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Sociocultural psychological and behavioral predictors of AIDS-risk behavior in a college sample

Mark A. Simpson

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SOCIOCULTURAL, PSYCHOLOGICAL, AND BEHAVIORAL
PREDICTORS OF AIDS-RISK BEHAVIOR
IN A COLLEGE SAMPLE

By
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B.A., Grinnell College, 1989

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ABSTRACT

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This study examines psychological and social predictors of AIDS-risk behavior in college students. It incorporates both specific variables associated with high risk behavior, as hypothesized by the AIDS Risk Reduction Model (ARRM), as well as global indicators of high risk behavior including reported prevalence of problem behavior (illicit drug use, dangerous driving, and various antisocial behaviors) and value-access disjunction (perceived life chances). It was hypothesized that: AIDS-related risk behavior would be positively correlated with (1) a composite measure of AIDS-related attitudes incorporated into ARRM, (2) a measure of general problem behavior, and (3) value-access disjunction. Furthermore, the combination of these three measures would provide a more complete understanding of the variance associated with AIDS-risk behavior as indicated by an additive contribution from each variable in a stepwise multiple regression analysis. A total of 272 university students anonymously completed the questionnaire in exchange for experimental credit in an introductory psychology course. The study found that while the AIDS-related attitude measure was not associated with risk behavior in analyses on the initial 158 subjects, factor analysis elucidated components that were positively correlated with AIDS-risk behavior in replication and cross-validation procedures. Problem behavior was also positively correlated with AIDS-risk behavior. Value-access disjunction was not correlated with AIDS-risk behavior. Finally, the stepwise multiple regression analysis found that the combination of AIDS-related attitudes and problem behavior accounted for a significant proportion of the variance associated with AIDS-risk behavior. These results were replicated and cross-validated with a second sample of 82 subjects. This study highlights the importance of diversifying the curricula of AIDS prevention programs to address the motivational aspects of high risk sexual behavior and include behavioral skills training, in addition to HIV transmission and prevention information. These results further establish the link between high risk sexual behavior and a variety of other risk-taking behaviors. It suggests that prevention programs related to other risk behaviors may be an effective means for addressing sexual risk-taking which complement the efforts of AIDS prevention programs.
TABLE OF CONTENTS

Abstract ................................................... ii
Table of Contents ........................................ iii
List of Tables ........................................ iv
Introduction ........................................ 1

Literature Review
A. AIDS Prevention Programs ................................ 2
   B. AIDS-Risk in Adolescents .......................... 5
   C. AIDS-Risk in College and Young Adult Populations .. 6

Theoretical Framework
A. The AIDS Risk Reduction Model ...................... 9
   1. Recognition and Labeling .......................... 10
   2. Commitment to Change ............................. 15
   3. Taking Action ..................................... 19
   B. Problem Behavior and AIDS-Risk .................... 22
   C. Value Access Disjunction .......................... 25
   D. Hypotheses ........................................ 28

Method
A. Subjects ................................................. 30
B. Criterion Measure ................................... 32
C. Independent Measures ................................. 33
D. Procedure ............................................ 37
E. Analyses .............................................. 38

Results
A. Sexual Behavior ........................................ 39
B. HIV Transmission and Prevention Knowledge .......... 40
C. Predicting AIDS-Risk .................................. 42
D. Factor Analyses ........................................ 45
E. Revised Analyses ...................................... 49
F. Replication and Cross-Validation .................... 54
G. Social Desirability .................................... 57
H. Exploratory Analyses .................................. 59

Discussion
A. Sexual Behavior ........................................ 61
B. HIV Transmission and Prevention Knowledge .......... 62
C. Predicting AIDS-Risk .................................. 63
D. Conclusions ........................................... 72

References ................................................... 73

Appendix A: Demographics Measure ....................... 80
Appendix B: AIDS-Risk Behavior Measure ................. 82
Appendix C: AIDS Attitude Measure ...................... 84
Appendix D: Problem Behavior Measure ................. 89
Appendix E: AIDS Knowledge Measure ................. 92
Appendix F: Value-Access Disjunction Measure ....... 95
Appendix G: Social Desirability Measure .............. 107
Appendix H: Mean Comparison of Age, Gender, and Risk Variables by Sample ............... 109
Appendix I: Frequencies of the AIDS-Risk Items ... 111
Appendix J: Correlations Between Problem Behavior Scale Items, AIDS-Risk, AIDS Attitudes, Total Problem Behavior, and Social Desirability ................. 114
Appendix K: Principle Components Analysis Rotated Factor Matrix for the AIDS Attitude Measure ............... 115
Appendix L: Zero-Order Correlations Between Major Study Variables for Sample A ............... 116
Appendix M: Correlations between AIDS-Risk Variables, Problem Behavior, AIDS-Related Attitudes, and Social Desirability ............... 117
Appendix N: Correlations between AIDS Attitude Items, AIDS-Risk Behavior, AIDS Attitude Score, and the Jackson Social Desirability Scale .... 118
Appendix O: Correlations and Significance Values Between Age, Gender, AIDS-Risk, AIDS Knowledge, AIDS Attitudes, Problem Behavior, Value-Access Disjunction, and Social Desirability ............... 119
Appendix P: Correlations and Significance Values Between Age, Gender, AIDS-Risk, Problem Behavior, Social Desirability, and the Subscales of the AIDS Attitude Measure .... 120
Appendix Q: Means Comparison by Gender for Age and Risk-Related Variables ............... 121
LIST OF TABLES

Table 1: Frequency of Scores on the AIDS Transmission and Prevention Measure ........ 41
Table 2: Means, Standard Deviations, and Ranges for Study Variables ............. 43
Table 3: Stepwise Multiple Regression Analysis on the AIDS-Risk Behavior Measure ........ 44
Table 4: Means, Standard Deviations, Cronbach's Alpha Coefficients, and Correlations With AIDS-Risk for each of the seven AIDS Attitudes Factors ............. 49
Table 5: Stepwise Multiple Regression Analysis on AIDS-Risk Measure using AIDS Attitudes Factors ............. 50
Table 6: Revised Stepwise Multiple Regression Analysis on the AIDS-Risk Behavior Measure ............. 52
Table 7: Hybrid Hierarchical-Stepwise Multiple Regression Analysis on the AIDS-Risk Behavior Measure ............. 53
Table 8: Partial Correlations and Probability Values Between Major Study Variables Controlling for Social Desirability ............. 54
Table 9: Replication of the Stepwise Multiple Comparison on the AIDS-Risk Behavior Measure ............. 55
Introduction

Since the outbreak of the Acquired Immunodeficiency Syndrome (AIDS) epidemic and the discovery of the Human Immunodeficiency Virus (HIV), the focus on modes of transmission of HIV and dissemination of information regarding behavior that places individuals at-risk for HIV infection (risky behaviors) have become essential elements in education and prevention programs. Researchers and educators have stressed identifying and modifying risky behavior, not only in high risk groups, but in all at-risk individuals. Healthy People 2000: National Health Promotion and Disease Prevention (1990) identified adolescents and young adults (ages 15-24) as a priority population for education and prevention of HIV infection, as well as other sexually transmitted diseases. Major objectives cited for this population include reducing the frequency of unprotected sexual intercourse, increasing abstinence behavior (choosing not to have sex) in individuals who have been previously sexually active, and increasing the use of condoms and other safer practices among adolescents and young adults who are sexually active. Unfortunately, of all at-risk populations, adolescents and young adults represent a group whose AIDS-risk behavior has remained relatively steady since the beginnings of the AIDS crisis. Furthermore, a review of the literature reveals equivocal
findings with respect to personality and behavioral variables associated with high risk sexual practices.

It is suggested that the propensity to engage in problem behavior and expectation for needs satisfaction represent important factors that may mediate the effect of personality and behavioral variables commonly associated with high risk sexual behavior. A model of AIDS-risk behavior in conjunction with these concepts may provide a more complete understanding of college students' sexual behavior and help explain troubling inconsistencies in the research data. After an examination of current literature regarding the response of adolescents and young adults to the AIDS threat, the proposed study attempts to identify meaningful relationships between motivational aspects of AIDS-risk taking, including sociocultural and personality factors, and self-reported risk behavior. College students' AIDS-prevention knowledge, AIDS-related attitudes, and AIDS-risk behaviors will be assessed, as well as potential influences from education materials and peers. Finally, data concerning target variables that could potentially be manipulated and usefully employed in AIDS prevention programs will be explored.

AIDS-Prevention Programs

The emergence of HIV and AIDS has mobilized the forces of public health organizations, educators, civic leaders, and the leaders of groups most effected by the disease. To
a large extent, their efforts have focused on providing accurate information and encouraging appropriate preventative behavior. To date, significant although not necessarily consistent findings have documented behavior changes among gay and bisexual men (Ekstrand & Coates, 1990; Hays, Kegeles & Coates, 1990; Catania, Coates, Stall, Bye, Kegeles, Capell, Henne, McKusick, Morin, Turner, & Pollack, 1991; Martin, 1987), intravenous drug users (Becker & Joseph, 1988; Watters, Case, Huang, Cheng, Lorvick, & Carlson, 1988; Des Jarlais, Friedman, & Casriel, 1990), and college students (DiClemente, Forrest, Mickler, & Principle Site Investigators, 1990; Sheehan, Ambrosio, McDevitt, & Lennon, 1990). Ekstrand and Coates (1990) reported the results of an on-going longitudinal study regarding the sexual behavior of gay and bisexual men in response to the AIDS crisis. From 1984 to 1988, the study documented a reduction in the frequency of all forms of unprotected anal intercourse reported by gay and bisexual men from approximately 70-80% to 10-20%. Smaller, but significant gains were seen in the reduction of the number of individuals having sex with multiple or anonymous partners. Furthermore, maintenance of these gains was relatively stable as only 12-16% of the subjects relapsed from the low risk category to the high risk group.

DiClemente et al., (1990) found that approximately 38% of college students they surveyed reported a decrease in
sexual behavior without using a condom. Thirty-three percent reported a decrease in number of sexual partners, while 10% engaged in anal intercourse less frequently. Sheehan et al., (1990) found that 85% of university students in a 1988 sample reported changing their sexual behavior to reduce their risk of HIV-infection. In comparison, only 11% of a 1986 sample claimed that they changed their sexual behavior.

Despite evidence that significant numbers of individuals are engaging in less risky sexual behavior, most studies report substantial groups of individuals who continue to practice frequent high-risk sexual behaviors. DiClemente et al., (1990) report that 37% of the subjects in their study never used condoms during sexual intercourse and nearly two-thirds use condoms less than half of the time. DeBuono, Stephen, Zinner, Daamen, & McCormack (1990) report that 87% of women seeking services at a university student health service were sexually active. Of these women, only 25% reported condoms as their primary method of birth control (up from 7% in 1975) and 58% said that their male sexual partners seldom or never used a condom during intercourse. Fisher & Misovich (1990) conclude that the college students in their sample did not significantly change their sexual behavior patterns from 1986 to 1988, despite increasing their knowledge about AIDS-risk behaviors.
AIDS-Risk in Adolescents

DiClemente (1990) highlights the increasing risk of adolescent populations to HIV and AIDS. He cites the prevalence of unprotected sexual intercourse and the frequency of sexually transmitted diseases (STDs) as causes for concern regarding adolescent vulnerability to the AIDS virus. In one study, only 47% of adolescent females and 25% of males report condoms as their primary method of birth control (Harris, 1986; cited in DiClemente, 1990). Furthermore, evidence suggest that adolescents report an increase in the number of sexual partners (Zelnik & Kantner, 1977) from 1982 to 1988, and a decrease in the age at which they first experienced sexual intercourse (Centers for Disease Control, 1990).

In addition to risky sexual practices, adolescents have the highest rates of STDs across all age groups (Bell & Hein, 1984). Of the 20 million yearly reported STD cases, more than half are estimated to occur in individuals under age 25 (Bell & Holmes, 1984). Evidence suggests that STDs are associated with increased risk for HIV infection (Quinn, Glasser, Cannon, Matuszak, Dunning, Kline, Campbell, Israel, Fauci, & Hook, 1988). Further complicating the problem, research suggest that adolescents who would most benefit from the use of condoms (those having multiple sex partners, promiscuous partners, or casual sex partners) are the least likely to use them (Biglan, Metzler, Wirt, Ary, Noell, Ochs, ...
AIDS-Risk in College and Young Adult Populations

Evidence suggests that high risk behavior in adolescence continues into young adult populations. College students in the "traditional sense" (recent high school graduates) arrive at college with only the knowledge they gained through their high school years and thus, may be expected to continue and perhaps increase their level of risk behavior (particularly sexually related). Health educators around the United States and Canada report that college students have accurate information about AIDS, but still maintain high levels of AIDS-risk behavior (Pulford, 1991). The American College Health Association (1988; cited in Pulford, 1991) reports:

In a campus environment many students are faced with new independence, self-determination, and strong peer pressures to adopt certain behaviors. For some students, an uncertain sense of identity and self-esteem can further complicate decision-making. Experimentation with sexual behaviors and/or drug use may put college and university students at greater risk for infection. Young adults often feel invincible and tend to deny personal risk. Many people in campus communities believe that HIV infection and AIDS are problems faced elsewhere, or are concerns for "other kinds" of people. The prolonged latency between infection with HIV and the eventual development of full-blown AIDS will promote the relative invisibility of the infection, an effect which will seem to validate the myth among students (and some faculty and administrators) that "it can not happen here" (pp. 104-105).

At the annual meeting of the American College Health Association in 1987, 90% of health professionals identified
sexual health concerns, with an emphasis on STDs and AIDS, as the primary physical and emotional concern facing college students and young adults in the 1990s (Guyton, Corbin, Zimmer, O'Donnell, Davis Chervin, Conant Sloane, & Dyer Chamberlain, 1989). Fisher & Misovich (1990) found that 81% of college students reported that they were sexually active in 1988, compared to 71% in both 1986 and 1987. Similarly, Bishop & Lipsitz (1991) reported an increase from 63% (1982) to 74% (1988) of college age individuals who report having sexual intercourse. They were also more likely to engage in sexual intercourse with a greater number of partners over this time period.

Other evidence suggests that young adult populations continue to practice AIDS-risk behaviors with some frequency. While gay and bisexual populations generally report reduced AIDS-risk behaviors, studies indicate that young gay men are the most resistant to change and continue to demonstrate more frequent AIDS-related risk-taking. Evidence suggests that younger gay men were more likely than older men to engage in unprotected anal intercourse (Ekstrand & Coates, 1990), as well as to have non-monogamous relationships (McKusick, Coates, Morin, Pollack, & Hoff, 1990). In addition, Hayes et al., (1990) found high rates (43%) of unprotected anal intercourse in gay men aged 18-25 in relation to older gay men. Thus, young adults appear more resistant to modifying AIDS-risk
behavior even among members of one of the most vulnerable populations (gay males).

The Centers for Disease Control (1992) report that teenagers comprise only .4% (808) of the known AIDS cases in the United States. However, the 20-24 age range comprises nearly 4% (8,402) of known cases, while 25-29 year old individuals make up over 15% (33,226) of known AIDS cases. Given that the estimated average incubation period is nearly ten years (Bacchetti, 1990), it is probable that the majority of AIDS victims ages 20-29 contracted HIV during the adolescent or the early adult years. It appears that converging lines of evidence point to late adolescence and early adulthood as potentially critical times for addressing AIDS-risk behaviors. Furthermore, an understanding of the factors that support both AIDS-risk behavior, as well as safer practices is needed. Hence, the focus of the proposed investigation turns to the exploration of factors associated with AIDS-risk behavior.

Theoretical Framework

This study examines the hypothesis that AIDS-related risk taking behavior occurring in late adolescence and young adulthood can be understood, contextually, as part of a cluster of variables which include an individual's expectation for needs satisfaction, propensity toward other problem behaviors, and the strength of AIDS-related attitudes previously associated with the high risk sexual
behaviors. The study is designed to test a preliminary model of the relationship between background personality and behavioral variables, expectancy concepts, and self-reported risk-taking behavior as it relates to the potential HIV infection. In the section below, we examine a model of risk reduction that incorporates an extensive body of literature in an attempt to elucidate the process of AIDS-related behavior change.

The AIDS Risk Reduction Model (ARRM)

The AIDS Risk Reduction Model (Catania, Kegeles, & Coates, 1990) suggests a three-stage framework which includes both social and psychological factors that address AIDS-risk behavior and people's attempt to modify unsafe practices. The goal of the model is a better understanding of factors associated with an individual's ability, or lack of ability, to change high risk sexual behavior. ARRM represents a compilation of research demonstrating relationships and associations between a cluster of AIDS-related attitudes and high risk behavior. Catania et al., (1990) note that the term "stage" is used to imply "a marker in the change process" and does not represent an invariant progression of events. Some individuals may skip over steps or process material from different stages simultaneously. Furthermore, particular aspects of variables, such as different bits of AIDS prevention knowledge, may be important in more than one stage of the
process. The organization of the model into stages represents a heuristic framework which highlights the critical aspects of the change process. Catania et al.'s. (1990) three stages of behavior change include (1) recognition and labeling of one's behavior as potentially risky, (2) making a commitment to alter high risk behavior in favor of safer practices, and (3) discovering and enacting strategies for changing the behavior. The following discussion attempts to explicate the details of the model and borrows extensively from Catania et al., (1990).

Stage One: Recognition and Labeling

The first stage incorporates recognition of the facts surrounding the AIDS virus and how the individual perceives this information as affecting his or her life. Factors that are particularly relevant to this stage include knowledge of risk behavior associated with the transmission of HIV, belief in personal vulnerability to the disease, and viewing the personal contraction of the AIDS virus as undesirable.

HIV Transmission and Prevention Knowledge: To date, many prevention programs have focused on providing factual, accurate information as a primary method for combating the spread of the disease. Studies have focused on HIV transmission and prevention knowledge, AIDS-related attitudes, and possible predictors variables related to
AIDS-risk behavior (DiClemente, 1990; Baldwin & Baldwin, 1988; Emmons, Joseph, Kessler, Wortman, Montgomery, & Ostrow, 1986). Educational programs have demonstrated some impressive results including increased levels of AIDS-related knowledge in college students (Dommeyer, Marquard, Gibson, & Taylor, 1989). Emmons et al., (1986) found that knowledge of safe sex guidelines and AIDS-risk behaviors discriminated between gay men engaging in high- versus low-risk sexual behavior. It appears that most participants in recently reported studies have entered the studies with basic AIDS knowledge already at their disposal.

Although dispersal of HIV prevention information has been relatively successful, Fisher and Misovich's (1990) review article concluded that knowledge of, and favorable attitudes about safer sexual practices were not reliable predictors of safer practices in college students. Studies have documented significant groups of young adults who continue to engage in frequent AIDS-risk behavior despite adequate knowledge surrounding transmission of the disease (Kegeles, Adler, & Irwin, 1988; DiClemente et al., 1990; Skurnick, Johnson, Quinones, Foster, & Louria, 1990; Keller, Bartlett, Schleifer, Johnson, Pinner, & Delaney, 1991; Moore & Rosenthal, 1991; DiClemente, 1991; Cates, 1991). Kegeles et al., (1988) conducted a one year follow-up on San Francisco adolescents' attitudes regarding changing risky sex practices. The results suggest that
most adolescents understood the value of condoms in reducing the risk of HIV infection and placed importance upon using contraceptives to protect against contracting STDs. Nevertheless, female respondents showed no increase in their intention to have their partners use condoms and male subjects actually reported fewer intentions to use condoms to prevent STDs.

In their review of the AIDS-risk behavior literature, Fisher & Fisher (1992) conclude that AIDS knowledge and prevention information may be a necessary component in AIDS-risk reduction, but is not sufficient to produce a behavior change. In addition to accurate knowledge, the motivation to reduce risky behavior must be incorporated with knowledge and risk-reducing behavioral skills to stimulate AIDS-preventive behavior. As Fisher and Fisher illustrate, many prevention programs have been relatively successful in providing accurate AIDS-reduction information. However, motivating individuals to engage in safer practices has proved more difficult. Fisher & Fisher (1992) conclude that more attention needs to be placed on developing programs that teach appropriate behavioral skills to facilitate lower risk behavior.

**Perceived Risk:** Evidence suggests that one’s perception of vulnerability to the AIDS virus is related to high risk behavior (DiClemente et al., 1990; Klein, Sullivan, Wolcott, Landsverk, Namir, & Fawzy, 1987). The
notion of perceived invulnerability (Elkind, 1967) or unrealistic optimism (Weinstein, 1980) has been used to describe the adolescent tendency to believe that one is unique in some way, and therefore, less vulnerable to negative events and more likely to have positive experiences. Such concepts are often cited as explanations for adolescent risk taking even though potential consequences may be extreme. However, Jacobs-Quandrel, Fischhoff, & Davis (1993) suggest that there is relatively little empirical evidence supporting the notion that invulnerability is a characteristic unique to adolescence. Millstein (in press; cited in Jacobs Quandrel et al., 1993) reports significant evidence of invulnerability in college students and adults, as well as adolescents. Consequently, perceived invulnerability may be related to AIDS-risk behavior in adults as well.

Research findings support the notion that perceived (in)vulnerability may be related to AIDS-risk behavior. DiClemente et al., (1990) found that college students who reported a high degree of perceived risk for contracting HIV were more likely to report increased condom use during sexual intercourse. Hays et al., (1990) reported that young gay men who practice unprotected anal intercourse were more likely to rate it as less risky than individuals who did not practice this behavior. In addition, perception of personal risk has been associated with
decreases in risky behavior in gay physicians, but not in gay college students (Klein et al., 1987). However, conflicting evidence suggests that perceived vulnerability may have a different relationship to high risk behavior in some individuals. Fisher & Misovich (1990) found that individuals who viewed other people as considerably more vulnerable to HIV infection actually engaged in considerably more sexually risky behavior, despite the fact that they possessed accurate HIV transmission knowledge themselves. Furthermore, perceived risk did not differentiate individuals engaging in high risk behavior from those utilizing safer practices (Siegel, Mesagno, Chen, & Christ, 1989); and was found to be positively related to HIV-risk behavior (anal intercourse) in young gay men (Hays et al., 1990).

Thus, it seems that perceived vulnerability may serve as a motivator for safer practices in some individuals. However, Hays et al.'s (1990) results suggest that some individuals may accurately perceive their behavior to be more risky, but continue to engage in it. It seems reasonable to hypothesize that the relationship of perceived risk on AIDS-related risk-taking may be moderated by an individual's willingness to engage in a variety of other risk behaviors. While perceived risk alone may be a poor indicator of AIDS-risk behavior, perceived risk in conjunction with a measure of other problem behaviors may
serve as a better predictor of AIDS-risk behavior.

**Undesirability:** Obviously, individuals who do not view contraction of the AIDS virus as a negative event will be less concerned with altering or changing AIDS-risk behaviors. While most individuals are likely to view contracting HIV as undesirable, the degree to which HIV infection is seen as a problem may influence the importance an individual places on practicing safer behaviors. Moore & Rosenthal (1991) found that a lower perceived risk of contracting HIV was associated with more risky sexual practices in a population of 17 to 20-year-old Australian students.

**Stage Two: Commitment to Change**

The second stage of ARRM involves making the decision to reduce AIDS-risk behavior and committing to follow through with this decision. In part, the individual arrives at this commitment to change by engaging in a cost-benefit analysis associated with the behavior change. Other factors operating at this stage include an individual’s feelings of self-efficacy, beliefs in response efficacy, the enjoyment value associated with various risk behaviors, and other social and societal influences, such as the availability of accurate AIDS-related knowledge.

**Cost-Benefit Analysis:** ARRM posits that the individual engages in a decision making process involving a cost-benefit analysis associated with the behavior change.
Thus, the likelihood that an individual will choose to engage in less risky behavior is dependent upon the perceived benefits of the new behavior over the old. While the decision to engage in a sexual act may not be governed by a rational decision making process, ARRM proposes that an individual is more likely adopt lower risk behaviors in sexual encounters if they have previously weighed the potential costs and benefits associated with competing behaviors and made a conscious commitment to change.

**Response Efficacy and Enjoyment Value:** Evaluating the merits of a behavior change incorporates the perceived effectiveness of competing behaviors at reducing the consequences of the original behavior (response efficacy) and the level of enjoyment that the individual associates with the behaviors involved. If safer sex practices are not viewed as effective methods for reducing the risk of contracting AIDS, the probability of a change is low. Joseph, Montgomery, Emmons, Kessler, Ostrow, Wortman, O'Brien, Eller, & Eshleman (1987) found that the belief that lower risk behaviors reduce the risk of HIV infection was related to behavior change. Others studies report that response efficacy successfully discriminates high versus low risk sexual behavior in gay men (Emmons et al., 1986; McKusick, Hortsman, & Coates, 1985). Thus, evidence suggests that response efficacy may be an important consideration in the decision process.
A second important variable in the commitment to change is the enjoyment value associated with the various competing behaviors. Those behaviors with the highest enjoyment value will be the most resistant to change. Likewise, if the behavioral alternatives are not perceived to be as enjoyable, the likelihood that they will be preferred over more enjoyable, high risk behaviors is low. Hays et al., (1990) found that gay men who engaged in a greater frequency of high risk behaviors were more likely to report greater enjoyment from anal intercourse without condoms than low risk-takers. It is hypothesized that high risk takers will report higher levels of enjoyment from risky behavior.

**Self-Efficacy:** ARRM also suggests that people's perception of their ability to bring about desired results has also been shown to be associated with commitment to change. Gerrard, Gibbons, & Warner (1991) report that perceived vulnerability to the AIDS virus was moderated by the individual's perceived ability to control the negative event. Thus, perception of vulnerability to HIV infection increased as the perceived control over and desirability of the event decreased. McKusick, Coates, Morin, Pollack, & Hoff (1989) found that low self-efficacy was associated with higher rates of unprotected anal intercourse, while McKusick et al., (1985) found that high levels of self-efficacy were related to the performance of more low risk
behaviors in gay men.

**Knowledge and Social Influences on Commitment.** The third major aspect of making the commitment to change is the availability of knowledge regarding low risk alternative behavior and social influences on a person's commitment. Reliable information regarding more healthy and potentially enjoyable substitute behaviors may be critical to the change process. For example, an effective educational campaign which highlights potential enjoyment of lower risk behavior, such as condom usage during sexual intercourse, may provide additional incentive toward change. Although an individual may have adequate knowledge regarding the danger associated with HIV and how to prevent its transmission, motivation for change may suffer if complementary information is unavailable regarding safe, enjoyable, and desirable alternative behaviors.

Social factors and pressures that exert influence on possible behavior change may include the availability of social support and the behavior of an individual's norm group. Parental, peer, and other societal norms may play key roles that influence an individual's feelings of self efficacy, attitudes and beliefs about sex, and the perceived desirability of low risk behavior. For example, if one believes that their peers are unsupportive of safe sex, one may be less likely to perceive high risk behavior as a problem and consequently, will be less likely to
commit to reducing their risk.

**Taking Action**

The final stage of ARRM focuses on the process of taking steps to bring about the desired behavioral change. Based upon the problem solving models of Gross & McMullen (1983) and Fischer, Winer, & Abramowitz (1983), Catania et al., (1990) hypothesize that the "Taking Action" stage is composed of three phases including (1) information-seeking regarding ways to change their high risk behavior, (2) obtaining remedies through the use of friends or professional help, and (3) enacting these solutions. While these stages are not mutually exclusive, they are separated for conceptual clarity.

**Information Seeking and Obtaining Remedies:** Once an individual has made a commitment to change, ARRM suggests that he or she begins to seek information on how to change current high risk behavior(s). While some people may turn to self-help methods, others may seek advice from friends or acquaintances, or seek advice from health professionals. Cultural, social, and personality factors likely influence the type of help sought, although little research has been conducted that examines these factors. McKusick et al., (1985) found that 91% of gay men turned to friends for information about reducing high risk behavior. Help from the medical field was sought by 59% of the respondents while 49% turned to psychological professionals. However,
young adults may employ different information seeking strategies. Sheehan (1991) reviewed research on the response of university students to AIDS and concluded that college students generally do not actively seek out information on AIDS. Adolescents and young adults may receive most of their information from television, music, and other media which are generally supportive of high-risk behavior (Dommeyer et al., 1989). Regardless, the model suggests that most people committed to reducing HIV-risk look for, or attend to, general information on changing their behavior and proceed to obtaining more specific suggestions.

**Enacting Solutions:** Finally, individuals begin to try out methods of reducing high risk behaviors. The success of such solutions will certainly be influenced by the response of an individual’s sexual partner(s). Although the decision to reduce the risk of HIV infection may receive support from a partner committed to the same goals, the entire process of change may break down if an individual is unable to communicate or convince their partner of the importance of this decision. Unfortunately, of the two-thirds of sexually experienced college students in a recent study who reported that they talked to their partners about AIDS, only a third of those individuals discussed safer sex (Welch Klein, Johnson, & Freeman, 1992). Furthermore, only 6% of these individuals actually
talked about condom use. It would seem that sexual communication training alone may be of limited value unless it is personalized for each individual and focused to include specific references to safe sex behavior.

Indeed, sexual communication skills have been shown to be related to contraceptive use (including condoms; Polit-O'Hara & Kahn, 1985). One study reported that 40% of heterosexuals feel unable to discuss safe sex practices with a potential sexual partner (Solomon & DeJong, 1986). Furthermore, Hays et al., (1990) found that AIDS-related risk taking was negatively correlated with reported sexual communication skills. Two other variables that have been associated with motivation for AIDS-risk change are being acquainted with someone who has AIDS or HIV (McKusick et al., 1985) and strength of environmental norms supporting safe sex practices (Condelli, 1986; Emmons et al., 1986; Richardson, Schott, McGuigan, & Levine, 1987).

Catania et al., (1990) suggest most research focused on the relationship between predictor variables and high risk behaviors does not address each stage of the change process adequately. They propose that inconsistencies in the data result from a focus on predictor variables that may, or may not, be related to potentially distant behavioral outcomes (i.e. high risk behavior) for any given individual. For example, although self-efficacy may be involved in the decision to reduce AIDS-risk, the enactment...
of this decision may fail due to an inability to communicate this decision effectively to a potential sexual partner. In such a case, assessing only the decision-making process will likely conclude that self-efficacy was not related to HIV-risk behavior even though the failure seems to lie in the communication process instead. ARRM represents an attempt to incorporate the various factors highlighted in research that influence the process of AIDS behavior change in order to provide a more complete understanding of AIDS-risk behavior.

Problem Behavior and AIDS-Risk

The AIDS Risk Reduction Model examines the process of behavior change with regard to high risk behavior associated with HIV infection. However, it does not adequately examine possible influences associated with alternative approaches to AIDS-risk behavior. One goal of this study is to validate additional influences on the behavior change process that are not incorporated into ARRM.

Jessor, Graves, Hanson, & Jessor (1968) conceptualize a wide variety of problem behavior and its occurrence in society from a social learning approach. Their work emphasizes that (what these authors refer to as) "deviance" is "not an intrinsic attribute of any behavior but involves, rather, a social evaluation of behavior from the point of view of prevailing norms." Further, to classify
as "deviant," a behavior "must depart substantially from normative standards" and "must be of sufficient magnitude to mobilize social control responses." Society's response to the AIDS threat is clear in advocating ways to reduce high risk behavior and prevent the spread of the disease. As a result, any behavior that increases the probability of HIV transmission is clearly "deviant" from the standpoint of the value-structure of that society.

However, while AIDS-risk behavior has mobilized social control responses, it is unwarranted to suggest that AIDS-risk behaviors in college populations are "deviant." AIDS-risk behavior, in the form of multiple sexual partners and unprotected sexual intercourse, may represent normal behavior for most university students. Current estimates suggest that the prevalence of college students who have engaged in sexual intercourse is about 70-80% (Bishop & Lipsitz, 1991; Fisher & Misovich, 1990). In addition, Fisher & Misovich (1990) found that 64% of students reported engaging in unprotected vaginal intercourse in the past year. They also found that approximately 30% of college students reported that alcohol played a part in over half of their sexual activity. Thus, AIDS-risk behavior can not be considered "deviant" in college students. Nevertheless, it remains a problem to the extent that it increases the likelihood of HIV (or other STD) contraction and the spread of the AIDS virus.
Consequently, it will be associated in this study with a cluster of other behaviors (e.g. illegal drug use, drinking and driving, antisocial behavior, etc.) that pose problems to society, but that may receive a significant amount of support from certain segments of the population.

Donovan & Jessor (1985) highlight research demonstrating consistent bivariate relationships between a variety of problem behaviors. Their results suggest that problem behavior commonly associated with adolescents and young adults, including illicit drug use, precocious sexual behavior, problem drinking, and other delinquent behavior may represent a single underlying behavioral syndrome in a subgroup of "problem" individuals. They further hypothesize that this syndrome reflects an underlying "general dimension of unconventionality" which includes an individual's personality and social environment. One implication from Donovan and Jessor's work is that this general underlying tendency toward unconventionality is sufficient to account for a wide range of problem behavior and that specific factors associated with any one behavior are secondary.

Osgood, Johnston, O'Malley, & Bachman (1988) analyzed the influence of specific problem behaviors (criminal behavior, heavy alcohol usage, marijuana use, use of other illicit drugs, and dangerous driving) with respect to a general tendency toward problem behavior. They report that
problem behavior suggesting, a general tendency toward unconventionality, could account for the positive correlations between different problem behaviors. However, an unconventional syndrome was not able to adequately account for the variance associated with each problem behavior. Osgood et al., (1988) suggest that each behavior may represent part of a general tendency, as well as a unique behavioral phenomena. Their findings also demonstrate that the influence of any one behavior on the occurrence of any other behavior was negligible. Hence, the cluster of problem behaviors do not seem to mutually influence each other directly. The researchers suggest that although this evidence supports the general tendency hypothesis, the lack of relationship between specific behaviors suggest that predictions regarding the occurrence of a behavior from past deviance are tentative at best.

**Value-Access Disjunction**

Jessor et al., (1968) hypothesize that problem behavior represents an attempt to satisfy goals when more legitimate avenues are seen as unavailable or unlikely to bring about the desired goal. Value-access disjunction (VAD), or what has more recently been referred to as perceived life chances (Jessor, 1993), represents the discrepancy between an individual's desired goals and his or her perceived likelihood of achieving these goals. When desirable or valued goals are viewed as unattainable
through socially acceptable means, the probability that an individual will resort to some form of problem behavior to satisfy these goals increases (Jessor et al., 1968; Jessor, 1992). In the context of this study, AIDS-risk behavior, for some individuals, may represent an attempt to satisfy valued goals which are not seen as accessible through more socially acceptable means.

It is hypothesized that expectation for needs satisfaction (value-access disjunction) will predict motivations for AIDS-related risk taking in a sub-group of individuals. Furthermore, motivation for sexual risk-taking in some individuals may be conceptualized as an underlying feature of unconventionality and thus, will be related to the occurrence of other problem behaviors. Biglan et al., (1990) found that adolescent high risk sexual behavior was related to other forms of problem behavior, including antisocial behavior, cigarette smoking, alcohol use, and illicit drug use. However, Osgood et al.'s (1988) results suggest that while AIDS-related risk behavior may be conceptualized, with other problem behaviors, as an underlying feature of unconventionality, a more complete understanding must also include variables (such as those incorporated in ARRM) empirically associated with AIDS-related risk-taking.

Variables associated with high risk behaviors are likely to be endpoint outcomes of a constellation common,
multiply-determined factors. This study examines AIDS-related risk behavior in college students by sampling potential influences in the subjects' social environment (HIV-knowledge, relationship status, perceived social norms, perceived interpersonal barriers, living situation), personality variables (value access disjunction, self-efficacy, enjoyment value of high risk behavior, perceived HIV-risk, sexual communication skills, self-labeling), and reported behavior (reported sexual involvement and problem behaviors).

It seems reasonable to conclude that attitudes reflecting the factors outlined by ARRM might effectively compliment the predictive power of both problem behavior and perceived access to valued goals. It is predicted that a domain specific examination of predictors of AIDS-risk behavior (ARRM), in conjunction with the global measures of problem behavior and value-access disjunction will provide a more complete understanding of AIDS-risk behavior in college students.

At this point, it is necessary to comment on the validity of self-reported sexual and problem behavior. Unfortunately, research on the influence of questionnaire design, mode of measurement effects, and self-presentation bias, as well as numerous other measurement concerns is sparse in the AIDS-risk literature. Catania, Gibson, Chitwood, & Coates (1990) report that most validity
indicators for self-reported sexual behavior (including biological indicators, partner reports, and indices of condom use) are either too unreliable, cumbersome, or impractical to be effectively employed in most research. They do suggest that risk indices based upon self-reported sexual behavior have generally predicted HIV seroconversion rates over time. Nevertheless, the self-report nature of this study presents a problem in interpreting and generalizing the results. Catania et al., (1990) suggest that the most effective means currently available for addressing self-reported response bias is to minimize measurement error. For example, designing questionnaires so that subjects only report behavior from the previous 1-2 months (to increase reliability), maximizing anonymity (using individual questionnaires administered to large groups), and presenting highly sensitive material later in the questionnaire all increase the probability that subjects will remember and report more accurate information.

Hypotheses

AIDS-risk behavior (including unprotected vaginal, oral, and anal intercourse, length of relationship and number sexual partners, and association of drug or alcohol use with sexual activity) is predicted to be positively correlated with the composite scores on an AIDS-attitude
questionnaire, the discrepancy between one’s goals and the expectation of achieving those goals, and the reported frequency of other problem behaviors. The specific hypotheses examined in this study are:

1). Problem behavior is hypothesized to be related to AIDS-risk behavior. Specifically, engaging in other problem behaviors will be positively correlated with AIDS-risk behavior.

2). Value access disjunction is also hypothesized to be positively correlated with AIDS-risk behavior. Thus, the greater the difference between an individual’s desired goals and the expected attainment of these affiliation and achievement goals, the more likely he or she is to engage in high risk sexual behavior.

3). The study predicts that a composite AIDS-attitudes measure incorporating the factors of ARRM will be positively correlated with high risk behavior. As such, a scale that assesses subjects on the variables incorporated in ARRM will account for a significant proportion of the variance associated with AIDS-risk behavior.

4). Finally, it is hypothesized that variance associated with AIDS-related risk-taking in college students will be most accurately predicted by a combination of expressed AIDS-related attitudes, value-access disjunction, and self-reported activity in a variety of problem behaviors, as indicated by an additive contribution
from each of these variables in a stepwise multiple regression analysis.

**Method**

**Subjects**

The study was conducted in a medium-sized mountain city with relatively low AIDS prevalence rates. A total of 272 university students completed the self-report questionnaire in exchange for experimental credit in an introductory psychology class. Thirty-one subjects were eliminated from the analyses based on their reported status as (1) married, or (2) involved in a monogamous relationship for a period exceeding 3 years. The rationale for eliminating these subjects was that they constituted a group of individuals who might engage in a significant amount of risk behavior and thus, potentially score very high on the AIDS-risk measure, while in actuality be at a greatly reduced risk of HIV infection due to their status of being in a "monogamous" relationship. Two other subjects were eliminated due to a failure to complete the questionnaire. The resulting sample of 239 subjects was composed primarily of young, Caucasian university students. The sample consisted of 141 females (59.0%) and 98 males (41.0%). Subjects' reported ages ranged from 17-46, although nearly 85% (202) of the sample were traditional college age subjects 17-23. Almost 95% (226) of the
subjects were of Caucasian descent with the remainder of the sample consisting of 7 Native Americans (2.9%), 2 African Americans (.8%), 2 Hispanic individuals (.8%), and 2 persons of Asian American descent (.8%). The 239 subjects in the study were randomly divided into two groups. The first group, Sample A, was used in the main multiple regression analyses as well as the follow-up analyses. Group B was used in the replication and cross-validation analyses.

Sample A

Sample A consisted of 91 females (57.6%) and 67 males (42.4%) and was composed primarily of individuals of Caucasian descent. Nearly 90% of the group stated that they were single, while roughly 10% reported that they were divorced, separated, or widowed. Seventy-six (47.8%) subjects in Sample A reported that they were currently involved in relationships while 81 (50.9%) were not. Eighty-two (51.6%) of the subjects lived in a university residence hall, fraternity, or sorority. The remaining 77 (48.4%) subjects reported living in a house, apartment, or other residence.

Sample B

Sample B, consisted of 50 females (61.0%) and 32 males (39.0%). Nearly 94% of Sample B were single with the other 6% separated or divorced. Thirty-three subjects (40.2%) stated that they were currently involved in relationships;
and 45 (54.9%) stated that they lived in a university residence hall.

**Measures**

**Demographic Variables:** Subjects were asked relevant demographic information including age, race, gender, academic major, religion, living situation, relationship status, sexual orientation, and if they had ever been acquainted with anyone who had contracted the AIDS-virus (See Appendix A).

**Criterion Measure**

**AIDS-Risk Behavior:** Subjects were asked to complete an ten-item measure reporting the frequency of AIDS-risk sexual behavior (See Appendix B). Answers were scored one through five depending on the reported frequency of oral, anal, and vaginal intercourse in the past month. Frequency of condom usage was based upon subject’s report of condom use during sexual intercourse *Every time, Often, Sometimes, Rarely or Never*. Additional questions included age of first intercourse, total number of sexual partners in the past year and total sexual partners lifetime, shortest time between meeting a partner and first sexual contact, and frequency of sexual contact while under the influence of alcohol or drugs. Each question was scored 0-4 based on the potential risk of exposure to HIV associated with the behavior. A component of current AIDS-risk was computed by averaging the risk scores for reported vaginal and oral
intercourse and the reported frequency of condom use in the past month. The risk scores for the alcohol and drug use questions were averaged to produce a single component reflecting substance use associated with risk behavior. The sum of the scores for each component was totaled to obtain a composite measure of AIDS-related risk behavior.

**Independent Measures**

**AIDS-Related Attitudes:** A 25-item questionnaire based on the AIDS Risk Reduction Model (Catania et al., 1990) was used to assess AIDS-related attitudes (See Appendix C). Within the measure, developed by Hays et al., (1990), a series of brief scales was used to assess subjects' beliefs with regard to variables associated with high risk sexual behavior. These scales assessed self-efficacy (belief that one is capable of performing safer sex behaviors, (with Cronbach's alphas reported by Hays et al., 1990, =.67), perceived social norms (regarding safer practices, alpha=.67), sexual communication skills (belief that one has the ability to successfully talk about safe sex behavior with their partner, alpha=.61), self-labeling (beliefs that one's sexual behavior puts them at risk, alpha=.85), safer-sex efficacy (belief in safe-sex guidelines as an effective means to prevent HIV infection, alpha=.64), interpersonal barriers (belief that safer sex behavior will have negative personal consequences, alpha=.75), enjoyment value (of high risk behaviors, alpha
for unprotected anal intercourse=.71), and perceived riskiness of various high risk behaviors (alpha for unprotected anal intercourse=.60). Two questions in the enjoyment and perceived risk subscales were modified from Hays et al’s. (1990) questionnaire. The wording was broadened to make them applicable to both the original target population (gay males) and heterosexual subjects; and content areas were modified to include attitudes regarding heterosexual oral and vaginal intercourse.

Subjects were asked to respond to the attitude measure on a five-point scale ranging from Strongly Agree to Strongly Disagree. The perceived risk, safe-sex efficacy, self-efficacy, perceived social norms, sexual communication skills, and self-labeling subscales were all hypothesized to be negatively related to AIDS-risk behavior. Thus, stronger beliefs regarding the riskiness of certain sexual behaviors, the effectiveness of safe sex in preventing the sexual spread of HIV, one’s ability to practice safe sex, perceived peer support of safe sex, one’s own communication abilities in sexual situations, and one’s perceived vulnerability to infection were all hypothesized to be associated with lower AIDS-risk scores. Conversely, enjoyment and interpersonal barriers were hypothesized to be positively related to HIV risk behavior. The greater the enjoyment level associated with high risk behaviors and the greater the perceived interpersonal barriers to safe
sex behavior, the greater the likelihood of a person to engage in high risk behavior.

**Problem Behavior Measure:** A questionnaire for high-school students (Jessor et al., 1968) was modified for use with a college population (See Appendix D). Subjects were asked to report their level of activity in a wide variety of problem behaviors including skipping school, driving under the influence, cheating on exams, lying to persons in authority, etc. The 16-item measure required respondents to report their level of engagement in these behaviors on a scale ranging from *never*, *once or twice*, *several times*, to *very often*. Subjects could receive a total 3 points for each question for frequently endorsed behaviors to 0 points for avoided behaviors. The scores from all of the questions were totaled to provide a measure of propensity toward problem behavior.

**HIV Transmission and Prevention Knowledge:** A 25-item true/false questionnaire (Slonim-Nevo, Ozawa, & Auslander, 1991; adapted from DiClemente et al., 1986) was used to assess subjects' HIV transmission and prevention knowledge (See Appendix E). Slonim-Nevo et al., (1991) reported relatively high internal consistency reliability estimates for the measure (Cronbach’s alpha=.85). The total number of correct responses (0-25) was used as a measure of AIDS-knowledge.
Value-Access Disjunction: Subject's expectation for needs satisfaction was assessed with two companion fifteen-item scales developed by Jessor et al., (1968). The first set of items asked subjects to rate "how much do I like" a list of thirty goals (15 related to academic achievement and 15 related to affiliation needs). An additional question was added to the measure which assessed "how much do I like to be involved in an intimate relationship in the next year." Values were marked on a Likert-type scale ranging from "neither like nor dislike" (score 1) to "like very much" (score 100). The second set of questions asked subjects to rate "how strongly I expect" to achieve the same thirty-one goals. Once again, expectancies were marked on a Likert type scale ranging from "sure it will not happen" (score 1) to "sure it will happen" (score 100). Two discrepancy scores (achievement discrepancy and affiliation discrepancy) were computed for each subject representing the mean difference between value and expectancy scores. Value-access disjunction in this case refers only to those areas where the valued goals exceeds one's expectation of achieving that goal. Thus, items where the "expectancy" score exceeded the "value" score were assigned a value of 0. The value-expectancy disjunctions for both scales were combined to form a composite measure of discrepancy. The individual scales have previously been shown to have relatively high internal
consistencies, thus supporting the validity of combining the two scales. Bradley, Carman, & Petree (1991) report a Cronbach's alpha for the achievement scale of .89 and for the affiliation scale of .80. The VAD scale is presented in Appendix F.

**Social Desirability Measure:** Twenty true/false items from the Jackson Personality Inventory (1967) were included as a measure of socially confirming responses (See Appendix G). The number of responses endorsed in a socially desirable manner was scored (1-20) and used to assess possible under or over reporting of the risk variables based upon social expectations.

**Procedure**

All subjects were asked to anonymously complete a questionnaire packet including demographic items, the AIDS-knowledge questionnaire, the AIDS-attitude scale based on the ARRM, the AIDS-risk behavior questionnaire, the measure of problem behavior, the measure of social desirability, and the value-access disjunction questionnaire. Subjects were informed that the questionnaire requested information regarding risk behavior, AIDS, and their hopes about the future. Subjects were assured of their anonymity and asked to honestly answer the questions in the questionnaire to the best of their ability. Subjects were thanked for their participation and encouraged to speak with the examiner regarding any questions they might have.
**Analyses**

Frequency distributions and plots were generated to examine the distribution of each of the variables. A stepwise multiple regression analysis was then performed to determine the contribution of each of the independent variables to the prediction of the criterion variable. The set of predictor variables used in the analyses included problem behavior, AIDS-related attitudes, value-access disjunction, HIV transmission and prevention knowledge, and social desirability. A principle components analysis was computed on the AIDS attitude questionnaire and the value-access disjunction measures to determine the factor structure of the measures and eliminate redundant items. With these revised measures, stepwise multiple regression analyses were again performed on the main sample using AIDS-risk as the dependent variable and the revised factors from each of the measures as the independent variables. Factors that aided in the prediction of AIDS-risk were retained in the measure while all other factors were eliminated. An exploratory stepwise multiple regression analysis was then performed on the main data set using AIDS-risk as the dependent variable, and problem behavior, social desirability, HIV transmission and prevention knowledge, and the revised value-access disjunction and AIDS attitude measures as the predictor variables. Coefficients from this analysis were then used in a...
regression equation to estimate predicted values of AIDS-risk in the cross-validation sample.

Finally, several exploratory analyses were also conducted. Pearson product moment correlations were computed between AIDS-risk behavior (including all of the items in the risk questionnaire) and 1) demographic variables, 2) AIDS-related attitudes items, and 3) problem behavior items.

Results

Sexual Behavior

Statistical analyses regarding the study's main hypotheses were computed using the subjects from Sample A. Of the 158 subjects in Sample A, 133 (84.2%) reported that they had at least 1 sexual partner in their lifetime (See Appendix I). Twenty-three subjects (14.6%) reported having 16 or more partners in their lifetime, while only 25 (15.8%) had no sexual partners. Self-reported age of first intercourse ranged from 12-20 years of age with 121 subjects (91.0%) having sexual intercourse prior to their 19th birthday. Thirty-six of these subjects (27.1%) experienced sexual intercourse before the age of 16. Of the 93 individuals reporting sexual activity in the month preceding the survey, only 21 (22.6%) stated that they used condoms "every time" they had sexual intercourse, while 45 (48.4%) of the sexually active subjects "rarely or never" used a
condom. Anal intercourse was reported by only 5 of the 158 subjects and only 3 individuals stated that they were homosexual or bisexual.

Sixty-seven (81.7%) subjects in Sample B reported having at least one sexual partner in their lifetime. Ten (12.2%) individuals had 16 or more life time partners and 15 subjects (18.3%) reported no previous sexual partners. Age of first intercourse ranged from ages 12-21 for Sample B. Fifty-eight people in this sample (86.6%) reported having sexual intercourse before the age of 19, while 22 subjects (32.8%) experienced sex before 16 years of age. Of the 44 subjects who reported having sexual intercourse in the past month, 18 (40.9%) stated that they "always" used a condom, while 19 (43.2) reported that they rarely or never used and condom. Six individuals reported that they engaged in anal intercourse. Two subjects in Sample B classified themselves as bisexual. Appendix H presents the mean comparisons across both samples for the main variables in the study. Frequency totals for both samples combined are reported in Appendix I on the components of the AIDS-risk questionnaire.

HIV Transmission and Prevention Knowledge

Subjects in both samples were uniformly high in their level of knowledge regarding transmission and prevention of HIV and AIDS (See Table 1). When subjects from Sample A and Sample B were combined, roughly 63% (151) of the subjects scored a 24 or higher on the 25 point HIV knowledge measure.
Furthermore, 98% (235) of the subjects received a score of 22 or better. Of the items frequently missed, 199 individuals (83.3%) were not aware that women are more likely to contract HIV during their menstrual cycle. Sixty-one subjects (25.5%) did know that AIDS usually leads to a variety of other medical diseases.

<table>
<thead>
<tr>
<th>Score</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cum Percent</th>
</tr>
</thead>
<tbody>
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<td>.4</td>
<td>.4</td>
</tr>
<tr>
<td>20.00</td>
<td>1</td>
<td>.4</td>
<td>.8</td>
</tr>
<tr>
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</tr>
<tr>
<td>25.00</td>
<td>27</td>
<td>11.3</td>
<td>100.0</td>
</tr>
<tr>
<td>Total</td>
<td>239</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Note: Total of 25 Points Possible

All of the other questions on the knowledge measure were answered correctly by over 95% of the subjects in the entire sample. Fisher and Fisher’s (1992) conclusion that adequate knowledge of HIV transmission and prevention information is a "necessary" condition for behavior change is supported within this sample. Considering the high levels of AIDS knowledge recorded by these subjects, we can
conclude that the significant amounts of high risk sexual behavior reported by the subjects in this study cannot be attributed to a deficit in transmission and prevention knowledge.

It is interesting to note that 233 subjects (97.5%) answered "Anybody can get AIDS" in the affirmative. At some level, it would appear that the vast majority of the subjects understand that everyone is potentially at risk for contracting HIV under certain circumstances. However, whether individuals believe that they are personally at risk for infection is another matter. Additionally, 235 subjects (98.3%) stated that "Using a condom during sex can lower your chance of getting AIDS." Subjects almost unanimously expressed awareness that condom usage can be an effective weapon in the fight against AIDS. Yet, nearly half of the currently sexually active subjects in this study (those that "rarely or never" used condoms) demonstrated that the negative aspects of using condoms outweigh the potential risk of HIV infection that results from not using condoms.

**Predicting AIDS-Risk Behavior**

The mean, standard deviation, and range for each of the main variables in the study are presented in Table 2. Stepwise multiple regression analyses on the AIDS-risk behavior measure are presented in Table 3.
Table 2
Means, Standard Deviations, and Ranges for Study Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std dev</th>
<th>Minimum</th>
<th>Maximum</th>
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<td>14.000</td>
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<td>46.000</td>
</tr>
</tbody>
</table>


Problem Behavior

Table 3 indicates that only one variable, reported problem behavior, entered the stepwise regression equation. Neither AIDS attitudes nor value-access disjunction achieved probability values sufficient for inclusion in the equation (p<.10) once the variance attributable to problem behavior was entered. Problem behavior accounted for approximately 31% of the variance in AIDS-risk behavior (F[1,157] = 71.84, p<.0005) and was associated with a positive Beta weight. With regard to this study's first hypothesis, problem behavior was found to be positively correlated with AIDS-risk. All of the items on the problem behavior questionnaire were significantly correlated with AIDS-risk except Item 6 (dealing with plagiarizing homework, see Appendix J). Of all the items on the questionnaire, Item 5, the reported frequency of drinking and driving, was most significantly correlated with AIDS-risk, while Item 16, smoking marijuana, hashish, or other cannabis, closely
followed. These results are consistent with the hypothesis that AIDS-risk behavior is positively related to a variety of other "problem behaviors."

<table>
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<tr>
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<th>AdjRsq</th>
<th>F(Eqn)</th>
<th>SigF</th>
<th>RsqCh</th>
<th>FCh</th>
<th>SigCh</th>
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<tr>
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<td>.800</td>
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<td>.0017</td>
</tr>
</tbody>
</table>

Notes: N=158; df = 154; Step 1 used SPSSX default p values for entry (.10); steps 2-3 continued the analysis beyond the entry criterion utilizing "forced entry" to expose possible additive effects. MultR=Multiple R, Rsq=R², AdjRsq=Adjusted R Squared, F(Eqn)=F, SigF=Probability of F, RsqCh=R² change, FCh=F of the change, SigCh=Probability of R² change.

Value-Access Disjunction

Once the variance accounted for by problem behavior was removed, VAD did not account for sufficient additional variance to reach the default probability criterion value (p<.10) to enter the regression equation as a predictor of AIDS-risk behavior. After examination of the potential additive contribution of VAD and zero-order correlation between VAD and AIDS-risk measures via forced entry into the equation, VAD did not account for any of the variance associated with HIV risk (See Table 3). With regard to the second hypothesis, value-access disjunction, as measured in this study, was not significantly associated with AIDS-risk behavior.

AIDS-Related Attitudes

As was the case with the value-access disjunction
measure, the AIDS attitude variable did not enter the regression equation after the variance associated with problem behavior was removed. When the AIDS attitude measure was forced into the regression equation, it accounted for less than 1% of the variance (See Table 3). These results indicate that the hypothesized positive relationship between the AIDS attitude questionnaire and AIDS-risk was not supported by the data. The results do not suggest, however, that each of the subscales comprising the AIDS attitude measure is unrelated to AIDS-risk, but only that the combination of subscores used to determine the total AIDS attitude score (including that valances assigned to each subscore) were not related to AIDS-risk behavior. In addition, it is uncertain whether each of the eight hypothesized subscales in the AIDS attitude measure actually represents a distinct construct which adds additional information to the attitude picture. Consequently, it is possible that a factor analysis of the measure would reveal factors significantly correlated with AIDS-risk, but that were obscured by other items which were uncorrelated to risk or even correlated in the opposite direction from predicted relationships. To explore this possibility, an exploratory factor analysis was performed.

**Factor Analyses**

After the initial multiple regression analysis, the AIDS-related attitude measure was factor analyzed to
identify its significant components. Given the theoretical nature of the AIDS attitude measure, its hypothesized components, and the newly-developed scoring system incorporated in this study, a principle components analysis was conducted to empirically validate the factor structure of the measure and evaluate the accuracy of the directional relationships assigned to each subscale with respect to AIDS-risk behavior. The resulting factors (See Appendix K) were then entered as the independent variables in a stepwise multiple regression analysis to examine whether any factors were predictive of AIDS-risk behavior. Finally, factors not correlated with AIDS-risk behavior were eliminated from the measure and the resulting AIDS attitude measure was reentered into the initial multiple regression equation. The value-access disjunction measure was also subjected a similar principle components analysis and revised for reentry into an exploratory regression equation.

**AIDS-Related Attitudes**

A principle components analysis was performed on the 24 item AIDS attitude scale. Items retained were selected based upon (1) their loading primarily on one factor, (2) an item-scale correlation of .50 or greater, and (3) that the coefficient alpha reliability increased when the item was included in the factor. The resulting factor coefficients above +/- .3 are presented in Appendix K.

The varimax rotation yielded seven factors in the scale.
which accounted for 65.2% of the variance in the AIDS attitude measure. The seven factors closely corresponded with the theoretical components of the measure. Factor 1 included the questions corresponding to the self-efficacy construct (e.g. "I can get a person I'm having sex with to use condoms if I want them to"). All four of the hypothesized "Self-Efficacy" items loaded on Factor 1, although Item 1 did not meet the inclusion criteria and was eliminated. Factor 2 included all three of the questions relating to perceived interpersonal barriers to behavior change, such as "If I suggested using condoms to a person I was having sex with, he or she might be offended." The third factor incorporated the three questions which assessed self-labeling of behavior (e.g. "There is little chance that I could catch or spread AIDS from what I do sexually"). Factor 4 items dealt with perceived risk of sexual behaviors for contracting HIV and included all three of the hypothesized "perceived risk" items, such as "How risky for you to get AIDS is vaginal intercourse where the male does not wear a condom." All of the items representing the perceived social norms construct were included in Factor 5 (e.g. "Most of my friends think you should always use a condom when having intercourse"). Factor 6 items assessed beliefs that safer sex leads to a reduction in AIDS-risk, such as "People who follow safe sex guidelines can usually avoid getting the AIDS virus." Factor 7 included two of
three items regarding the enjoyment value associated with sexual behaviors ("How much do you enjoy or think you would enjoy vaginal intercourse where the male does not wear a condom," respectively. The third Enjoyment item (AA21) loaded with Factor 6, although its relatively low factor loading eliminated it from the scale.

The items that were hypothesized as measuring sexual communication skills were split between Factors 1 and 2 (Item 3, "It is easy for me to tell a sex partner that I won’t have sexual intercourse without a condom"; Item 9, "I find it difficult telling a sex partner not to do something I think is unsafe"; and Item 15, "It’s easy for me to tell a sex partner what I do or don’t like to do during sex"). All of the items in the sexual communication skills subscale failed at least one of the inclusion criteria and were subsequently removed from the measure. The means, standard deviations, Cronbach’s Alpha coefficient, and correlations with the AIDS-risk score for each of the seven remaining subscales are presented in Table 4. Cronbach’s Alpha coefficients ranged from .64 to .86 for the seven components.
Table 4

Means, Standard Deviations, Cronbach's Alpha Coefficients, and Correlations With AIDS-Risk for each of the Seven AIDS Attitudes Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std Dev</th>
<th>Alpha</th>
<th>R HIV Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>SELEFF</td>
<td>2.5063</td>
<td>2.7199</td>
<td>.86</td>
<td>.2247**</td>
</tr>
<tr>
<td>SOCNORMS</td>
<td>3.9177</td>
<td>2.3755</td>
<td>.72</td>
<td>.1630*</td>
</tr>
<tr>
<td>SELFLABL</td>
<td>8.0316</td>
<td>3.3736</td>
<td>.81</td>
<td>-.5126**</td>
</tr>
<tr>
<td>SEXEFF</td>
<td>2.8797</td>
<td>1.6253</td>
<td>.64</td>
<td>-.1720*</td>
</tr>
<tr>
<td>INTERPER</td>
<td>3.1582</td>
<td>2.2447</td>
<td>.71</td>
<td>.0036</td>
</tr>
<tr>
<td>ENJOYMNT</td>
<td>6.7468</td>
<td>2.6420</td>
<td>.67</td>
<td>.3857**</td>
</tr>
<tr>
<td>PERRISK</td>
<td>2.6519</td>
<td>2.5562</td>
<td>.78</td>
<td>.0786</td>
</tr>
</tbody>
</table>

Notes: * - Signif. LE .05  ** - Signif. LE .01  (2-tailed)
N = 158.

Factor Analyzed AIDS Attitude Scale and Predicting AIDS-Risk

Each of the seven AIDS attitude factors were then entered as the independent variables in a stepwise multiple regression equation predicting AIDS-risk behavior. The results of this analysis are presented in Table 5. Three of the seven factors (self-labeling, enjoyment, and sex-efficacy) achieved probability values sufficient for inclusion in the resulting regression equation. The three factors together accounted for approximately 36% of the variance in risk behavior ($F[3,155] = 29.42, p<.0005$). The remaining four factors combined account for less than 2.5% of the variance. The items in the self-labeling, enjoyment, and safe-sex efficacy subscales were retained in the AIDS attitude measure, while the remaining four factors were excluded from further analysis.
### Table 5
Stepwise Multiple Regression Analysis on AIDS-Risk Measure using AIDS Attitudes Factors

<table>
<thead>
<tr>
<th>Step</th>
<th>MultR</th>
<th>Rsq</th>
<th>AdjRsq</th>
<th>F(Eqn)</th>
<th>SigF</th>
<th>RsqCh</th>
<th>FCh</th>
<th>SigCh</th>
<th>Variable</th>
<th>BetaIn</th>
<th>Cornel Correl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.5200</td>
<td>.2704</td>
<td>.2657</td>
<td>57.812</td>
<td>.000</td>
<td>57.812</td>
<td>.000</td>
<td>In: SELFLABL</td>
<td>-.5200</td>
<td>-.5200</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>.5764</td>
<td>.3323</td>
<td>.3237</td>
<td>38.565</td>
<td>.000</td>
<td>0.0619</td>
<td>14.355</td>
<td>.000</td>
<td>In: ENJOYMNT</td>
<td>.2535</td>
<td>.3440</td>
</tr>
<tr>
<td>3</td>
<td>.6036</td>
<td>.3643</td>
<td>.3519</td>
<td>29.417</td>
<td>.000</td>
<td>0.0320</td>
<td>7.757</td>
<td>.006</td>
<td>In: SEXEFF</td>
<td>-.1815</td>
<td>-.1610</td>
</tr>
<tr>
<td>4</td>
<td>.6128</td>
<td>.3755</td>
<td>.3643</td>
<td>23.002</td>
<td>.000</td>
<td>0.0112</td>
<td>2.754</td>
<td>.099</td>
<td>In: SELFEFF</td>
<td>-.1815</td>
<td>-.1610</td>
</tr>
<tr>
<td>5</td>
<td>.6229</td>
<td>.3880</td>
<td>.3679</td>
<td>19.276</td>
<td>.000</td>
<td>0.0125</td>
<td>3.106</td>
<td>.080</td>
<td>In: INTERPER</td>
<td>-.1232</td>
<td>.0214</td>
</tr>
<tr>
<td>6</td>
<td>.6231</td>
<td>.3883</td>
<td>.3639</td>
<td>15.973</td>
<td>.000</td>
<td>0.0002</td>
<td>0.548</td>
<td>.117</td>
<td>In: PERRISK</td>
<td>.0157</td>
<td>.0772</td>
</tr>
<tr>
<td>7</td>
<td>.6231</td>
<td>.3883</td>
<td>.3597</td>
<td>13.602</td>
<td>.000</td>
<td>0.0000</td>
<td>0.092</td>
<td>.923</td>
<td>In: SOC NORMS</td>
<td>-.0068</td>
<td>.1727</td>
</tr>
</tbody>
</table>

**Notes:**
- N = 158; df = 150; Steps 1-3 used SPSSX default p values for entry (.10); steps 4-7 continued the analysis beyond the entry criterion utilizing "forced entry" to expose possible additive effects. MultR=Multiple R, Rsq=R², AdjRsq=Adjusted R Squared, F(Eqn)=F, SigF=Probability of F, RsqCh=R² change, FCh=F of the change, SigCh=Probability of R² change. SELFLABL=Self-Labeling, SEXEFF=Safe Sex Efficacy, PERRISK=Perceived Risk, INTERPER=Interpersonal Barriers, SOC NORMS=Perceived Social Norms. SELF EFF=Self Efficacy.

Contrary to initial predictions, two of the three scales significantly related to AIDS-risk loaded in the opposite direction from predicted results. The analysis indicates that both self-labeling and belief in safe-sex efficacy scores were negatively correlated with AIDS-risk. Although both self-labeling and safe-sex efficacy were hypothesized to be negatively correlated with AIDS-risk, the coding of the original AIDS attitude scale reflected this hypothesis. Thus, a belief that one's behavior placed the individual at risk for HIV infection and the belief that safe sex is effective in preventing the spread of HIV were hypothesized to be related to lower risk scores and thus, were assigned lower scores on the AIDS attitude measure. However, the results indicate that these beliefs were associated with high risk behavior. In the case of self-labeling, subjects who reported greater levels of AIDS-risk behavior were more likely to report that their behavior
placed them at greater risk of HIV infection. Furthermore, the lower a subject’s score regarding his or her beliefs in safe-sex efficacy (i.e., the more the subject believed that safe sex could be employed to prevent HIV), the more likely he or she was to engage in higher risk behaviors. Consequently, the coding for each of the items in these subscales was reversed in the revised analysis.

**Value-Access Disjunction**

The value-access disjunction measure was also factor analyzed using a principle components analysis. The items retained were determined in the same manner as for the AIDS attitude measure. The varimax rotation on this analysis produced an eight factor solution that accounted for 65.5% of the variance in the measure. Similar to the AIDS attitude measure, these eight factors were entered as the independent variables in a stepwise multiple regression equation with AIDS-risk behavior as the dependent variable. None of the eight factors entered the regression equation and the value-access measure was dropped from further analyses.

**Revised Predictors of AIDS-Risk Behavior**

The AIDS attitude scale including the self-labeling, enjoyment, and safe-sex efficacy subscales was reentered as an independent variable, along with the problem behavior measure to predict AIDS-risk. In addition, HIV transmission and prevention knowledge, age, gender, and the social
desirability score were introduced as potentially influential independent variables. The results of this regression analysis are presented in Table 6.

Table 6
Revised Stepwise Multiple Regression Analysis on the AIDS-Risk Measure

<table>
<thead>
<tr>
<th>Step</th>
<th>MultR</th>
<th>Rsq AdjRsq</th>
<th>F(Eqn)</th>
<th>SigF</th>
<th>RsqCh</th>
<th>FCh</th>
<th>SigCh</th>
<th>Variable</th>
<th>BetaIn</th>
<th>Correl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.5987</td>
<td>.3584 .3543</td>
<td>87.140</td>
<td>.000</td>
<td>.3584</td>
<td>87.140</td>
<td>.000</td>
<td>In: AIDSATT</td>
<td>.5987</td>
<td>.5987</td>
</tr>
<tr>
<td>2</td>
<td>.6881</td>
<td>.4735 .4667</td>
<td>69.710</td>
<td>.000</td>
<td>.1151</td>
<td>33.901</td>
<td>.000</td>
<td>In: PROBBEH</td>
<td>.3748</td>
<td>.5615</td>
</tr>
<tr>
<td>3</td>
<td>.7014</td>
<td>.4920 .4821</td>
<td>49.716</td>
<td>.000</td>
<td>.0185</td>
<td>5.595</td>
<td>.019</td>
<td>In: AGE</td>
<td>.1363</td>
<td>.1928</td>
</tr>
</tbody>
</table>

Notes: N = 158; df = 155; MultR=Multiple R, Rsq=R², AdjRsq=Adjusted R Squared. F(Eqn)=F, SigF=Probability of F, RsqCh=R² change, FCh=F of the change, SigCh=Probability of R² change. PROBBEH=Problem Behavior, AIDSATT=AIDS Attitudes.

In the exploratory multiple regression analysis described in Table 6 above, the AIDS attitude questionnaire entered the equation first and accounted for nearly 36% of the variance associated with HIV risk (F[1,157] = 87.14, p<.0005). Problem behavior also entered the equation and accounted for an additional 11% of the variance (F[2,156] = 69.71, p<0005). Finally, the age of the subject entered the equation predicting almost 2% of the variance (F[3,155] = 49.71, p<0005). Thus, the combination of the AIDS attitude measure, problem behavior, and age accounted for approximately 49% of the variance associated with AIDS-risk behavior is Sample 1. HIV transmission and prevention knowledge, social desirability, and gender did not enter as significant variables in this regression analysis.

To provide a more stringent exploration of the possible
effects of social desirability on the self-reporting of risk behaviors, a hybrid hierarchical-stepwise multiple regression analysis was performed (see Table 7). Social desirability was entered into the model first with the remaining independent variables entered afterwards in a stepwise fashion. After the first step of the analysis, social desirability accounted for over 4% of the variance in HIV risk behavior. However, it did not achieve a probability value ($p<.05$) sufficient to remain in the equation after the variance associated with the AIDS attitude scale was introduced. This finding provides evidence that although social desirability is correlated with the reporting of risk behaviors, it does not appear to override other aspects of self-report.

Table 7

<table>
<thead>
<tr>
<th>Step</th>
<th>MultR</th>
<th>Rsq</th>
<th>AdjRsq</th>
<th>F(Eqn)</th>
<th>SigF</th>
<th>RsqCh</th>
<th>FCh</th>
<th>SigCh</th>
<th>Variable</th>
<th>BetaIn</th>
<th>Correl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.2056</td>
<td>.0423</td>
<td>.361</td>
<td>6.886</td>
<td>.010</td>
<td>.0423</td>
<td>6.886</td>
<td>.010</td>
<td>SOCDESIR</td>
<td>-.2056</td>
<td>-.2056</td>
</tr>
<tr>
<td>2</td>
<td>.6002</td>
<td>.3602</td>
<td>.3520</td>
<td>43.637</td>
<td>.000</td>
<td>.3180</td>
<td>77.032</td>
<td>.000</td>
<td>AIDSATT</td>
<td>.5864</td>
<td>.5987</td>
</tr>
<tr>
<td>3</td>
<td>.5987</td>
<td>.3584</td>
<td>.3543</td>
<td>87.140</td>
<td>.000</td>
<td>.0018</td>
<td>.445</td>
<td>.506</td>
<td>Out: SOCDESIR</td>
<td>-.2056</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>.6881</td>
<td>.4735</td>
<td>.4667</td>
<td>69.710</td>
<td>.000</td>
<td>.1151</td>
<td>33.901</td>
<td>.000</td>
<td>PROBBEH</td>
<td>.3748</td>
<td>.5615</td>
</tr>
<tr>
<td>5</td>
<td>.7014</td>
<td>.4920</td>
<td>.4821</td>
<td>49.716</td>
<td>.000</td>
<td>.0185</td>
<td>5.595</td>
<td>.019</td>
<td>AGE</td>
<td>.1363</td>
<td>.1928</td>
</tr>
</tbody>
</table>

Notes: N = 158; df = 154; Step 1 entered SOCDESIR hierarchically; steps 2-5 evaluated the remaining variables in a stepwise analysis. MultR=Multiple R, Rsq=R$^2$, AdjRsq=Adjusted R Squared. F(Eqn)=F, SigF=Probability of F, RsqCh=R$^2$ change, FCh=F of the change, SigCh=Probability of R$^2$ change, SOCDESIR=Social Desirability, AIDSATT=AIDS Attitudes, PROBBEH=Problem Behavior.

Partial correlations and their probability values between independent and dependent variables controlling for...
social desirability are presented in Table 8. For descriptive purposes, Appendix L presents zero order correlations between social desirability and all study independent variables.

Table 8
Partial Correlations and Probability Values Between Major Study Variables Controlling for Social Desirability

<table>
<thead>
<tr>
<th></th>
<th>HIVRISK</th>
<th>AIDSATT</th>
<th>PROBBEH</th>
<th>DISJUNCT</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIVRISK</td>
<td>1.0000</td>
<td>.5492</td>
<td>.4797</td>
<td>-.0271</td>
</tr>
<tr>
<td></td>
<td>P= .000</td>
<td>P= .000</td>
<td>P= .000</td>
<td>P= .368</td>
</tr>
<tr>
<td>AIDSKNOW</td>
<td>.0672</td>
<td>1.463</td>
<td>-.0201</td>
<td>-.0420</td>
</tr>
<tr>
<td></td>
<td>P= .202</td>
<td>P= .032</td>
<td>P= .401</td>
<td>P= .301</td>
</tr>
<tr>
<td>AIDSATT</td>
<td>.5492</td>
<td>1.0000</td>
<td>.3792</td>
<td>-.0972</td>
</tr>
<tr>
<td></td>
<td>P= .000</td>
<td>P= .000</td>
<td>P= .000</td>
<td>P= .113</td>
</tr>
<tr>
<td>PROBBEH</td>
<td>.4797</td>
<td>.3792</td>
<td>1.0000</td>
<td>-.0872</td>
</tr>
<tr>
<td></td>
<td>P= .000</td>
<td>P= .000</td>
<td>P= .000</td>
<td>P= .139</td>
</tr>
<tr>
<td>DISJUNCT</td>
<td>-.0271</td>
<td>-.0972</td>
<td>.0872</td>
<td>1.0000</td>
</tr>
<tr>
<td></td>
<td>P= .368</td>
<td>P= .113</td>
<td>P= .139</td>
<td>P= .000</td>
</tr>
<tr>
<td>AGE</td>
<td>1.378</td>
<td>.0723</td>
<td>.0544</td>
<td>-.0359</td>
</tr>
<tr>
<td></td>
<td>P= .043</td>
<td>P= .184</td>
<td>P= .249</td>
<td>P= .328</td>
</tr>
<tr>
<td>GENDER</td>
<td>-.0724</td>
<td>-.1463</td>
<td>-.2781</td>
<td>.2332</td>
</tr>
<tr>
<td></td>
<td>P= .184</td>
<td>P= .034</td>
<td>P= .000</td>
<td>P= .002</td>
</tr>
</tbody>
</table>

Notes: N=158; df=155 ("." is printed if a coefficient cannot be computed)

Replication and Cross-Validation

The revised stepwise multiple regression analysis was replicated with Sample B; not to do so would leave open the likelihood that the regression equation derived from Sample A subject responses was simply a description of random variability in that samples responses. Hence, two types of analyses were performed: a replication of the stepwise procedure from Sample A; and a cross-validation of the predictions made from the Sample A regression equation by
correlating the predicted values for Sample B subjects with the observed scores on the AIDS-risk questionnaire.

**Replication:** Using a randomly selected subset of 82 subjects withheld from the initial analysis, the AIDS attitude measure, problem behavior, and age as predictors of AIDS-risk behavior, the stepwise multiple regression analysis was replicated with Sample B. In this analysis, reported AIDS-risk behavior was again entered as the criterion variable with AIDS attitudes, problem behavior, age, AIDS transmission and prevention knowledge, gender, and social desirability entered (in that order) as predictor variables. The results of this analysis are presented in Table 9.

<table>
<thead>
<tr>
<th>Step</th>
<th>MULT</th>
<th>Rsq</th>
<th>AdjRsq</th>
<th>F(Eqn)</th>
<th>SigF</th>
<th>RsqCh</th>
<th>FCh</th>
<th>SigCh</th>
<th>Variable</th>
<th>BetaIn</th>
<th>Correl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.5257</td>
<td>2764</td>
<td>2673</td>
<td>30.553</td>
<td>000</td>
<td>.2764</td>
<td>30.553</td>
<td>000</td>
<td>In: PROBBEH</td>
<td>.5257</td>
<td>5257</td>
</tr>
<tr>
<td>2</td>
<td>.5817</td>
<td>3383</td>
<td>3216</td>
<td>20.199</td>
<td>000</td>
<td>.0620</td>
<td>7.400</td>
<td>008</td>
<td>In: AIDSATT</td>
<td>.2936</td>
<td>4897</td>
</tr>
<tr>
<td>3</td>
<td>.6202</td>
<td>3846</td>
<td>3609</td>
<td>16.249</td>
<td>000</td>
<td>.0463</td>
<td>5.862</td>
<td>018</td>
<td>In: AGE</td>
<td>.2192</td>
<td>3022</td>
</tr>
</tbody>
</table>

**Notes:** N = 82; df = 79. MULT=Multiple R, Rsq=R², AdjRsq=Adjusted R Squared, F(Eqn)=F, SigF=Probability of F, RsqCh=R² change, FCh=F of the change, SigCh=Probability of R² change. PROBBEH=Problem Behavior, AIDSATT=AIDS Attitudes.

As in the main analyses, problem behavior, AIDS attitudes, and age entered the stepwise multiple regression equation, while the other variables did not meet the probability requirement for inclusion. However, the order
of entry for AIDS attitudes and problem behavior was reversed in the validity sample. In this sample, problem behavior entered the equation first and accounted for over 27% of the variance in risk behavior ($F[1,81] = 30.553, p<.0005$). AIDS attitudes ($F[2,80]=7.400, p=.008$) and age ($F[3,79]=5.862, p=.018$) accounted for an additional 6% and 4% of the variance, respectively. The three variables together accounted for approximately 38% of the variance in AIDS-risk behavior.

Contrary to previous studies (Ekstrand & Coates, 1990; Hayes et al., 1990), age was found to be positively correlated with HIV risk in this study. The findings in the current may be an artifact of analyzing both sexually active subjects, and sexually inexperienced individuals together. Both Ekstrand & Coates (1990) and Hayes et al. (1990) examined sexually active subjects and found higher rates of anal intercourse in younger individuals. When the 200 sexually active subjects in this study (both samples combined) were analyzed, the correlation between age and AIDS-risk dropped to .10 and was non-significant. Thus, it appears that the relationship between age and AIDS-risk found in this study is effected by the inclusion of non-sexually active subjects in the analyses.

**Cross-Validation**

The same 82 randomly selected cases from Sample B were also used to validate the regression model produced from the
analyses on Sample A. A predicted AIDS-risk value for each Sample B subject was calculated by incorporating the intercept value (constant) and the Beta coefficients for each of the predictor variables produced in the analyses on Sample A. The equation used to compute predicted AIDS-risk behavior in Sample A was:

\[ \text{Predicted Risk} = -3.6341 + 0.5401(\text{AIDSATT}) + 0.2605(\text{PROBBEH}) + 0.1287(\text{AGE}) \]

The observed AIDS-risk behavior values in Sample A and the predicted (calculated) risk behavior values in Sample B were then correlated with these predicted values, achieving a Pearson correlation coefficient of +.61 (N=82; \( p<.0005 \)). Thus, the predicted AIDS-risk values accounted for approximately 36% of the variance in AIDS-risk behavior in Sample B. This is strong support, using a conservative estimation method, for the robustness of the relationship between AIDS-risk behavior, AIDS related attitudes, and problem behavior.

**Social Desirability**

The social desirability measure did not enter as a significant component in any of the previous multiple regression analyses. For descriptive purposes, Appendix M presents the Pearson correlation coefficients and
significance values between each of the AIDS-risk items and the Jackson Social Desirability Scale (JSD). The correlation between AIDS-risk behavior and the JSD was -.18. Although five of the items are statistically correlated with social desirability, only the reported frequency of drug use in conjunction with sexual activity, the frequency of alcohol use and sex, and the time between meeting a partner and first sexual contact with them were correlated above the +/- .2 level. Sexual contacts involving drug use had the highest correlation with AIDS-risk behavior (-.34), while alcohol use in conjunction with sexual activity showed the next highest (-.26) relationship to social desirability.

Overall, reported problem behavior was also related to social desirability (-.33) (see Appendix J). Similar to the AIDS-risk questionnaire, items relating to substance use had some of the highest correlations with the social desirability measure (marijuana, hashish, -.29; other drugs, -.26), while "taking things that didn't belong to you" was also correlated (-.28). Overall, it appears that college students, responding in a socially desirable manner, significantly underreport their involvement in problem behaviors.

The AIDS attitude measure was correlated with social desirability at the -.21 level (See Appendix N). The self-labeling items were most associated with socially desirable responding (AA4, .31; AA10, .32; AA16, .28), while the
interpersonal barriers, self-efficacy, and perceived social norms subscales each had one item correlated above -.20. All other correlation coefficients were below +/- .20.

**Exploratory Analyses**

Several exploratory analyses were conducted to examine possible relationships between demographic variables and the experimental variables (See Appendices O and P). These analyses are likely to capitalize on random error and are presented for descriptive purposes only. In these analyses, the data from both samples was combined and analyzed together. In addition to previously identified relationships, Appendix O also shows a small, but statistically significant positive correlation between age and AIDS-related attitudes ($r = .19$). As the subject age increased, the number of expressed attitudes that potentially put them at higher risk for HIV infection also increased. AIDS attitudes and problem behavior were also correlated ($r = .46$). Those individuals who expressed a greater frequency of risk related attitudes also reported engaging in more problem behaviors.

With regard to gender differences, there were statistically significant tendencies for men to report more HIV risk behaviors ($r = -.13$) and for women to report greater value expectancy disjunctions ($r = +.13$) and respond in a socially desirable fashion ($r = +.15$). Of more clinical significance perhaps, men were more likely to report more
risky AIDS-related attitudes ($r = +.21$) and engage in more problem behaviors ($r = +.32$). The mean frequencies of reported risk variables are compared by gender in Appendix P. In addition, Appendix Q presents the mean comparisons by gender for each of the sexual behaviors reported in the HIVRISK measure. Overall, male subjects reported a greater prevalence of AIDS-risk behavior, problem behavior, and risk-related AIDS attitudes, as well as more sexual contacts under the influence of alcohol and a shorter period of time between first meeting a potential sexual partner and first sexual contact. Female subjects scored higher on the social desirability scale and expressed greater value-access disjunctions.

Appendix P also presents the correlations between subscale scores on the AIDS attitude measure and other significant independent variables in this study. With respect to age, the enjoyment value of higher risk sexual behaviors tended to increase with age ($r = +.15$), while the perceived interpersonal barriers to safe sex decreased with age ($r = -.15$). Higher self-efficacy ($r = -.32$), greater enjoyment of risk behavior ($r = -.34$), and a greater perceived risk of risky sexual behaviors ($r = -.30$) were all correlated with male respondents. Interpersonal barriers to safe sex was slightly associated with women responders ($r = -.17$). In addition to the subscales retained in the revised AIDS attitudes measure, self-efficacy ($r = -.25$) and
perceived social norms \( r = -0.16 \) were also statistically correlated with AIDS-risk behavior. Finally, of the AIDS attitude subscales, only safe-sex efficacy and the perceived risk of sexual behaviors were not correlated with problem behavior (See Appendix P).

**Discussion**

**Sexual Behavior**

The university students in this study reported significant amounts of AIDS risk behavior. Nearly 84% of the students in this sample reported having sexual intercourse with at least one person in their lifetime and 37% report 6 or more lifetime partners. Of the current sexually active students, only 45% of them state that they use condoms more than "sometimes"; and only 28% of the individuals report that they use a condom "everytime" they have sexual intercourse. Furthermore, 31% of sexually active subjects reported that they have had sexual intercourse with a person within a day of meeting them. These figures are consistent with those found in other studies (Fisher & Misovich, 1990; DiClemente et al., 1990; DeBuono, Zinner, Daamen & McCormack, 1990) and suggest that the university students in this sample are not different from subjects in previous studies with respect to the self-reported sexual behavior assessed in this study. The figures also support the notion that the college years may
be a time when people are particularly likely to engage in high levels of sexual risk-taking and sexual experimentation. The results suggest that educational, motivational, and behavioral skills training programs aimed at reducing HIV-risk behavior are of critical importance and may be potentially influential with this population.

HIV Transmission and Prevention Knowledge

Also consistent with previous work (Sheehan et al., 1990; Loos & Bowd, 1989; DiClemente et al., 1990), the students in this study demonstrated high levels of HIV transmission and prevention knowledge. Generally speaking, educational programs have effectively spread information regarding transmission and prevention of HIV. It would appear then, that the first of the AIDS prevention goals (AIDS education) is being met for the vast majority of college students. Certainly, students in this sample still express informational "grey areas" such as the increased risk of HIV infection during a woman's menstrual period. However, most of the uncertainty reported seemed to involve information that is still a topic of considerable debate, or that has only recently been reported in the medical literature. Certainly, prevention efforts should continue to disseminate basic prevention information and updated medical findings as they become available. However, most current studies are reporting relatively high rates of HIV transmission and prevention knowledge in their subjects.
As Fisher & Fisher (1992) suggest, perhaps more of the current prevention efforts would be effectively focused on addressing motivations for AIDS risk behavior and teaching risk reduction behavioral skills at a time when most individuals are formulating and developing ideas about what it means to be sexually active. That is, age appropriate prevention efforts are needed to provide AIDS information and behavioral skills training from kindergarten through secondary school (Citizens commission of AIDS for New York City and Northern New Jersey, 1991).

**Predicting HIV Risk**

This study suggests that attitudes about AIDS-related sexual behavior and the reported occurrence of problem behaviors are both related to self-reported AIDS-risk behavior in university students. Age is also related to risk behavior, but this factor is not significant once those individuals who are not sexually active are removed from the analysis. Likewise, age is logically confounded with opportunity for sexual experience.

Although initial analyses suggested that the AIDS-related attitudes measured in this study were not related to sexual risk taking, further analysis of the AIDS attitude measure found that initial findings reflected inaccurate assumptions about the relationship between the AIDS attitude subscales and reported AIDS-risk behavior.

The self-report of other problem behaviors was
consistently associated with sexual risk taking. The fact that this relationship between AIDS-risk behavior, AIDS-related attitudes, and problem behavior was found in initial and revised analyses, as well as a second replication sample, suggests that these linkages are robust. Finally, the hypothesized relationship between the measure used for assessing value-access disjunction and AIDS-risk behavior was not supported by the evidence in this study.

The AIDS Risk Reduction Model

The AIDS Risk Reduction Model (ARRM) represents an important attempt to highlight the process of behavior change related to AIDS-risk behaviors. This study provides empirical evidence that some of the attitudes presented in ARRM are related to high risk sexual behavior. Specifically, these findings suggest that university students' perceived risk of HIV infection (self-labeling), enjoyment value associated with sexual behaviors, and beliefs in the efficacy of safe sex in preventing HIV infection are important predictors of AIDS-risk.

Contrary to the "perceived invulnerability" literature, this study found evidence that most college age students are able to estimate the risk, with respect to HIV infection, of the behaviors in which they engage. Rather than engaging in "repression" or "denial" as a means of rationalizing high risk behaviors, the college students in
this sample expressed not only a high degree of knowledge regarding HIV transmission and prevention, but also concerning the ability to label their own behavior as potentially risky. Nevertheless, most students in this sample continue to engage in frequent sexual risk behaviors including unprotected vaginal and oral intercourse. Thus, while college students are able to acknowledge their behavior as potentially risky for HIV infection, the majority of sexually active students continue to practice the behaviors that place them at risk. It would seem that the perceived consequences and rewards of the competing behavioral alternatives (safe sex or not safe sex) still favor the more risky sexual practices for most college age individuals. Perhaps the risk of HIV infection associated with each of these behaviors is perceived to be less important/significant than the perceived immediate consequences safer practices. While the majority of subjects in this sample recognize the potential hazards involved with their sexual behavior, these hazards presumably do not outweigh the reinforcement value associated with riskier sexual practices and thus, may be viewed as "acceptable risks."

The findings also reinforce a common-sense deduction that the enjoyment value associated with various sexual behaviors is an important component in the maintenance of those behaviors. Again, this relationship exists even
though subjects also expressed high levels of HIV transmission and prevention knowledge. High risk sexual behaviors are perceived to be enjoyable for the majority of the subjects who engage in them. These findings support the movement of prevention efforts towards highlighting the enjoyment value of safer behaviors, both sexual and nonsexual. If safe sex practices are to be viewed as realistic alternatives to higher risk activities, they need to be presented as specific, acceptable, and enjoyable substitutes to the original riskier behaviors. Such presentations will ideally include explicit teaching of condom use and other appropriate safe sex practices that go beyond didactic or observational approaches, such as "banana and condom" displays, which incidental observation suggests is currently a modal form of instruction.

The third attitude related to higher reported AIDS-risk behavior was the belief that safe sex reduces one's risk of HIV infection. On the surface, this finding seems somewhat contradictory. Understanding that safe sex behaviors reduce the risk of HIV infection should support and reinforce the change to more preventative practices. However, individuals who understand the pathways of HIV transmission and believe in the efficacy of preventive behaviors engage in more AIDS-risk behaviors. One possible speculation is that prevention knowledge leads to a false sense of security that enables the individual to feel...
protected from the disease. In this case, a little bit of knowledge may be worse than none at all. For example, if an individual believes he or she understands how the virus is transmitted, he or she may also believe that he or she can identify the "type of person" who would carry the virus and consequently, attribute his or her own sexual partners as low risk individuals. Alternatively, individuals who engage in more frequent sexual behavior are likely to be more knowledgeable about sex and sex related issues. Thus, they may be more knowledgeable regarding the efficacy of safe sex practices. Regardless, this finding suggests that accurate information about safe-sex efficacy alone is not sufficient to promote lower risk sexual behavior and may even be associated with riskier sexual practices in college age students.

The other five variables represented in Hays et al's. (1990) questionnaire did not serve as useful predictors of AIDS-risk behavior in this sample. Attitudes related to self-efficacy, interpersonal barriers, perceived risk, perceived social norms, and sexual communications skills were not significantly correlated with AIDS-risk behavior in this study. It is conceivable that these variables may have more influence in individuals at the ends of the risk-taking spectrum. For example, McKusick et al's. (1989) relationship between low self-efficacy with high risk behavior was reported in gay males reporting high levels of
anal intercourse. Perhaps self-efficacy, and the other AIDS attitude variables, play more of a role in individuals at the high and low ends of the risk-taking spectrum than they do across the entire range of reported sexual risk behavior.

**Problem Behavior**

The study found strong support for a relationship between reported AIDS-risk behavior in university students and a constellation of other problem behaviors. From driving under the influence of alcohol, to using alcohol and other drugs, to skipping university classes, a wide variety of problem behaviors were found to be positively correlated with, and predictive of AIDS-risk behavior.

To date, the gay community and IV drug users have been singled out in prevention efforts based on a direct link between their behavior and transmission of HIV. Although one cannot conclude that there is a direct link between the kind of problem behavior represented in this study (e.g. seatbelt usage) and the transmission of HIV, one might suggest that individuals who do not frequently wear seatbelts are more likely to take other risks in their lives. These risks might include a higher prevalence of AIDS-risk behaviors and consequently, an increased probability of HIV infection. These so-called "problem behaviors" might be conceptualized as indirect or "second-order" risk factors. Thus, while driving without a
seatbelt does not directly lead to the transfer of bodily fluids and potential HIV infection, it may be indicative of college students who are more likely to be engaging in higher levels of AIDS-risk behavior.

The practical implications of these findings suggest that prevention efforts might well be focused on settings designed to address and manage these "second-order behaviors." For example, HIV and AIDS prevention efforts might be efficiently distributed and incorporated into the curriculums of drug and alcohol rehabilitation programs, driver training and retraining centers, juvenile and adult correctional programs, and university academic advising/tutoring offices.

A more global and ominous interpretation is that a pervasive pessimistic nihilism (as evidenced by higher suicide and homicide rates among youth) overrides consideration of specific behavioral pathways potentially leading to self-destructive behaviors. This interpretation highlights the importance of the motivational aspects that support AIDS-risk behavior. While knowledge of HIV transmission and prevention information as well as behavioral skills training are importance components, no prevention program is complete unless it addresses the variety of motivations that serve to support and maintain AIDS-risk behavior.
Value-Access Disjunction

Relevant to the above pessimistic interpretation, the study did not find significant evidence that the value-access disjunction construct, as conceptualized in this experiment, was useful in predicting AIDS-risk behavior. However, it is likely that the disjunction measures presented in this study were not representative of important and relevant value concerns for the current sample of subjects. Disjunctions associated with personally selected and endorsed values might be a timely addition to this line of inquiry. Such an approach would likely be a more accurate reflection of individual expectations and needs for satisfaction, or lack thereof and thus, be a better predictor of risk behavior.

Social Desirability

Responses to AIDS-risk behavior, AIDS attitude, and problem behavior questionnaires appear to be influenced by perceived social demands regarding the behaviors. Specifically, all three variables were underreported by individuals responding in a socially desirable manner. However, these effects appear to be rather small and likely influence each of the variables in a similar manner. It is possible the influence of social desirability served to reduce the predictive power of the independent variables by restricting the range of responses to all three variables. With greater response variability, it seems likely that
AIDS attitudes and problem behavior measures would predict more of the variance associated with sexual risk-taking.

Other Considerations

One of the limitations of this study is the correlational nature of the design. This study attempts to establish relationships between AIDS-risk related variables, not causal connections between AIDS-risk behavior and other problem behaviors or AIDS-related attitudes. Consequently, this study is unable to draw directional implications regarding the associated variables. For example, one might hypothesize that problem behavior is a precursor to high risk sexual behavior and thus, be an excellent indicator of at-risk individuals. However, the exploratory nature of this study does not provide any evidence to evaluate this rival hypothesis. Future research in this area might utilize a structural equations model as a means of examining the causal pathways of AIDS-risk behavior (Fisher & Fisher, 1992).

Another important consideration regarding generalizations that follow from the present findings relates to the potentially heterogeneous nature of the dependent measure. The AIDS-risk measure developed in this study incorporated the variance associated with a variety of sexual behaviors into a single construct (i.e. AIDS-risk). Perhaps the variability and predictability of discrete aspects of individuals behaviors (e.g. vaginal
intercourse, condom use, number of partners, etc.) would represent a more precisely measurable behavior that would better lend itself to evaluating theory driven material such as the AIDS Risk Reduction Model.

**Conclusions**

This study notes that continuing updates and revisions to AIDS prevention curricula are needed to address emerging needs. AIDS transmission and prevention information, behavioral skills training, and a focus on the motivations which support high risk sexual behavior need to be included in prevention programs from kindergarten through adulthood. Specifically, the enjoyment value associated with AIDS-risk behavior as well as the individual's ability to evaluate their own behavior with respect to AIDS-risk are particularly salient variables. Additionally, prevention efforts may focus on the possible similarities between motivations for AIDS-risk behavior and other problem behaviors.

This study furthers the understanding of the relationship between problem behavior, AIDS related attitudes, and AIDS-risk behavior in college age students; and provides directions for future research and prevention efforts. It provides further evidence that college and university campuses are environments conducive to a variety of risk behaviors and that college students are a population at-risk for HIV infection.
References


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APPENDIX A -- DEMOGRAPHIC INFORMATION

Part 1: Please do not put your name anywhere on this questionnaire. Try to answer all questions to the best of your ability. Please complete all sections of the questionnaire as indicated. Remember that your answers are anonymous, so please be as honest as possible. If you have any questions, please ask.

1. Age: ______________

2. Gender: A. Male B. Female

3. Race: _____________________________________________

4. Religious affiliation: _________________________________

5. Academic Major: ____________________________________

6. Relationship Status: (circle one)
   A. Single B. Married C. Divorced D. Widowed E. Separated

7. If not married, are you currently in relationship with a significant other: Yes / No.
   If yes, is it a monogamous relationship: Yes / No
   If yes, how long: / ___________/ ___________/ ___________
   Weeks Months Years

8. At what age did you first have sexual intercourse.
   A. Have never had sexual intercourse
   B. Age at first intercourse __________

9. Do you define your sexual orientation as primarily:
   A. Heterosexual B. Homosexual C. Bisexual

10. Year in school: (circle one)
    A. First Year
    B. Sophomore
    C. Junior
    D. Senior
    E. Graduate
    F. Graduate-Non-degree

11. Are you currently living in a(n):
    A. House
    B. Apartment
    C. College Dormitory (residence hall)
    D. Fraternity or Sorority House
    E. Other: ____________________________________________
12. If you live in a residence hall, is your floor:
   A. Coeducational
   B. Single sex with \textit{unlimited} visitation
   C. Single sex with \textit{limited} visitation

13. Have you ever personally known anyone who contracted the AIDS virus.
   A. Yes  B. No

   If yes, was this person:
   A. A close relative
   B. A close friend
   C. A friend
   D. A causal acquaintance
   E. Someone you met once or twice.

14. How many hours of television do you watch each \textit{day}.
   A. Less than 1 hour
   B. 1-2 hours
   C. 2-4 hours
   D. 4-6 hours
   E. More than 6 hours every day
APPENDIX B -- HIV-RISK QUESTIONNAIRE

Part 6: In this section, we are interested in how often you engage in various sexual behaviors. Please remember that this questionnaire is anonymous. Do not put your name anywhere on your answer sheet or the questionnaire.

1. How many times have you engaged in vaginal intercourse in the past month.
   A. None
   B. Once
   C. 2-5 times
   D. 6-10 times
   E. 11 or more times

2. How many times have you engaged in anal intercourse in the past month.
   A. None
   B. Once
   C. 2-3 times
   D. 4-6 times
   E. 7 or more times

3. How many times have you given oral sex in the past month.
   A. None
   B. Once
   C. 2-3 times
   D. 4-6 times
   E. 7 or more times

4. How many times have you received oral sex in the past month.
   A. None
   B. Once
   C. 2-3 times
   D. 4-6 times
   E. 7 or more times

5. With how many different partners have you had sexual intercourse in the past year.
   A. None
   B. 1 only
   C. 2-3 partners
   D. 4-6 partners
   E. 7 or more partners

6. With how many different partners have you had sexual intercourse in your lifetime.
   A. None
   B. 1 only
   C. 2-5 partners
   D. 6-15 partners
   E. 16 or more partners
7. How often have you (or your partner) used condoms when having sex in the last month.  
   A. No regular partner or did not have penetrative sex  
   B. Every time  
   C. Often  
   D. Sometimes  
   E. Rarely or never  

8. What is the shortest time period you have known a potential sexual partner before becoming sexually active with them.  
   A. Have not been sexually active  
   B. More than 1 month  
   C. 1 week to 1 month  
   D. 2 days to 1 week  
   E. 1 day  

9. Have you ever had sex with someone you recently met primarily because you were drunk.  
   A. Never  
   B. 1 time  
   C. 2-5 times  
   D. 6-10  
   E. 11 or more times  

10. How often are you under the influence of drugs or alcohol when performing sexual behaviors.  
    A. Never  
    B. Rarely  
    C. Sometimes  
    D. Often  
    E. Almost Always
APPENDIX C -- AIDS ATTITUDE QUESTIONNAIRE

Part 5: In this section, we are interested in how you think about various sexual behaviors and safe sex practices. For each of the questions in this section, please circle the response from Strongly Agree to Strongly Disagree that best describes your reaction to the statement.

1. I can get a person I'm having sex with to use condoms if I want them to.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

2. Most of my friends think you should always use a condom when having intercourse.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

3. It is easy for me to tell a sex partner I won't have intercourse without a condom.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

4. There is little chance that I could catch or spread AIDS from what I do sexually.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

5. People who follow 'safe sex guidelines' can usually avoid getting the AIDS virus.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly
6. If I suggested using condoms to a person I was having sex with, he or she might be offended.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

7. If someone I'm having sex with doesn't want to follow safe sex guidelines, there is little I can do about it.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

8. Most of my friends think that condoms are too much of a hassle to use.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

9. I find it difficult telling a sex partner not to do something I think is unsafe.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

10. My sexual behavior is risky for catching AIDS.
    A. Agree Strongly
    B. Agree
    C. Neither Agree Nor Disagree
    D. Disagree
    E. Disagree Strongly

11. People who always use condoms will probably not get the AIDS virus.
    A. Agree Strongly
    B. Agree
    C. Neither Agree Nor Disagree
    D. Disagree
    E. Disagree Strongly
12. If I insisted upon a condom, my sex partner might think that I am infected with the AIDS virus.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

13. If someone I’m having sex with does not want to use a condom, there is little I can do about it.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

14. Most of my friends think you should avoid intercourse without condoms.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

15. It’s easy for me to tell a sex partner what I do or don’t like to do during sex.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

16. I don’t do things that could cause me to catch AIDS.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

17. If I requested a partner I was having sex with that we use a condom, he or she might think that I suspect them of being infected with the AIDS virus.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly
18. If someone I'm having sex with starts to do something unsafe, there is little I can do about it.
   A. Agree Strongly
   B. Agree
   C. Neither Agree Nor Disagree
   D. Disagree
   E. Disagree Strongly

Instructions: For each sexual activity, circle the number that best shows how much you enjoy or think you might enjoy doing that activity with a partner. Please circle the number for each sexual activity whether you have done it or not.

How much do you enjoy or think you would you enjoy:

19. Vaginal intercourse where the male does not wear a condom.
   A. Enjoy Very Much
   B. Enjoy
   C. Neither Enjoy or Dislike
   D. Dislike
   E. Dislike Very Much

20. Unprotected (without a condom) oral intercourse.
   A. Enjoy Very Much
   B. Enjoy
   C. Neither Enjoy or Dislike
   D. Dislike
   E. Dislike Very Much

   A. Enjoy Very Much
   B. Enjoy
   C. Neither Enjoy or Dislike
   D. Dislike
   E. Dislike Very Much

Instructions: How risky (for you to get AIDS) do you think the various sexual activities listed below are, if you were to do them with a partner whose antibody status (that is, whether the partner is HIV-positive) is unknown to you.

22. Vaginal intercourse where the male does not wear a condom.
   A. Not At All Risky
   B. Slightly Risky
   C. Moderately Risky
   D. Very Risky
   E. Extremely Risky
23. Unprotected (without using a condom) oral sex.
   A. Not At All Risky
   B. Slightly Risky
   C. Moderately Risky
   D. Very Risky
   E. Extremely Risky

24. Unprotected anal intercourse.
   A. Not At All Risky
   B. Slightly Risky
   C. Moderately Risky
   D. Very Risky
   E. Extremely Risky
APPENDIX D -- PROBLEM BEHAVIOR QUESTIONNAIRE

Part 4: In this section, we are interested now on how often you do different things. Again, your answers are anonymous and no one else will ever see your answers.

How often have you:

1. Smoked cigarettes prior to age 18.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

2. Taken things that didn’t belong to you.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

3. Faked an excuse for missing classes or school (include high school).
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

4. Gotten into trouble with the law.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

5. Driven when you’ve had a good bit to drink.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

6. Copied other peoples’ assignments for class (plagiarized homework).
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

7. Cheated on tests.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often
8. Done things on the spur of the moment which you later regretted or which could have been dangerous to you or other people.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

9. Gotten into physical fights with other people.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

10. Gone to drinking (alcohol) parties when you were underage.
    A. Never
    B. Once or Twice
    C. Several Times
    D. Very Often

11. Lied to an instructor about illness, travel, etc. to avoid a grading problem.
    A. Never
    B. Once or Twice
    C. Several Times
    D. Very Often

12. Driven a car without a valid driver’s license.
    A. Never
    B. Once or Twice
    C. Several Times
    D. Very Often

13. Driven a car without wearing a seatbeat.
    A. Never
    B. Once or Twice
    C. Several Times
    D. Very Often

14. Chosen not to attend a class meeting for a course which you were enrolled in (don’t count times when this was permitted by the instructor)
    A. Never
    B. Once or Twice
    C. Several Times
    D. Very Often
15. Not studied for a test because you chose instead to involve yourself in some recreational activity.
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often

16. Smoked marijuana, hashish, or other cannabis?
   A. Never
   B. Once or Twice
   C. Several times
   D. Very Often

17. Smoked crack cocaine or other smokable drug please list:
   A. Never
   B. Once or Twice
   C. Several Times
   D. Very Often
APPENDIX E -- AIDS KNOWLEDGE QUESTIONNAIRE

Part 3: In this section, we are going to ask you some questions regarding AIDS. If you agree with the statement in the question, circle the response marked "True". If you disagree with the statement in the question, circle the response marked "false". We hope you will answer these the questions seriously and carefully, even if some seem funny to you.

1. AIDS is a medical problem in which your body cannot fight off disease.
   A. True
   B. False

2. AIDS is caused by a virus.
   A. True
   B. False

3. Stress can give you AIDS.
   A. True
   B. False

4. If you touch someone with AIDS you can get AIDS.
   A. True
   B. False

5. All gay men have AIDS.
   A. True
   B. False

6. What you eat can give you AIDS.
   A. True
   B. False

7. Anybody can get AIDS.
   A. True
   B. False

8. AIDS can be cured.
   A. True
   B. False

9. Women are more likely to get AIDS during their menstrual period.
   A. True
   B. False

10. AIDS is not at all serious, it is like having a cold.
    A. True
    B. False
11. AIDS is caused by the same virus that caused V.D.
   A. True
   B. False

12. Just being around someone can give you the disease.
   A. True
   B. False

13. Having sex with someone who has AIDS is one way of getting the disease.
   A. True
   B. False

14. A pregnant woman who has AIDS, may give the disease to her unborn baby.
   A. True
   B. False

15. Using a condom during sex can lower your chance of getting AIDS.
   A. True
   B. False

16. You can get AIDS by sharing a needle with a drug user who has the disease.
   A. True
   B. False

17. People with AIDS usually have lots of other diseases as a result of AIDS.
   A. True
   B. False

18. We now have new medication which can prevent you from getting AIDS.
   A. True
   B. False

19. There is no cure for AIDS.
   A. True
   B. False

20. I can avoid AIDS by exercising daily.
    A. True
    B. False

21. Receiving a blood transfusion with infected blood can give a person AIDS.
    A. True
    B. False
22. AIDS can be spread by using someone's personal belongings like a comb or a hairbrush.
   A. True
   B. False

23. AIDS can be cured if treated early.
   A. True
   B. False

24. A person who looks good and feels well can still be infected with AIDS.
   A. True
   B. False

25. Even the smallest amount of blood left in a used needle can contain the AIDS virus.
   A. True
   B. False
APPENDIX F -- VALUE-ACCESS DISJUNCTION QUESTIONNAIRE

Part 2: In this section, we want to know how strongly you would like or want certain things to happen. How strongly you would like something can be shown by putting an "X" somewhere along a line that runs from NEITHER LIKE NOR DISLIKE, at one end, to LIKE VERY MUCH, at the other end.

When you like something very much, you can show this by making an "X" toward the end that says LIKE VERY MUCH. If you don't care about something, one way or the other, you can show that by making an "X" toward the other end NEITHER LIKE NOR DISLIKE. If you feel somewhere in between about something, put an "X" somewhere toward the middle of the line. Your "X" can be anywhere along the line, depending on how strongly you would like or want a certain thing to happen.

Remember, in this section we are not asking about what actually does happen to you, or what you expect to happen. We want to know how much you would like these different things to happen. Each question should be answered by itself. Don't worry about how you have answered the others. There are no right or wrong answers.

1. How strongly do I like:
   To be well-liked by most of the people around here.

2. How strongly do I like:
   To be able to get my ideas across in class.

3. How strongly do I like:
   To be asked to take part in many social activities.
4. How strongly do I like:
   To be in the top half of my class at graduation.

5. How strongly do I like:
   To be thought of as a best friend by several persons around here.

6. How strongly do I like:
   To get on the Dean’s (honor roll) list this year.

7. How strongly do I like:
   To have groups to show real pleasure when I join them.

8. How strongly do I like:
   To be able to answer other students’ questions about school work.

9. How strongly do I like:
   To be one of the most popular undergrads on campus.
10. How strongly do I like:
   To be thought most likely to amount to something by my instructors.

11. How strongly do I like:
   To go out of my way to help others.

12. How strongly do I like:
   To understand new material quickly in class.

13. How strongly do I like:
   To have friends want to do things with me during vacations.

14. How strongly do I like:
   To be well-prepared for class discussion.

15. How strongly do I like:
   To get along well with most of the students.
16. How strongly do I like:

To win a scholarship while in college.

0 10 20 30 40 50 60 70 80 90 100

NEITHER LIKE NOR LIKE VERY MUCH

17. How strongly do I like:

To be in on the fun that goes on around here.

0 10 20 30 40 50 60 70 80 90 100

NEITHER LIKE NOR LIKE VERY MUCH

18. How strongly do I like:

To get at least a B average this year.

0 10 20 30 40 50 60 70 80 90 100

NEITHER LIKE NOR LIKE VERY MUCH

19. How strongly do I like:

To have other students enjoy having me around.

0 10 20 30 40 50 60 70 80 90 100

NEITHER LIKE NOR LIKE VERY MUCH

20. How strongly do I like:

To be considered a bright student by my instructors.

0 10 20 30 40 50 60 70 80 90 100

NEITHER LIKE NOR LIKE VERY MUCH

21. How strongly do I like:

To openly express my appreciation of others.

0 10 20 30 40 50 60 70 80 90 100

NEITHER LIKE NOR LIKE VERY MUCH
22. How strongly do I like:
To have good enough grades to go on to the profession, training program, or graduate school if I want to.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE NOR DISLIKE
LIKE LIKE VERY MUCH

23. How strongly do I like:
To do things with the groups just because I like being with them.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE NOR DISLIKE
LIKE LIKE VERY MUCH

24. How strongly do I like:
To be thought of as a good student by my classmates.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE NOR DISLIKE
LIKE LIKE VERY MUCH

25. How strongly do I like:
To be known as one of the best-liked persons in my peer group.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE NOR DISLIKE
LIKE LIKE VERY MUCH

26. How strongly do I like:
To be encouraged by my instructors to go on to professional school, graduate school, or other advanced training.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE NOR DISLIKE
LIKE LIKE VERY MUCH
27. How strongly do I like:

To have many friends in different groups.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE LIKE VERY
LIKE NOR LIKE
DISLIKE LIKE MUCH

28. How strongly do I like:

To do well in some of the more difficult courses here.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE LIKE VERY
LIKE NOR LIKE
DISLIKE LIKE MUCH

29. How strongly do I like:

To know that the instructor actually likes me as a person.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE LIKE VERY
LIKE NOR LIKE
DISLIKE LIKE MUCH

30. How strongly do I like:

To come out near the top of the class on mid-term exams.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE LIKE VERY
LIKE NOR LIKE
DISLIKE LIKE MUCH

31. How strongly do I like:

To have a sexual relationship that is satisfying.

0 10 20 30 40 50 60 70 80 90 100
NEITHER LIKE LIKE VERY
LIKE NOR LIKE
DISLIKE LIKE MUCH
In this section, we want to know how strongly you expect certain things to happen. How strongly you expect something can be shown by putting an "X" somewhere along a line that runs from SURE IT Will HAPPEN, at one end, to SURE IT WILL NOT HAPPEN, at the other end.

When you are very sure something will happen, you can show this by making an "X" toward the end that says SURE IT WILL HAPPEN. WHEN you don't expect something will happen, you can show that by making an "X" toward the other end SURE IT WILL NOT HAPPEN. If you think the chances are about even, put an "X" somewhere toward the middle of the line. Your "X" can be anywhere along the line, depending on what you really expect.

Remember, in this section we are not asking about what you would like to happen. Answer each question in terms of what you really expect. We want you to be as realistic as possible. Each question should be answered by itself. Don't worry about how you have answered the others. There are no right or wrong answers.

1. How strongly do I expect:
   To be well-liked by most of the people around here.

2. How strongly do I expect:
   To be able to get my ideas across in class.

3. How strongly do I expect:
   To be asked to take part in many social activities.

4. How strongly do I expect:
   To be in the top half of the class at graduation.
5. How strongly do I expect:

To be thought of as a best friend by several persons around here.

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6. How strongly do I expect:

To get on the Dean’s list during the year.

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7. How strongly do I expect:

To have groups to show real pleasure when I join them.

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8. How strongly do I expect:

To be able to answer other students’ questions about school work.

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9. How strongly do I expect:

To be one of the most popular undergrads on campus.

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10. How strongly do I expect:

To be thought most likely to amount to something by my instructors.

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11. How strongly do I expect:
   To go out of my way to help others.
   ![Rating Scale]

12. How strongly do I expect:
   To understand new material quickly in class.
   ![Rating Scale]

13. How strongly do I expect:
   To have friends want to do things with me during vacations.
   ![Rating Scale]

14. How strongly do I expect:
   To be well-prepared for class discussion.
   ![Rating Scale]

15. How strongly do I expect:
   To get along well with most of the students.
   ![Rating Scale]

16. How strongly do I expect:
   To win a scholarship while in college.
   ![Rating Scale]

17. How strongly do I expect:
   To be in on the fun that goes on around here.
   ![Rating Scale]
18. How strongly do I expect:

To get at least a B average this year.

19. How strongly do I expect:

To have other students enjoy having me around.

20. How strongly do I expect:

To be considered a bright student by my instructors.

21. How strongly do I expect:

To openly express my appreciation of others.

22. How strongly do I expect:

To have good enough grades to go on to graduate school if I want to.

23. How strongly do I expect:

To do things with the group just because I like being with them.
24. How strongly do I expect:
   To be thought of as a good student by my classmates.

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25. How strongly do I expect:
   To be known as one of the best-liked persons in my class.

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26. How strongly do I expect:
   To be encouraged by my instructors to go on to graduate school.

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27. How strongly do I expect:
   To have many friends in different groups.

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28. How strongly do I expect:
   To do well in some of the more difficult courses here.

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29. How strongly do I expect:
   To know that the instructor actually likes me as a person.

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30. How strongly do I expect:

To come out near the top of the class on mid-term exams.

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31. How strongly do I expect:

To have a sexual relationship that is satisfying.

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APPENDIX G -- SOCIAL DESIRABILITY QUESTIONNAIRE

Part 7: In this section, we are interested in some general information about you. Please circle "T" if you agree with the following statement and "F" if you disagree with the statement. Please choose the response that best fits you.

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<tr>
<td>T</td>
<td>F</td>
<td>1. I usually use good judgment.</td>
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<td>T</td>
<td>F</td>
<td>2. I tend to be a very nervous, irritable person.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>3. I am glad I grew up the way I did.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>4. I have never been really happy.</td>
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<td>T</td>
<td>F</td>
<td>5. Doing something that would benefit humanity appeals to me.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>6. Sometimes I am afraid of my friends, although I can't say why.</td>
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<td>T</td>
<td>F</td>
<td>7. I have never been an unusually weak or sickly person.</td>
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<td>T</td>
<td>F</td>
<td>8. I am afraid to speak to a friend who has not spoken to me first.</td>
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<td>T</td>
<td>F</td>
<td>9. I try to consider all sides of an issue before I form an opinion.</td>
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<td>T</td>
<td>F</td>
<td>10. I am not living what I would consider to be the right kind of life.</td>
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<td>T</td>
<td>F</td>
<td>11. If someone gave me too much change, I would tell him/her.</td>
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<td>T</td>
<td>F</td>
<td>12. I never bother to consider the results of any act of mine before I do it.</td>
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<td>T</td>
<td>F</td>
<td>13. I get along with people at parties quite well.</td>
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<td>T</td>
<td>F</td>
<td>14. I did many very bad things as a child.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>15. Before I do something, I try to figure out how it will affect my friends and family.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>16. I am never able to do things as well as I should.</td>
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<tr>
<td>T</td>
<td>F</td>
<td>17. I am careful to plan for my distant goals.</td>
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T  F  18. Most people won't believe the truth no matter how obvious it is.

T  F  19. I am one of the lucky people who could talk with my parents about my problems.

T  F  20. My daily life includes many activities I dislike.

END OF QUESTIONNAIRE

Please remain in your seats until one of the experimenters indicates that you may go. The results of this experiment will be available in the library when it is completed. If you would like to be notified when the results are available, please put your name and mailing address on the sheet marked "Results" as you leave the experiment. If you have further questions or comments following the experiment, the experimenter will be available following the end of the session. Thank you for your participation in this experiment.
## APPENDIX H

Mean Comparison of Age, Gender, and Risk Variables by Sample

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<th>Variable</th>
<th>Number of Cases</th>
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<th>Standard Deviation</th>
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APPENDIX H (continued)

Mean Comparison of Age, Gender, and Risk Variables by Sample

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<th>t Degrees of 2-tail Value</th>
<th>Freedom</th>
<th>Prob.</th>
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Notes: VAGINAL=Frequency of Vaginal Intercourse. CONDOM=Frequency of Condom Usage. LIFEPART=Lifetime Sexual Partners. FIRSTSEX=Age of First Sexual Intercourse. SEXTIME=Time Between Meeting a Sexual Partner and First Sexual Contact. DRINKSEX=Frequency of Alcohol Use with Sexual Contact. DRUGSEX=Frequency of Drug Use with Sexual Contact.
APPENDIX I

Frequencies of the AIDS-Risk Items

### Reported Frequency of Vaginal Intercourse in the Past Month

<table>
<thead>
<tr>
<th>Risk Value Label</th>
<th>Value</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cum Percent</th>
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</thead>
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<td>110</td>
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<tr>
<td>ONCE</td>
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<td>18</td>
<td>7.5</td>
<td>53.6</td>
</tr>
<tr>
<td>2-5 TIMES</td>
<td>2</td>
<td>39</td>
<td>16.3</td>
<td>69.9</td>
</tr>
<tr>
<td>6-10 TIMES</td>
<td>3</td>
<td>29</td>
<td>12.1</td>
<td>82.0</td>
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<tr>
<td>11 OR MORE TIMES</td>
<td>4</td>
<td>43</td>
<td>18.0</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>239</strong></td>
<td><strong>100.0</strong></td>
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### Reported Frequency of Performed Oral Intercourse in the Past Month

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<th>Percent</th>
<th>Cum Percent</th>
</tr>
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<tbody>
<tr>
<td>NONE</td>
<td>0</td>
<td>150</td>
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<td>62.8</td>
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<td>ONCE</td>
<td>1</td>
<td>18</td>
<td>7.5</td>
<td>70.3</td>
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<td>2-3 TIMES</td>
<td>2</td>
<td>43</td>
<td>18.0</td>
<td>88.3</td>
</tr>
<tr>
<td>4-6 TIMES</td>
<td>3</td>
<td>14</td>
<td>5.9</td>
<td>94.1</td>
</tr>
<tr>
<td>7 OR MORE TIMES</td>
<td>4</td>
<td>14</td>
<td>5.9</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
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### Reported Frequency of Oral Intercourse Received in the Past Month

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<th>Cum Percent</th>
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<td>NONE</td>
<td>0</td>
<td>149</td>
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<td>62.3</td>
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<td>ONCE</td>
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<td>30</td>
<td>12.6</td>
<td>74.9</td>
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<tr>
<td>2-3 TIMES</td>
<td>2</td>
<td>27</td>
<td>11.3</td>
<td>86.2</td>
</tr>
<tr>
<td>4-6 TIMES</td>
<td>3</td>
<td>20</td>
<td>8.4</td>
<td>94.6</td>
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<tr>
<td>7 OR MORE TIMES</td>
<td>4</td>
<td>13</td>
<td>5.4</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
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### Reported Frequency of Anal Intercourse in the Past Month

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<td>2-3 TIMES</td>
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<td>5</td>
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<td>99.6</td>
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<tr>
<td>4-6 TIMES</td>
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<td>1</td>
<td>0.4</td>
<td>100.0</td>
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<tr>
<td><strong>Total</strong></td>
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### APPENDIX I (continued)

**Frequencies of the AIDS-Risk Items**

#### Frequency of Report Condom Usage in the Last Month

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<th>Value</th>
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<th>Cum Percent</th>
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<td>42.7</td>
<td>42.7</td>
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<td>Everyday</td>
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<td>39</td>
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<td>Often</td>
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<td>22</td>
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<td>68.2</td>
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<td>Sometimes</td>
<td>3</td>
<td>12</td>
<td>5.0</td>
<td>73.2</td>
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<tr>
<td>Rarely or Never</td>
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<td>64</td>
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<th>Cum Percent</th>
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<td>4</td>
<td>16.7</td>
</tr>
<tr>
<td>12</td>
<td>2</td>
<td>8</td>
<td>17.6</td>
</tr>
<tr>
<td>13</td>
<td>9</td>
<td>3.8</td>
<td>21.3</td>
</tr>
<tr>
<td>14</td>
<td>19</td>
<td>7.9</td>
<td>29.3</td>
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<tr>
<td>15</td>
<td>27</td>
<td>11.3</td>
<td>40.6</td>
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<td>16</td>
<td>41</td>
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<td>44</td>
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<td>18</td>
<td>36</td>
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<td>13</td>
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<td>5</td>
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<td>21</td>
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#### Reported Number of Sexual Partners in the Last Year

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<td>96</td>
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<td>2-3 Partners</td>
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<td>53</td>
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<td>87.9</td>
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<tr>
<td>4-6 Partners</td>
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<td>21</td>
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<td>96.7</td>
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<tr>
<td>7 or more Partners</td>
<td>4</td>
<td>8</td>
<td>3.3</td>
<td>100.0</td>
</tr>
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#### Reported Number of Lifetime Sexual Partners

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<th>Percent</th>
<th>Cum Percent</th>
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<td>None</td>
<td>0</td>
<td>39</td>
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<td>16.3</td>
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<tr>
<td>1 Only</td>
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<td>47</td>
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<td>81</td>
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</tr>
<tr>
<td>6-15 Partners</td>
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<td>39</td>
<td>16.3</td>
<td>86.2</td>
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<tr>
<td>16 or more Partners</td>
<td>4</td>
<td>33</td>
<td>13.8</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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### Frequencies of the AIDS-Risk Items

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<th>Percent</th>
<th>Cum Percent</th>
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<td>5.9</td>
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<td>7</td>
<td>2.9</td>
<td>8.8</td>
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<td>30</td>
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<td>21.3</td>
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<tr>
<td>SOMEONE YOU MET ONCE OR TWICE</td>
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<td>12</td>
<td>5.0</td>
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<tr>
<td>NEVER KNOWN AIDS VICTIM</td>
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<td>176</td>
<td>73.6</td>
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<td><strong>Total</strong></td>
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<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
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### Average Time Between Meeting a Sexual Partner and First Sexual Contact

<table>
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<th>Risk Value</th>
<th>Frequency</th>
<th>Percent</th>
<th>Cum Percent</th>
</tr>
</thead>
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<td>42</td>
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<td>17.6</td>
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<td>85</td>
<td>35.6</td>
<td>53.1</td>
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<td>1 WEEK TO 1 MONTH</td>
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<td>30</td>
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<td>65.7</td>
</tr>
<tr>
<td>2 DAYS TO 1 WEEK</td>
<td>3</td>
<td>20</td>
<td>8.4</td>
<td>74.1</td>
</tr>
<tr>
<td>1 DAY</td>
<td>4</td>
<td>62</td>
<td>25.9</td>
<td>100.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>239</strong></td>
<td><strong>100.0</strong></td>
<td><strong>100.0</strong></td>
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</tbody>
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## APPENDIX J

Correlations Between Problem Behavior Scale Items, AIDS-Risk, AIDS Attitudes, Total Problem Behavior, and Social Desirability

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* - Signif. LE .05  ** - Signif. LE .01 (2-tailed)

Notes: N = 158; HIVRISK = HIV Risk Measure, AIDSATT = AIDS Attitude Measure, PROBBEH = Problem Behavior Measure, SOCDESIR = Social Desirability Measure

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APPENDIX K

Principle Components Analysis Rotated Factor Matrix for the AIDS Attitude Measure

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Notes: N = 158; Orig=Original Item Subscale, SE=Self-Efficacy, SCS=Sexual Communication Skills, IB=Interpersonal Barriers, SL=Self Labeling, PR=Perceived Risk, PSN=Perceived Social Norms, SSE=Safe Sex Efficacy, & ENJ=Enjoyment Value.
* - Items eliminated from the measure in replication.
APPENDIX L

Zero-Order Correlations Between Major Study Variables for Sample A

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Notes: N=158: df=156  (" . " IS PRINTED IF A COEFFICIENT CANNOT BE COMPUTED)
APPENDIX M

Correlations between AIDS-Risk Variables, Problem Behavior, AIDS-Related Attitudes, and Social Desirability

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"-" is printed if a coefficient cannot be computed

Notes: N = 239; VAGINAL=Frequency of Reported Vaginal Intercourse in the Past Month; ANAL=Frequency of Reported Anal Intercourse in the Past Month; ORALGIVE=Frequency of Reported Oral Sex Performed on Another Person in the Past Month; ORALREC=Frequency of Oral Sex Received in the Past Month; YEARPART=Number of Reported Sexual Partners in the Past Year; LIFEPART=Number of Reported Sexual Partners Life Time; CONDOM=Reported Frequency of Condom Use; SEXTIME=Time Between Meeting Partner to Sexual Contact; DRINKSEX=Frequency of Alcohol Use Combined With Sex; DRUGSEX=Frequency of Drug Use Combined With Sex; FIRSTSEX=Age of First Sexual Intercourse
### APPENDIX N

Correlations between AIDS Attitude Items and AIDS-Risk, AIDS Attitude Score, and the Jackson Social Desirability Scale.

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Notes: N = 239; SE=Self-Efficacy, IB=Interpersonal Barriers, SL=Self Labeling, PR=Perceived Risk, PSN=Perceived Social Norms, SSE=Safe Sex Efficacy, ENJ=Enjoyment Value.  
* - Signif. LE .05  ** - Signif. LE .01 (2-tailed)
APPENDIX 0

Correlations and Significance Values Between Age, Gender, AIDS-Risk, AIDS Knowledge, AIDS Attitudes, Problem Behavior, Value Access Distinction, and Social Desirability Measures

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Notes: N = 239; "." is printed if a coefficient cannot be computed.
### Correlations and Significance Values Between Age, Gender, AIDS-Risk, Problem Behavior, Social Desirability, and the Subscales of the AIDS Attitude Measure

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**Notes:** SELFEFF=Self-Efficacy Subscale, SOCNORMS=Perceived Social Norms Subscale, SELFLABL=Self-Labeling Subscale, SEXEFF=Safe-Sex Efficacy Subscale, INTERPER=Interpersonal Barriers Subscale, ENJOYMNT=Enjoyment Subscale, PERRISK=Perceived Risk Subscale.

N=239
## APPENDIX Q

Means Comparison by Gender for Age and Risk-Related Variables

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Notes: * - Significant F value indicates separate variance estimates.
# APPENDIX Q (continued)

## Means Comparison by Gender for Age and Risk-Related Variables

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**Notes:**
- N = 239.
- Significant F value indicates separate variance estimates.
- VAGINAL = Frequency of Vaginal Intercourse.
- CONDOM = Frequency of Condom Usage.
- LIFEPART = Lifetime Sexual Partners.
- FIRSTSEX = Age of First Sexual Intercourse.
- SEXTIME = Time Between Meeting a Sexual Partner and First Sexual Contact.
- DRINKSEX = Frequency of Alcohol Use with Sexual Contact.
- DRUGSEX = Frequency of Drug Use with Sexual Contact.