.48	.73	.016
Ease of use	6.51	.32	6.32	.87	.006
Responsive to:					
Drug use risks	5.76	1.03	5.95	1.12	.006
Sexual risks	5.13	1.16	6.04	1.24	.014
AIDS risks	6.12	.77	6.03	.82	.001
AIDS prevention	6.23	.61	6.49	.53	.01
Persuasive to change:					
AIDS knowledge	5.91	.78	6.16	.61	.01
Preventive attitudes	5.66	.95	5.73	.84	.000
Preventive behavior	6.18	.71	6.34	.53	.004
Held attention	6.13	.57	5.60	1.21	.05
Desire to continue	6.07	.83	6.52	.48	.031
Likely effects	5.93	.48	6.21	.65	.013
Overall enjoyment	5.86	.97	6.02	.79	.004
Overall interest	5.85	.82	6.13	.86	.013
Overall impact	6.04	.62	6.23	.67	.006
Recommend to others	6.22	.54	6.41	.33	.006

[1] None of the χ^2 values was statistically significant.

NOTE: Respondents rated items on a 7-point scale (7 = highly positive). SD = standard deviation.

Videodisc production. The curriculum and shooting script paved the way for the production of a videodisc that could be tested for feasibility. Staff members worked as a team to plan and construct the videodisc. Facilitative at the production stage was the involvement of investigators and staff members with credentials in videotape and film making and in skills interventions with minority youth.

The delivery vehicle selected was a level II playback machine with remote control and color monitor. Because of its portability and relatively low cost, a level II videodisc system lends itself to applications in a range of settings. Level II delivery requires only an intelligent playback machine and remote control for user interactions; if necessary, a conventional television set can be used instead of a special monitor.

For production purposes, target youth were primarily Puerto Ricans and Dominicans, ages 11 and 12, from low-income families in East Harlem and the South Bronx. The producers assumed that youths were fluent in English and had at least fourth-grade reading levels. From the curriculums and shooting script, we began production by choosing a subset of interactions, vignettes, and scenes for videotaping.

We used three selection criteria. First, we wanted material that would capture essential features of interactive curriculums for AIDS prevention. These features were the combined use of videotape, computer generated graphics, and interactive programming at critical choice points. Second, we

'Responses from Hispanic adolescents and ethnic-racial minority professionals who interacted with the videodisc were positive, indicating that this medium can address AIDS prevention issues in a format that appears to be interesting and enjoyable.'

selected vignettes and interactions that lent themselves to relatively inexpensive videotape shooting. For example, we passed over scenes that required complex outdoor shoots in favor of indoor scenes involving few people. Third, we drew from the curriculum material that allowed adolescents to make decisions and to experience the consequences of those decisions within hypothetical situations. Thus, vignettes dealt with situations in which adolescents had opportunities to either engage in or avoid behavior that was risky or that could lead to high-risk behavior.

After obtaining the necessary technical services, rental equipment, and filming space, we wrote detailed shooting instructions and scripts for each of the selected interactive vignettes. Adolescent actors were recruited from LaGuardia School of the Performing Arts; adult actors and a narrator for the videotape were recruited from a local guild.

Once sufficient videotape footage was obtained, development moved into post-production work. In that stage, we synchronized audio narration with the video footage, created and adapted video graphics to the footage, and programmed branched sequences. Consuming the bulk of time and resources for videodisc development, post-production tasks profited from the availability of qualified technicians on the investigative team. Programming equipment included videodisc players (*A*), microcomputers (*B*), and software (*C*).

Upon the completion of the prototype disc, we executed quality control tests to ensure that all permutations of branching and screen choices would function as intended. As needed, we revised and reprogrammed the instructional codes for the videodisc. Finally, we timed all scenes and interactions to determine field conditions for the feasibility test.

User acceptance. To determine the audience acceptability of and responsiveness to an interactive videodisc as a means for delivering AIDS prevention content, we tested the finished pilot product with Hispanic adolescent males and with professionals who serve Hispanic youth. The sample of 45 adolescents had a mean age of 11.8 years. Employed as counselors, social workers, and recreational volunteers, the sample of 21 Hispanic and African American professionals had a mean of 5.3 years in direct services with adolescents. Youths and professionals were involved in the study by virtue of their being clients or staff members at six agencies that serve Hispanic and African American adolescents in the Bronx, Brooklyn, and East Harlem. Pilot testing occurred on site at the six agencies. Throughout the experiment, youths and professionals remained anonymous.

Test procedures followed a parallel methodology for adolescents and professionals. At each community agency site, intervention was delivered on standard hardware in rooms that normally served as waiting areas, recreational facilities, and counseling and administrative offices.

Of the 48 adolescents invited to participate in the test, 3 declined. Individually, youths who consented to participate interacted with the videodisc program for sessions lasting an average of 22 minutes. Professionals viewed the videodisc individually, assuming the role of a Hispanic adolescent in their responses. At the end of the videodisc interaction, youths and professionals completed questionnaires.

Questionnaires had items on the appropriateness, sensitivity, realism, attraction, responsiveness, enjoyment, and potential impact of the videodisc intervention. Adapted from existing measures, questionnaire items were scored on 7-point scales, with 7 indicating highly positive and very favorable responses. Psychometric properties of the measure were determined from 2-week test-retest results of .86 with a pilot sample of adolescents and from satisfactory assessments of construct validity. At the session's end, youths and professionals were thanked for their time. Youths also received two transit tokens and $5.

Responses from the questionnaires were positive (see table). Only regarding the sex specificity of curriculum content did adolescents and professionals assign a mean score below 5.0. The data indicate that neither group of respondents assessed the content as differentially appealing to males, contrary to scripting and programming efforts.

Study findings show that adolescents and professionals did not differ in their responses to the videodisc curriculum. None of the chi-square tests comparing adolescents' and professionals' re-

sponses approached significance. On most parameters, professionals were nonsignificantly more positive in their responses than were adolescents.

As shown by the data in the table, the level of interactive videodisc intervention coincided with the age and ethnicity of target youths. What is more, the content was rated as attractive, easily understood, language appropriate, realistic, and sensitive. Both groups of viewers assessed positively the technical merits of the videodisc relative to graphics, video and audio material, and narration. Youths and professionals evaluated the videodisc format as inviting and easy to use. Both groups of respondents assessed the curriculum as responsive to risks of HIV infection and the needs for AIDS prevention education of Hispanic youth.

The videodisc was judged by youths and professionals as relatively persuasive with respect to AIDS knowledge, prevention attitudes and behavior, and overall effectiveness and impact.

Viewers indicated that the videodisc held their attention, that they would continue interacting with the same format if additional material were available, and that the videodisc was likely to achieve positive effects with the intended target population. Finally, youths and adults rated the videodisc as enjoyable, interesting, potentially useful to Hispanic youth, and worthy of their recommendations to other youths and professionals.

Discussion

The study's results, although scarcely definitive, suggest that interactive videodisc is a potentially useful way to interest and facilitate behavior change among adolescents who face a high risk of contracting and spreading HIV infection. Responses from Hispanic adolescents and ethnic-racial minority professionals who interacted with the videodisc were positive, indicating that this medium can address AIDS prevention issues in a format that appears to be interesting and enjoyable. Because the videodisc and the curriculum that fostered it were guided by findings from focus groups and expert panels, the age- and cultural-responsiveness of the interactive product were not surprising.

Findings from this feasibility study provide a basis for further research. Across four areas—focus group and expert panel studies, curriculum development, videodisc production, and feasibility testing—this effort advanced the potential of videodisc intervention. This modest but promising initial effort augers for more sophisticated and rigorous studies. Needed are full scale randomized trials of interactive videodisc curriculums for helping Hispanic and African American adolescents reduce their risks of HIV infection. Results of such studies could inform the design of dissemination efforts, both nonprofit and commercial. Given a growing awareness of the need for preventive interventions that are efficacious and readily disseminated, and the growing use of interactive videodisc and computer technologies for creating compatible multimedia products, these products will be well received by prevention specialists in youth, school, and public health settings.

References

1. Centers for Disease Control: HIV/AIDS surveillance report, March 1991, pp. 1-18.
2. Centers for Disease Control: AIDS and human immunodeficiency virus infection in the United States. 1988 update. CDC surveillance supplements 38 (supp. 4): 1-38, May 12, 1989.
3. DiClemente, R. J., Boyer, C. B., and Morales, E. S.: Minorities and AIDS: knowledge, attitudes, and misconceptions among black and Latino adolescents. Am J Public Health 78: 55-57 (1988).
4. Seltzer, R., and Smith, R. C.: Racial differences and intraracial differences among blacks in attitudes toward AIDS. AIDS and Public Policy J 3: 31-35 (1988).
5. HIV-related beliefs, knowledge, and behaviors among high school students. MMWR 37: 717-721, Dec. 2, 1988.
6. Number of sex partners and potential risk of sexual exposure to human immunodeficiency virus. MMWR 37: 566-568, Oct. 10, 1988.
7. Moran, J. S., et al.: The impact of sexually transmitted diseases on minority populations. Public Health Rep 104: 560-565, November-December 1989.
8. Schilling, R. F., et al.: Developing strategies for AIDS prevention research with black and Hispanic drug users. Public Health Rep 104: 2-11, January-February 1989.
9. Becker, M. H., and Joseph, J. G.: AIDS and behavioral change to reduce risk: a review. Am J Public Health 78: 394-410 (1988).
10. Schinke, S. P.: Preventing teenage pregnancy. *In* Progress in behavior modification 16, edited by M. Hersen, R. M. Eisler, and P. M. Miller. Academic Press, New York, 1984, pp. 31-63.
11. Moncher, M. S., Holden, G. W., and Schinke, S. P.: Primary prevention. *In* Innovations in child behavior therapy, edited by M. Hersen. Springer, New York, 1989, pp. 137-155.
12. Remafedi, G. J.: Preventing the sexual transmission of AIDS during adolescence. J Adolescent Health Care 9: 139-143 (1988).
13. Botvin, G. J., and Wills, T. A.: Cognitive-behavioral approaches to substance abuse prevention. *In* Prevention research: deterring drug abuse among children and adolescents, edited by C. Bell and R. Battjes. NIDA Research Monograph No. 63. U.S. Government Printing Office, Washington, DC. 1985, pp. 8-49.
14. Brooks-Gunn, J., Boyer, C. B., and Hein, K.: Preventing HIV infection and AIDS in children and adolescents. Am Psychologist 43: 958-964 (1988).

15. Flora, J. A., and Thoresen, C. E.: Reducing the risk of AIDS in adolescents. Am Psychologist 43: 965-970 (1988).
16. Marin, G.: AIDS prevention among Hispanics: needs, risk behaviors, and cultural values. Public Health Rep 104: 411-415, September-October 1989.
17. Day, N. A., Houston-Hamilton, A., Deslondes, J., and Nelson, M.: Potential for HIV dissemination by a cohort of black intravenous drug users. J Psychoactive Drugs 20: 179-182 (1988).
18. Rotheram-Borus, M. J.: Prevention of HIV infection among adolescents. Paper presented at Women and AIDS Conference, sponsored by National Institute of Mental Health, Washington, DC, Sept. 27-29, 1987.
19. Haffner, D. W.: AIDS and adolescents: school health education must begin now. J School Health 58: 154-155 (1988).
20. De Bloois, M. L.: Videodisc/microcomputer courseware design. Educational Technology Publications, Englewood Cliffs, NJ, 1982.
21. Gustafson, D. H., et al.: Final survey evaluation report: barn project. Center for Health Systems Research and Analysis, Madison, WI, 1987.
22. England, E.: Interactional analysis: the missing factor in computer-aided learning and evaluation. Educational Technology 25: 24-28 (1985).
23. Ledbetter, C. A., and Johnson, D.: AIDS: reading level analysis of public information. AIDS and Public Policy J 3: 11-14 (1988).
24. Harwood, R. L., and Weissberg, R. P.: The potential of video in the promotion of social competence in children and adolescents. J Early Adolescence 7: 345-363 (1987).
25. Orlandi, M. A., Dozier, C., and Marta, M. A.: Computer and video interventions for drug abuse prevention. J Consult Clin Psychol 58: 425-431 (1990).
26. Reinoehl, R., and Shapiro, C. H.: Interactive videodiscs: a new tool for social work education. J Social Work Ed 22: 61-67 (1986).
27. Mervarech, Z. R., and Rich, Y.: Effects of computer-assisted mathematics instruction on disadvantaged pupils' cognitive and affective development. J Educational Res 79: 5-11 (1985).
28. Saracho, O. N.: The effects of a computer-assisted instruction program on basic skills achievement and attitudes toward instruction of Spanish-speaking immigrant children. Am Educational J 19: 201-219 (1983).
29. Johnson, E. M., and Delgado, J. L.: Reaching Hispanics with messages to prevent alcohol and other drug abuse. Public Health Rep 104: 588-594, November-December 1989.
30. Electronic market data book, 1988 edition. Electronic Industries Association, Washington, DC, 1988.
31. Moran-Lever, T., Harrison, J., and Methta, N.: Statistical and marketing report. Dealerscope Merchandising, March 1989, pp. 12-16.
32. Merchandising: sixty-third annual statistical and marketing report. Grall Publications, New York, 1986.
33. Growth of electronic products slows. Economic World, August 1990, pp. 23-24.
34. Neff, R.: Videos are starring in more and more training programs. Business Week, Sept. 7, 1987, pp. 108-110.
35. Fisher, L. M.: Ten computer makers agree to offer multimedia PCs. New York Times, Nov 28, 1990, p. D6.
36. Krueger, R. A.: Focus groups. Sage, Beverly Hills, CA, 1988.

Equipment

A. Pioneer LD-V6000A intelligent Level II laser videodisc player, with color monitor and remote control switching device. Pioneer Systems Inc., 230 5th Ave., Suite 6-Y, New York, NY 10001.

B. IBM PS/2 Model 70 microcomputer. IBM Corp., 909 3rd Ave., 9th Floor, New York, NY 10022.

C. IBM Infowindows software. IBM Corp., 909 3rd Ave., 9th Floor, New York, NY 10022.