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linked. *On Being Gay* might have spent more time exploring misconceptions about AIDS and gay men. Nevertheless, *On Being Gay* is a very useful teaching film, particularly for adolescents. Brian is someone we can listen to and believe. He is a positive role model, and his video does help to dispel some of the myths that prevent real understanding of homosexuality and gay people.

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## A New Measure of Adolescent Sexuality: SKAT-A

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*Risky sexual behaviors among adolescents have become a critical public health concern as the specter of AIDS has spread to the general population. This paper summarizes efforts by the authors to develop the Sex Knowledge and Attitude Test for Adolescents (SKAT-A), a comprehensive adolescent sexuality scale. The SKAT-A has three main sections: knowledge, attitudes, and behavior. A principal component factor analysis indicates the presence of four subscales in the attitude scale: Sexual Myths, Responsibility, Sex and Its Consequences, and Sexual Coercion. The behavior section contains 43 questions concerning sexual behavior and expertise. The results of test-retest and internal reliability assessments indicate that the subscales possess adequate temporal stability and internal consistency. An assessment of concurrent validity was also completed. Future efforts include the development of a sexual risk-taking scale and a interactive computer software package.*

Over the past 3 years the authors have sought to develop a measure of adolescent sexual knowledge, attitudes, and behavior, especially those behaviors that put the teenager at risk for acquiring or transmitting the HIV virus or becoming a teenage parent. This paper summarizes those efforts as well as providing insight into our motivation for developing a scale that focuses on this population.

The public health crises generated by AIDS (Hein, 1987; Quinn, Zacharias, & St. John, 1989; Struinin & Hingson, 1987), teenage pregnan-

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cy (Alan Guttmacher Institute, 1981; Furstenberg, Brooks-Gunn, & Morgan, 1987; Zelnick, & Kantner, 1980), and the connections between sexual risk taking, drug/alcohol abuse, child abuse, and health care (Hoerlin, 1989) demonstrate the need for developing innovative intervention programs and the ongoing evaluation of those programs. At this time, education is the best tool available to society for the prevention of the consequences of risky or irresponsible sexual behavior (U.S. Department of Health and Human Services, 1986).

Sex education now reaches 85% of the students in elementary, junior high, and high schools of large cities (Kirby, 1984). However, the effectiveness of these programs is brought into doubt by the disheartening statistics that more than 2,740 U.S. teenage girls, mostly unmarried, become pregnant every day. The rate of teenage pregnancy in the United States among females under the age of 15 is five times higher than in any of the other developed countries. Only 15% of the students "could be said to have a comprehensive course [in sex education], but over 55% have had intercourse by the time they graduate from high school" (Scales, 1987).

Stout and Rivara's (1988) recent meta-analyses of the effectiveness of sex education courses found that traditional sex education had no effect on sexual activity, contraceptive use, or teenage pregnancy. Traditional approaches to sex education must be supplemented by ongoing support to the individual student (W. A. Fisher, 1990; Haffner, 1987). Sex education could be helped greatly through innovative educational programs that can correct faulty knowledge, dispel sexual myths, and impact on the variables leading to risky behavior.

However, the development of such innovative interventions has been frustrated by the same issues that previous education efforts (e.g., drug and alcohol abuse programs, adolescent pregnancy programs) have had to face. How can we design a technique that will reach the individual adolescent? What misinformation does he/she possess that needs to be addressed? What is the most effective, efficient, and enticing means of educating adolescents? How can we get adolescents to reach out for help?

Specific information about sexual behavior, attitudes, and knowledge are vital to the design of effective sex education programs and "an essential component of AIDS prevention" (Lief, in press). Unfortunately, this information is not available to most schools and public health agencies (Haffner, 1987; Lief, 1989). Anke Ehrhardt (1988), Director of the HIV Center for Clinical and Behavioral Studies at Columbia University, spoke to this point in testimony before the President's Commission on Human Immunodeficiency Virus.

at a time when adequate knowledge about sexual behavior is crucial, our knowledge is fragmentary. . . . It must be one of our highest priorities, if we are to stop the spread of HIV infection, to fill in the gaps in our knowledge by acquiring new data so that we don't have to fall back again and again on data that is outdated or based on inadequate samples which fail to recognize our diversities.

The problems cited here are compounded by the reluctance of most adolescents to reveal the extent of their knowledge, their sexual activities, and their concerns or questions when asked directly. All too frequently they will adopt a response strategy that is consistent with social or peer group standards. The result is that most sex education programs end up as "fishing trips" or generalized "shot-gun" approaches. The teacher/counselor addresses a variety of sex-related topics without any real indication of whether those issues are appropriate for the group or individual in question.

Two recent summaries of the information available from current sexual knowledge and attitude questionnaires (Davis, Yarber, & Davis, 1988; Hayes, 1987) have suggested that the available instruments reflect some combination of inadequate standardization with limited numbers of subjects (e.g., T. D. Fisher, 1986), restricted SES sampling, or highly selected samples (e.g., W. A. Fisher, Grenier, Watters, Lamont, Cohen, & Askwith, 1988), often coupled with idiosyncratic topic selection typically based on the evaluation of a specific curriculum (e.g., Kirby, 1984). Thus, many of the evaluation problems described in Stout and Rivara (1989) may stem from problems in instrumentation.

The authors have attempted to resolve this problem by developing a means of giving preventive feedback directly to individual adolescents and professionals. The first step in achieving this goal has been attained with the recent completion of a paper-and-pencil version of the Sex Knowledge and Attitude Scale for Adolescents (SKAT-A).

#### BACKGROUND AND DEVELOPMENT OF THE SKAT-A

The original SKAT was developed in the early 1970s by Lief and Reed (1972). They described the SKAT as "an omnibus instrument designed to be of value both as a teaching aid in courses dealing with human sexuality and as a research instrument for the social sciences." Designed to be used primarily with medical, nursing, and graduate students, it is the most widely used instrument of its kind (Lief, 1988).

In early 1986 work began on the SKAT-A. The authors' intention has been to design a new instrument that could be used in educational and research settings to assess adolescents' and young adults' sexual knowl-

edge, attitudes, and behaviors. To date the test development process has involved input from four sources: (1) field tests with varying adolescent and young adult populations; (2) item analyses, validity, and reliability assessments; (3) evaluation from experts in adolescent development; and (4) a literature review.

The SKAT-A parallels the SKAT in design, with a number of modifications in content and wording that make the SKAT-A more appropriate to adolescent populations. It has three main sections: knowledge, attitudes, and behavior. The knowledge section has 61 questions with the format varying between true/false (40 questions) and multiple choice (21 questions). To avoid response bias the correct answers have been arranged in a random pattern. Currently, the knowledge section has questions on the following areas: abortion, birth control and pregnancy, fantasies, homosexuality, masturbation, premarital sex, sex crimes, sex education, sexual behavior, sexual responsiveness, and sexually transmitted diseases.

The attitude section contains 43 statements to which the individual indicates a response on a 5-point Likert scale (1 = strongly agree; 5 = strongly disagree). In order to detect response bias, the items are randomly arranged so that an individual who responds honestly cannot consistently agree or disagree with all of the items. A principal component factor analysis with varimax rotation was performed based on data collected from 333 undergraduates (32% males; 68% females) with an average age of 20.7 years (range 17-25). A criterion of .30 was established in order to determine which items loaded on the factors. The results indicate the presence of four subscales in the attitude section: Sexual Myths (16 items; factor loading range 0.316-0.703); Responsibility (10 items; factor loading range 0.345-0.554); Sex and Its Consequences (11 items; factor loading range 0.368-0.685); and Sexual Coercion (6 items; factor loading range 0.559-0.846). A score for each of these subscales indicates the respondent's status on a 5-point scale, ranging from 1 (conservative) to 5 (liberal).

Finally, the behavior section (Part IV) contains 43 questions concerning sexual behavior and experience. Included are questions on pregnancy, sexually transmitted diseases, dating behavior, contraceptive use, and rape and molestation. In an effort to assess the behavior of both those individuals who have had sexual intercourse and those who have remained virgins, an equal number of questions are included that are applicable to each group's sexual experiences. The formats of the questions in Part IV vary between yes/no responses and checklist.

Since May 1986 five revisions of the SKAT-A have been field tested on various populations. Each of these field tests provided critical information needed to identify questions that were either outdated or inap-

propriate for an adolescent population. Through written and oral feedback, as well as an item analysis of the results, these field tests also helped in the identification of terms or questions confusing to adolescents. Input was also gathered from a variety of experts in adolescent development and pregnancy. While providing additional feedback on the appropriateness of the questions, these experts also evaluated the scoring and overall content and face validity of the test.

#### RELIABILITY AND LITERACY ASSESSMENT

##### Method

During May 1988 an assessment of the test-retest reliability and reading level for each section was conducted. Forty undergraduates (50% males; 50% females) enrolled in a general humanities course at a large urban university were administered the SKAT-A. They ranged in age from 17 to 25 years ( $\bar{x}$  = 20.53 years,  $SD$  = 1.44). The ethnic/racial breakdown was as follows: White 80.7%; African American 8.8%; Asian 5.3%; and Hispanic 3.5%. A second administration of the scale occurred 3 weeks later. The assessment of internal reliability was based on the data collected from the subjects ( $N$  = 333) used for the factor analysis of the attitude scale. This included the subjects ( $N$  = 40) used for the reliability assessment described earlier.

##### Procedure

Test-retest reliability was estimated using the Pearson  $r$  for each question format in the Knowledge section (true/false and multiple choice) and for each factor in the attitude section. Estimates of test-retest reliability were also computed for the total score of each scale. The internal reliability was estimated using Kuder-Richardson Formula 20 (KR20) for the knowledge scale and Cronbach's alpha for the attitude scale. Assessment of literacy was based on the Flesch-Kincaid procedure, which uses the average sentence and word length to estimate reading level.

##### Results

By correlating the results of the two administrations of the instrument, we observed the temporal stability of the subscales over a 3-week period. These coefficients are shown in Table 1. Considering that the SKAT-A is assessing both intellectual and affective domains of a population whose sexual experience and self-concept are highly unstable (Gruher & Chambers, 1987; Pestrak & Martin, 1985), the scales overall show a

TABLE 1. Reliability and Literacy Assessment for SKAT-A Knowledge and Attitude Scales

	Test-Retest	Internal	Reading
	(N = 40)	Consistency (N = 332)	Level
Knowledge Scale			
True/false items	.771***	.74	4th grade
Multiple-choice items	.619***	.30	7th grade
Total score	.804***	.70	7th grade
Attitude Scale			
Sexual Myth	.898***	.86	8th grade
Sex and Its Consequences	.906***	.84	9th grade
Sexual Coercion	NC <sup>a</sup>	.89	6th grade
Responsibility	.721***	.77	7th grade
Total score	.916***	.89	7th grade

NC: not computable due to missing data.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

remarkable level of stability. The instability of adolescent sexuality is most evident in the multiple-choice section of the Knowledge scale and the Responsibility section of the Attitude scale. This same pattern is repeated in the assessment of internal consistency. With the exception of the multiple-choice questions and the Responsibility section, the data suggest a high degree of homogeneity among the items. Ongoing item analysis will be used to further investigate the nature of this instability and lack of homogeneity.

Literacy assessment found the scales to be on a junior high school reading level. The appropriateness of this reading level to the skills of urban adolescents is still unclear. Therefore, future literacy estimates will focus on the difficulty of the terms and general sentence complexity.

## VALIDITY ASSESSMENT

### Method

An assessment of concurrent validity was completed by comparing the SKAT-A with two other measures: Kirby's (1984) Knowledge and Attitude scales and Hendrick and Hendrick's (1987) Multidimensional Sexual Attitude Scale. The Kirby (1984) Knowledge Scale consists of 34 items focused primarily on birth control, sexually transmitted diseases,

physical development, and a series of specific adolescent concerns including relationships, sexual activity, pregnancy, and marriage. This scale was developed to assess a specific curriculum also designed by Kirby. The Kirby Attitude Scale addresses attitudes toward birth control, premarital sex, and the use of pressure and force in sexual activity (15 items) and personal values (55 items). While data for all of the subscales are presented later in Table 3, only the three attitude subscales are considered in this comparison.

Hendrick and Hendrick (1987) have developed a multidimensional sexual attitude scale that has been carefully standardized and cross-validated on a number of different instruments assessing various aspects of sexuality. The 43-item scale has four factorial-derived dimensions: Permissiveness (21 items), Sexual Practices (7 items), Communion (9 items), and Instrumentality (6 items). The scale was standardized on college-age students. An inspection of the items suggests that the scale is most appropriate for sexually active individuals with at least high school reading competence. The content of some of the items [e.g., "I would feel comfortable having intercourse with my partner in the presence of other people" (Permissiveness) or "Using 'sex toys' during lovemaking is acceptable" (Sexual Practices)] make the instrument of limited utility, given the current political climate facing most sex education programs.

To assess the validity of the SKAT-A, undergraduates enrolled in a general humanities course at a large urban university were administered counterbalanced combinations of the three scales (SKAT-A, Kirby, and Hendrick) during January 1989. The entire group ranged in age from 17 to 25 years with an average age of 20.8 years. The ethnic/racial breakdown is as follows: Caucasian 88.9%; African American 10.1% and Hispanic 1%. The relationships among these scales were computed using the Pearson correlation coefficient ( $r$ ).

### Results

#### Knowledge Scale

A review of the SKAT-A and Kirby Knowledge sections indicates similarities and differences between purpose, subject areas, and format. Geared toward adolescent populations, both scales evaluate, at some level, knowledge concerning sexual issues among teens. The SKAT-A addresses a variety of controversial content areas besides those in Kirby, including homosexuality, pornography, rape, AIDS, and masturbation. Kirby's scale focuses on birth control, sexually transmitted diseases (STDs), pregnancy, physiological functioning, and feelings of teens ("relationships").

An inspection of Table 2 shows few significant correlations. With the

TABLE 2. Correlations (*r* values) Between SKAT-A and Kirby Knowledge Sections

SKAT-A Knowledge Sections	Kirby Knowledge Sections							
	Physical Development	Teen Relations	Sexual Acts	Teen Pregnancy	Teen Marriage	Probability Pregnancy	Birth Control	STD
Abortion	NV <sup>a</sup>	NV	NV	NV	NV	NV	NV	NV
Birth Control	.14	-.01	-.06	.04	.08	.11	.19	.09
Fantasies	-.08	.04	-.05	.08	-.06	.08	-.01	-.08
Homosexuality	-.15	.19	-.08	.07	.26	.26	.03	-.12
Masturbation	-.11	-.16	-.02	.02	.02	.28*	.28*	.03
Sex Crimes	.12	.13	.10	-.03	-.02	-.04	.13	.36**
Sex Education	NV	NV	NV	NV	NV	NV	NV	NV
Sex Behavior	.08	-.29*	.08	.10	-.11	.03	.16	-.10
Responsiveness	.14	.25	.05	.17	-.01	.37**	.27*	.20
STD	.23	-.10	-.10	.01	-.06	-.15	-.10	.38**

<sup>a</sup>NV: no variance in items.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

exception of STD parallel sections ( $r = .38, p < .01$ ), no discernable pattern seems to emerge. A comparison of questions between SKAT-A Sex Crimes and Kirby STDs ( $r = .36, p < .01$ ) shows no obvious overlap in content or concept. The same is true with SKAT-A Sexual Responsiveness and Kirby Probability of Pregnancy ( $r = .37, p < .01$ ).

An explanation may relate to the differences in scale formats. Kirby uses multiple-choice questions. Of the 34 knowledge questions, 73% use "all of the above" or "none of the above" as possible responses. Since approximately 75% of the correct answers fall under one of those responses, the format may assume a detailed familiarity with the subject area. Kirby does use this scale to evaluate a specific curriculum.

#### Attitude Scale

The pattern of correlations (see Table 3) suggests that there are both similarities in the expected areas and differences between the SKAT-A and the other measures. Only correlations above .40 are considered. The SKAT-A Myth scale, which includes masturbation, pornography, and homosexuality, correlated with Permissiveness ( $r = .57, p < .001$ ) and Sex Practices ( $r = .56, p < .001$ ) (Hendrick) and with Sexuality in Life ( $r = .40, p < .001$ ) and Premarital Sex ( $r = .60, p < .001$ ) (Kirby). Likewise, SKAT-A Consequences, which deals with premarital sex and abortion, was correlated with Permissiveness ( $r = .60, p < .001$ ), Sex Practices ( $r = .52, p < .001$ ), and Premarital Sex ( $r = .64, p < .001$ ). Coercion was negatively related to Permissiveness ( $r = -.41, p < .001$ ).

The SKAT behavior section asks each individual to rate his/her attitudes toward sex on a 1 (conservative) to 10 (liberal) scale. Those ratings correlated with Permissiveness ( $r = .55, p < .001$ ) and Premarital Sex ( $r = .53, p < .001$ ).

As the Hendrick Permissiveness and Sex Practices subscales deal primarily with liberal attitudes toward sex (e.g., "Sex for its own sake is perfectly all right"), it makes sense that liberal attitudes toward both Myths and Consequences would be related positively. The same is true with attitudes toward premarital sex and sexuality in life. The negative relationship between Coercion and Permissiveness shows that negative feelings regarding force in sexual practices are accompanied by liberal attitudes toward sex in general. The self-assessment scale also reflects an agreement between held liberal attitudes toward permissiveness in relationships (Hendrick) and positive attitudes toward premarital sex (Kirby).

It is clear that important attitudes toward sexuality are being explored in the SKAT-A that tap aspects not covered by the other measures. The "consequences" of one's behavior and the "responsibility" toward

TABLE 3. Correlations (*r* values) Between SKAT-A Attitude and Criterion Measures

Criterion Measures	SKAT-A Attitude Factors				
	Myths	Consequences	Coercion	Responsibility	Self-assessment
Hendrick ( <i>N</i> =64)					
Permissiveness	.568***	.598***	-.411***	.038	.549***
Sex Practices	.557***	.515***	-.084	.104	.342**
Communion	.320**	.125	.020	.095	.251
Instrumentality	.121	.203	-.084	.117	.130
Kirby ( <i>N</i> =70)					
Long-term Goals	.126	-.079	-.043	.026	.134
Sexual Values	.106	-.116	.060	.047	.123
Emotional Needs	.060	-.181	.107	.107	.079
Sexual Behavior	.028	-.249*	.054	.082	.056
Sexual Response	.125	-.072	.064	-.007	.148
Gender Roles	.358**	.270*	.207	.263*	.350**
Life Sexuality	.401***	.138	-.052	.062	.305*
Birth Control	.072	.090	.114	.120	.056
Premarital Sex	.604***	.638***	-.219	.054	.525***
Sexual Pressure	-.043	-.172	.121	.189	-.099
Family	.077	-.107	.185	.236*	-.087
Self-esteem	.042	-.130	.027	.008	.084
Sexual Satisfied	.261*	.097	-.008	-.062	.220
Social Satisfied	-.060	-.157	-.208	-.147	-.159

\**p* < .05; \*\**p* < .01; \*\*\**p* < .001.

other individuals would seem to be important features in determining how individuals will deal with the manifest possibilities of sexual relationships.

#### SUMMARY AND DISCUSSION

Risky sexual behaviors among adolescents have become a critical public health concern during the past decade as the specter of AIDS has spread to the general population. The potential for a increasing number of HIV-infected young adults, along with the continued problems of the highest teenage pregnancy and abortion rates in the Western world, has made sex education a very high priority. Yet the design, implementation, and evaluation of appropriate family life educational programs requires a data base of adolescent knowledge, attitudes, and behavior for the population in question. Family life educators and researchers need valid and reliable measures of teenage sexuality.

We have identified three scales that can be used for adolescents; the Kirby and the Hendrick scales have been described in the Validity Assessment section. The Kirby scale has the disadvantage of concentrating on nonspecific attitudes, many of them dealing with self-esteem. The Hendrick scale is appropriate for college students, but its language and sensitive content preclude use below the senior high school level. Another recently published scale, developed by T. D. Fisher and Hall (1988), was designed for younger adolescent subjects. While Fisher and Hall reported that their scale correlated highly with the original SKAT (Lief & Reed, 1972), its brevity (14 total items), item specificity, and questionable factor structure may limit its utility for the general measurement of sexual attitudes.

We believe the SKAT-A is better designed for adolescents. It covers a variety of sexual topics in greater depth, has been tested for reliability and validity, and will serve well the needs of sex educators who wish to fashion curricula designed to meet the specific needs of the teenagers with whom they are dealing.

SKAT-A still has several drawbacks. It needs to be tested on younger adolescents as well as on a greater variety of teenagers from different racial, ethnic, and socioeconomic backgrounds. Either test modifications or separate tests for different age groups of different subgroups of the population may be required; however, in its present form it certainly seems suitable at the high school and college levels.

Two additional projects are currently underway that will extend the current paper-and-pencil version of the SKAT-A (Devlin, Lief, & Fullard, 1989). Efforts have begun to develop a sexual risk-taking scale (SERT-A) that will complement the SKAT-A. The SERT-A will attempt to determine

the immediate and future risk of HIV infection, pregnancy, and sexually transmitted diseases faced by individual teens and groups of adolescents. The other project is the development of a computer software version of the combined SKAT-A and SERT-A. While most sex educators use the traditional tools of education, few have utilized the power of the microcomputer. The combined SKAT-A/SERT-A software will take advantage of the power and proliferation of microcomputers in schools to provide a means for individual learning, self-appraisal, and reorientation as well as group assessment.

## REFERENCES

- Alan Guttmacher Institute. (1981). *Teenage pregnancy: The problem that hasn't gone away*. New York: Author.
- Davis, C. M., Yarber, W. L., & Davis, S. L. (Eds.). (1988). *Sexuality-related measures: A compendium*. Bloomington, IN: Second Editor.
- Devlin, S., Lief, H. I., & Fullard, W. (1989, November). *A new measure of adolescent sexuality: The SKAT-A*. Paper presented at the annual meeting of the National Council on Family Relations Conference, New Orleans, LA.
- Ehrhardt, A. A. (1988, May). *Sexual behavior and AIDS*. Testimony before the President's Commission on the Human Immunodeficiency Virus, Admiral James D. Watkins, Chair, Washington, DC.
- Fisher, T. D. (1986). Parent-child communication about sex and young adolescents' sexual knowledge and attitude. *Adolescence*, 21, 517-527.
- Fisher, T. D., & Hall, R. G. (1988). A scale for the comparison of the sexual attitudes of adolescents and their parents. *Journal of Sex Research*, 24, 90-100.
- Fisher, W. A. (1990). Understanding and preventing adolescent pregnancy and sexually transmissible disease/AIDS. In J. Edwards et al. (Eds.), *Social influence processes and prevention. Social psychological application of social issues: Vol 1*. Beverly Hills: Plenum Press.
- Fisher, W. A., Grenier, G., Waters, W. W., Lamont, J., Cohen, M., & Askwith, J. (1988). Students' attitudes towards sex, sexual knowledge, and willingness to treat sexual concerns. *Journal of Medical Education*, 63, 379-385.
- Furstenberg, Jr., F. E., Brooks-Gunn, J., & Morgan, S. P. (1987). Adolescent mothers and their children in later life. *Family Planning Perspectives*, 19, 142-151.
- Gruber, E., & Chambers, C. V. (1987). Cognitive development and adolescent contraception: Integrating theory and practice. *Adolescence*, 22, 661-670.
- Hafner, D. W. (1987). *AIDS and adolescents: The time for prevention is now*. Washington, DC: Center for Population Options.
- Hayes, C. D. (Ed.). (1987). *Risking the future: Adolescent sexuality, pregnancy and childbearing* (Vol. 1). Washington, DC: National Academy Press.
- Hein, K. (1987). AIDS in adolescents: A rationale for concern. *New York State Journal of Medicine*, 87, 290-295.
- Hendrick, S., & Hendrick, C. (1987). Multidimensionality of sexual attitudes. *Journal of Sex Research*, 23, 502-526.
- Hoerlin, B. (1989). *Connecting: Challenges in health and human services in the Philadelphia region*. Philadelphia: University of Pennsylvania, Leonard Davis Institute of Health Economics.
- Kirby, D. (1984). *Sexuality education: A handbook for the evaluation of programs*. Santa Cruz, CA: Network Publications.
- Lief, H. I. (1988). The sex knowledge and attitude test (SKAT). In C. M. Davis, W. L. Yarber, & S. L. Davis. (Eds.), *Sexuality-related measures: A compendium* (pp. 213-216). Bloomington, IN: Second Editor.
- Lief, H. I. (Ed.). (1989). *Human sexuality with respect to AIDS and HIV infection*. Report of a Conference Sponsored by Health and Welfare, Canada; World Health Organization; and World Association for Sexology.
- Lief, H. I., & Reed, D. M. (1972). *Sex knowledge and attitude test*. Philadelphia: Center for the Study of Sex Education in Medicine, University of Pennsylvania.
- Petrak, V. A., & Martin, D. (1985). Cognitive development and aspects of adolescent sexuality. *Adolescence*, 20, 981-987.
- Quinn, T. C., Zacharias, F. R. K., & St. John, R. K. (1989). AIDS in the Americas: An emerging public health crisis. *New England Journal of Medicine*, 320, 1005-1007.
- Scales, P. C. (1987). How can we prevent teen pregnancy (and why it's not the real problem). *Journal of Sex Education and Therapy*, 13, 12-15.
- Stout, J. W., & Rivara, F. P. (1989). Schools and sex education. *Pediatrics*, 83, 375-379.
- Strunin, L., & Hingson, R. (1987). Acquired immunodeficiency syndrome in adolescence: Knowledge, beliefs, attitudes and behaviors. *Pediatrics*, 79, 825-828.
- U.S. Department of Health and Human Services. (1986). *Surgeon General's report on AIDS*. Washington, DC: U.S. Government Printing Office.
- Zelnick, M., & Kanther, J. F. (1980). Sexual activity, contraceptive use and pregnancy among metropolitan-area teenagers: 1971-1979. *Family Planning Perspectives*, 12, 230-231, 233-237.