University students' knowledge attitudes behaviors and policy preferences regarding HIV/AIDS

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UNIVERSITY STUDENTS' KNOWLEDGE, ATTITUDES, BEHAVIORS, AND POLICY PREFERENCES REGARDING HIV/AIDS

by:

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University Students' Knowledge, Attitudes, Behaviors, and Policy Preferences Regarding HIV/AIDS

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ABSTRACT

In a sample of 590 college students, attitudes, knowledge, and behaviors regarding HIV/AIDS were investigated along with support for policies constraining persons with HIV/AIDS and support for general HIV/AIDS social policies. Findings indicate that although students demonstrate a high level of HIV/AIDS knowledge, they still have misconceptions about transmission of the virus through casual contact. Students were very humane in their attitudes toward those with HIV/AIDS and HIV/AIDS policy preferences, and also low in reported risky sexual behavior. However, females reported more empathy for those with HIV/AIDS and less participation in risky acts. Cognitive consistency theories advocate that individuals strive to maintain attitudes which are internally consistent with their knowledge. This notion was supported as a positive association was found between HIV transmission knowledge and attitudes toward those with HIV/AIDS. Knowledge of HIV transmission was not related to less participation in risky sexual behavior, although greater knowledge and more humane attitudes were associated with sympathetic policy preferences. A discussion of the findings is included, along with implications for HIV/AIDS education and prevention programs.
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INTRODUCTION

The human immunodeficiency virus (HIV) and the acquired immunodeficiency syndrome (AIDS) represent one of the greatest health concerns for contemporary society. As of June 1995, nearly half a million (476,899) persons in the United States have been reported with AIDS (Centers for Disease Control, 1995). In the absence of a cure or an effective treatment, the major strategy of health agencies and public service messages has been to educate the public about the disease. HIV/AIDS education has not been seen as mere transmittal of knowledge, but has also assumed motivational qualities to bring about safer sexual practices and more positive attitudes toward those with HIV/AIDS. The ultimate goals of HIV/AIDS education are to prevent the spread of HIV/AIDS and to bring people and communities together to fight the disease.

These goals are unrealistic given the complex dynamics of attitudes and behaviors. For example, numerous studies have established that knowledge of HIV/AIDS alone does not affect the degree of one's risky sexual behavior (DiClemente, Forrest, & Mickler, 1990; McCormack, Smith, Anderton & Barbieri, 1993; Fisher & Misovich, 1990; Sheehan, 1991; Adams, 1990; Lau, Quadrel, & Hartman, 1990; Oswalt & Matsen, 1993; Svenson & Varnaga, 1990). In addition, since HIV/AIDS sentiments are often linked to deeply rooted prejudice against homosexuals and intravenous drug users, it seems unlikely that education alone would improve attitudes toward those with HIV/AIDS.

Young adults are the group most at risk for HIV/AIDS. In its 1995 mid-year report, the CDC pointed out the need for prevention strategies appropriate...
to younger age groups, indicating that 41.5% of diagnosed AIDS cases are among persons ages 20-34. Health educators need current information regarding young peoples' existing knowledge of HIV/AIDS, attitudes toward those with HIV/AIDS, and risk behaviors, in order to develop HIV/AIDS curricula and educational methods appropriate for them (Adame, Taylor-Nicholson, Wang, & Abbas, 1991). Focusing on this age group also provides an early indicator of future levels of HIV seroprevalence and AIDS prevalence, and provides a baseline against which to measure the effects of future intervention (Fisher & Misovich, 1990).

College students in particular are at increased risk of HIV/AIDS. College represents a time of increased autonomy from parental supervision and increased influence from peers. It is a time of rapidly increasing personal, social, and intellectual development. College is also considered a time of accelerated sexual and drug experimentation (DiClemente et al., 1990; Sheehan, 1991; McCormack et al., 1993). Furthermore, most studies have shown that college students are not concerned about HIV/AIDS and do not perceive themselves to be at risk (Oskamp, Hoffman, Donaldson, Winter, Kane, Westerfield, Parra, Paulson, & Wegreit, 1988; Turner, Anderson, Fitzpatrick, Fowler, & Mayan White, 1988; Gray & Saracino, 1991; ). Therefore, in order to control the spread of HIV/AIDS, it is critical to examine college students' knowledge of the disease and their risky behavior practices. Additionally, since young people, particularly college students, will determine future political policies which will govern the actions of persons with HIV/AIDS and provide funding for HIV/AIDS research, it is important to monitor their attitude towards
persons with HIV/AIDS and their preferences regarding HIV/AIDS policy.

The purpose of this study is to assess levels of and interrelations among, knowledge of HIV/AIDS, attitudes toward those with HIV/AIDS, and risky sexual practices for college students attending a university in the northwestern United States. This research also surveys students' support for political policies that would control the behavior of persons with HIV/AIDS and provide funds for HIV/AIDS research, and examines the relationship among students' policy preferences, their knowledge of HIV/AIDS, and their HIV/AIDS attitudes.

**KNOWLEDGE OF HIV/AIDS**

Most studies examining college students' knowledge of HIV/AIDS address two dimensions of knowledge, general HIV/AIDS knowledge and HIV/AIDS transmission knowledge (Sheehan, 1991). Overall, these studies report a very high and increasing general knowledge of HIV/AIDS among college students (Turner et al., 1988; Oskamp et al., 1988; Burnette, Redmon, & Poling, 1990). In addition, several studies have remarked on the high level of college students' knowledge of HIV transmission, but also point out weaknesses in this area. For example, McGuire, Shega, Nicholis, Deese, & Landefeld (1992), found that 43% of their college sample (n=158) did not know that HIV could be spread by fellatio. In his review of works on HIV/AIDS knowledge, Sheehan (1991), found that a large number of students still believe that HIV can be transmitted by mosquitos, by donating blood, and by drug use not involving a needle. Further, several studies have pointed out that a large proportion of college students still believe that HIV/AIDS can be transmitted by
such casual contact as drinking from the same glass, kissing, and sneezing (DiClemente et al., 1990; Gray & Saracino, 1991; Adame et al., 1991; LeBlanc, 1993).

Although college students' knowledge of HIV/AIDS has been generally high, differences have been found among various groups. For example, LeBlanc (1993) found that the characteristics most strongly associated with knowledge of HIV/AIDS were education, age, income, and ethnicity. LeBlanc hypothesized that men and young adults would have a higher knowledge of HIV/AIDS since the disease affects them disproportionately. In his study of 17,696 adults, he found that young adults were more knowledgeable about the disease. However, females were more knowledgeable than males. These results were mirrored in college samples by Oskamp et al. (1988) and James and Frese (1993). LeBlanc also found higher knowledge of HIV/AIDS among whites and those with higher socioeconomic status.

ATTITUDES TOWARD PERSONS WITH HIV/AIDS

Although HIV/AIDS is not exclusively confined to homosexuals and intravenous drug users, negative attitudes toward persons with HIV/AIDS may reflect the perceived association between HIV/AIDS and these stigmatized groups. Attitudes toward those with HIV/AIDS are primarily a function of attitudes toward homosexuals (Larsen, Serra, & Long, 1990), and homophobia leads to victimization of persons with HIV/AIDS (Gray & Saracino, 1991).
A THEORY OF COGNITIVE CONSISTENCY

The fundamental link between attitudes toward persons with HIV/AIDS and attitudes toward homosexuals and intravenous drug users can be examined using cognitive consistency theory (Shaw & Costanzo, 1970). This perspective is based on the notion that individuals possess systems of beliefs and attitudes which are internally consistent. Furthermore, "...inconsistent cognitions arouse an unpleasant psychological state which leads to behaviors designed to achieve consistency which is psychologically pleasant" (Shaw & Costanzo, 1970 p. 188).

In terms of HIV/AIDS attitudes, if someone sees AIDS as a disease associated with homosexuals and intravenous drug users, and has negative feelings toward these groups, one of two things must happen in order for that individual to achieve a consistent perception of those with HIV/AIDS. Either the individual will view those with HIV/AIDS, as well as the stigmatized groups, negatively. This type of adjustment is known as a sentiment change. Or the individual will separate the association between persons with HIV/AIDS and the stigmatized groups, an adjustment known as a unit change. According to Esch (1950; from Shaw & Costanzo, 1970 p. 192), the majority of people would resolve the imbalance through a sentiment change.

The cognitive consistency perspective can be extended to explain the idea that a greater knowledge of HIV/AIDS may bring about more humane attitudes toward persons with HIV/AIDS. If individuals are aware of the various ways in which HIV can be transmitted, and know that AIDS is not just a disease of homosexuals and intravenous drug users, they may be more likely to
separate their attitudes toward persons with HIV/AIDS and their attitudes toward the stigmatized groups. Additionally, if individuals were better informed about HIV/AIDS in general, they might be better able to empathize with someone who has HIV/AIDS, regardless of that person’s lifestyle.

Due to the complexity of operationalizing attitudes toward persons with HIV/AIDS, findings on the relationship between HIV/AIDS knowledge and attitudes have been ambiguous. Several studies of college samples have noted a relationship such that an increased knowledge of the disease is associated with more humane attitudes toward those with HIV/AIDS (Oskamp et al., 1988; Krupka & Vener, 1988; Fisher & Misovich, 1990; James & Frese, 1993). However, other studies have shown no relation between the two (Gray & Saracino, 1991; Sheehan, 1991; McGuire et al., 1992).

Most studies indicate that college students have very humane attitudes toward persons with HIV/AIDS (DiClemente et al., 1990; Biasco & Taylor, 1991; McGuire et al., 1992). However, Gray and Saracino (1991) found that college students were accepting of those with HIV/AIDS only when the issue did not involve personal interaction with someone who had HIV/AIDS. Further, less than half of the students in their sample (n=520) would agree to work alongside someone they knew had HIV/AIDS. Additionally, Burnette et al. (1990) found that 26% of their college sample attached fault for getting HIV/AIDS to the victim, and 14% saw HIV/AIDS as punishment from God (n=491).

Differences in attitudes toward persons with HIV/AIDS have been found by gender (Burnette et al., 1990; Gray & Saracino, 1991), age (James & Frese,
1993), and personality type (Larsen et al., 1990). Findings indicate that females and younger students have more humane attitudes toward persons with HIV/AIDS. Further, those displaying authoritarian personality tendencies, such as rigid adherence to conventional middle class values, strict obedience of authority, and aggression toward those who are considered unconventional, have less humane attitudes regarding HIV/AIDS.

**HIV/AIDS RISK BEHAVIORS**

Of vital importance in dealing with the spread of HIV, are changes in the sexual behavior of young people. Research examining sexual behavior of college students shows that although students report limiting risky sexual behavior because of the threat of HIV/AIDS, few students actually adopt “safer sex” practices. For example, Fisher and Misovich (1990) found that in 1988, 45% of males and 32% of females in their study (n=166) reported limiting their number of sex partners. These numbers were up from figures reported by a similar sample in 1986 (19% and 11% respectively, n=227). However, they found that students were actually more likely to have had intercourse and had more partners in 1988 than in 1986.

Similar results were found by DiClemente et al., 1990, who reported that 37% of students in their sample (n=1,127) never used condoms and only 8% used condoms every time they had sex with a new partner. McCormack et al. (1993) found that only one-third of sexually active men in their sample (n=133) reported insisting on condom use.
Overall, these studies indicate that despite efforts to educate young people about HIV/AIDS and promote behavior change, "safer sex" practices are not yet being widely adopted by young adults. It should be pointed out, however, that even though knowledge of HIV/AIDS may not be sufficient to influence behavior change, HIV/AIDS education is still needed to provide the methods and skills for young people to practice "safer sex" (Sheehan, 1991; Fisher & Misovich, 1990).

One commonly held belief is that students do not perceive themselves as being at risk for HIV/AIDS. Numerous studies have found that students who do not perceive themselves at risk of HIV are less likely to change their sexual practices (DiClemente et al., 1990; Gray & Saracino, 1991; McGuire et al., 1992). According to Sheehan (1991), college students are unable to personalize the risk of contracting HIV/AIDS because they have an "illusion of invulnerability" and have a difficult time conceptualizing their own death. In addition to perceived risk, gender (Ward & Ault, 1990; Wicks, 1991; McCormack et al., 1993) and personal contact with persons with HIV/AIDS (Oskamp et al., 1988; Fisher & Misovich, 1990) have also been found to be related to college students' risky behavior. According to these studies, females, and those who have known someone with HIV/AIDS generally engage in less risky sexual practices.
SAMPLE

The respondents for this survey were students attending the University of Montana, Fall semester 1994. A number of general interest courses at the university were sampled to gather an availability sample. The sample resulted in a total of 607 respondents of diverse academic majors. Females accounted for 54.2% (320), and the average age of the sample was 22 years. There were 32.3% (196) in the 17-19 age group, 49.9% (303) in the 20-24 age group, with 17.8% (108) being 25 and older. The sample was similar to the population at the university Fall semester 1994, where there was an enrollment of 49.3% males and 51% females. Since general interest introductory courses were used to gather the data, younger students represented a larger percentage in the sample than in the university population. In the university, there were 22.2% age 17-19, 45% age 20-24 and 33% over age 25. Like the university, the sample was very homogeneous with only 7% indicating an ancestry other than white (non-hispanic). There were 11 Asians, 4 African-Americans, 10 Hispanics and 17 Native Americans.

The sample was also very uniform in sexual orientation with only 7 reporting themselves as bisexual and 6 homosexual. It was anticipated that homosexual or bisexual respondents would have a greater knowledge of HIV/AIDS, and more humane attitudes toward those with HIV/AIDS. However, since there were not enough respondents in these groups for adequate investigation, homosexuals, bisexuals and those who did not indicate a sexual preference (4 cases) were excluded. The final number of respondents used in the analysis was 590.
DEFINITIONS OF VARIABLES

Items were adapted from the instrument used by LeBlanc (1993) in order to measure knowledge of HIV/AIDS. Four additional instruments were developed for use here: attitudes toward those with HIV/AIDS, degree of risky sexual behavior, endorsement of policies that would seek to protect and inform others by constraining those with HIV/AIDS, and social policies that would stimulate research on HIV/AIDS as well as provide help to persons with HIV/AIDS.

Other variables used included gender, age, total education, and knowledge of persons with HIV/AIDS. Gender was coded “0” for females and “1” for males and age was used as an interval level measure. Total education was the students’ total number of years at the University of Montana plus their total number of years at other colleges. The distribution of total education was extremely negatively skewed, therefore it was only used as a dichotomy coded “0” for 1-3 years of education (76.3%) and “1” for 4 or more years (23.7%).

On the questionnaire, students were asked “Have you personally known someone with the AIDS virus?” They were then instructed to check all of the following that applied: N/A, I have never known anyone with the AIDS virus, friend, sibling, spouse/partner, co-worker, parent, other relative, acquaintance, teacher/professor, other (please specify). The resulting responses were dichotomized into knowing someone with HIV/AIDS (coded ‘1’ n=163), and not knowing anyone with HIV/AIDS (coded ‘0’ n=199). Because there were 228 cases missing on this item, knowing someone with HIV/AIDS was not used in the multivariate analysis.
KNOWLEDGE OF HIV/AIDS

LeBlanc's (1993) approach to measuring knowledge of HIV/AIDS was to offer respondents knowledge and belief items about AIDS and the AIDS virus for which correct answers were known to exist. The respondents' total score was the number of items answered correctly. Although LeBlanc used a total of 25 items, only 11 of these were used in this study. Since some of the items used by LeBlanc produced highly similar proportions of correct responses, not all of the original items were needed. Another change was to create a single item involving kissing, where LeBlanc had two. One of his questions involved a kiss on the cheek (26.0% correct in his study) and the other mentioned exchange of saliva (he found 13.8% correct). The single item used in this study merely mentioned kissing (76.5% correct).

Of the items adopted from LeBlanc, two dealt with general AIDS knowledge and the remaining nine dealt with HIV transmission. Additionally, five of the transmission items dealt exclusively with transmission by casual contact. In order to better specify students' knowledge of HIV/AIDS, the original items were used as three different scales in the analysis. These included overall HIV/AIDS knowledge, (all items; possible range 0-11, observed range 2-11, mean=8.0, standard deviation= 1.9), HIV transmission knowledge (items 1-9; possible range 0-8, observed range 1-8, mean=5.6, standard deviation= 1.6), and HIV casual contact transmission knowledge (items 1-5; possible range 0-5, observed range 0-5, mean=3.4, standard deviation= 1.4). Cronbach's alpha for each set was .58, .65, and .73 respectively. Since the items comprising each
scale are not mutually exclusive, only the HIV/AIDS transmission knowledge scale was used in the multivariate analysis.

The items employed here, along with the percentage of correct answers from this study and LeBlanc’s study are shown in Appendix A. It is important to note that this sample had a higher proportion of correct answers than LeBlanc reports. This is perhaps due to the nature of the two samples. LeBlanc used the National Health Interview Survey (NHIS), which is a civilian noninstitutional sample, whereas this study focuses exclusively on college students.

**ATTITUDES TOWARD PERSONS WITH HIV/AIDS**

It is difficult to produce a single scale which can adequately address the various dimensions forming one’s attitude toward persons with HIV/AIDS. However, the distance people prefer from persons with HIV/AIDS may reflect the attitude they hold towards them. For instance, if one doesn’t mind being in the same room with someone who has HIV/AIDS, one probably has a more humane attitude towards persons with HIV/AIDS than someone who cannot stand being in the same room with them. Therefore, social distance can be said to measure one dimension of a person’s attitude towards persons with HIV/AIDS.

Because of its cumulative nature and historic utility (Bogardus, 1933), a Guttman scale was produced in order to measure desired social distance from persons with HIV/AIDS. As recommended by Guttman (1945), a larger pool of 30 statements was created on the basis of the available literature, intuition, and experience. These items were critiqued by a panel of 30 judges, and 6 items
were chosen on the basis of item content, face validity, singularity and item variation (see Appendix B). Each answer is a simple yes/no dichotomy. They produced lambdas of .56, .71, .67, .65, .71, and .68, with a scale alpha of .67.

The possible range of 0-6 was observed, with a scale mean of 1.24 and standard deviation of 1.36. Since the distribution of these 6 items was extremely negatively skewed, they were not used to form a metric measure. The scale was collapsed into two categories. Most humane attitudes were coded “1” (score of 0, 40.2%) and least humane attitudes were coded “0” (scores 1-6, 59.2%).

HIV/AIDS RISK BEHAVIORS

Risky sexual behavior was also measured using a cumulative Guttman scale. Five items were chosen from a larger pool of 30 items using the same method summarized in the section above. One of the items chosen for the scale seemed to measure an extreme dimension of risky behavior. This question asked if the respondent would have protected sex with someone who has the AIDS virus. When all five items were entered into a factor analysis it was found that this item did not cluster with the others, therefore, it was dropped from the scale. Even though 4 items seem a limited number, Edwards (1957, p.177) points out that "Guttman and his associates have worked with a selected set of four to six statements, with a maximum of perhaps ten to twelve statements."

The possible range of 0-4 was also observed. The scale produced a mean of 1.4 with a standard deviation of 1.0. The Guttman scale lambdas were .28, .39, .37, .41, .40, and .32, with an alpha of .37 (see Appendix C).
SUPPORT FOR HIV/AIDS POLICIES

Two Likert scales were developed to measure support for HIV/AIDS policies. One scale measures support for policies which would alert others that one has HIV/AIDS and/or constrain persons with HIV/AIDS (see Appendix D). The other scale measures support for social policies which would fund research and support public health (see Appendix E). The former includes items calling for physicians to report the names of those with the HIV virus to the government and obliging HIV positive individuals to carry identity tags. Typical of the latter are items calling for more HIV/AIDS education in public schools and support for increased government funding for HIV/AIDS research.

From a pool of 30 items in a pretest with 30 subjects, 5 items were chosen for each scale using scale-value difference analysis (see Edwards, 1957 pp. 152-156). Conventional Likert response alternatives were offered with responses ranging from "strongly agree" to "strongly disagree." Low scores were coded "0" and high scores entered as "4."

In order to confirm that the scales measured two different dimensions, all ten items were examined in a factor analysis. As expected, two dimensions were extracted. Each item measuring support for policies constraining persons with HIV/AIDS loaded on one factor, while each item measuring support for more general social policies loaded on another.

The scale measuring support for policies constraining persons with HIV/AIDS had a possible range of 0-20, which was also the observed range. The mean was 6.1 with a standard deviation of 3.7. The scale measuring support for humane social policies had an observed range of 2-20. The mean
for this scale was 13.6 with a standard deviation of 3.2. The scales produced alphas of .74 and .64 respectively.

**FINDINGS**

The analysis that follows first describes students’ knowledge of HIV/AIDS, attitudes toward persons with HIV/AIDS, risky behavior, and HIV/AIDS policy preferences. This includes describing how respondents scored on individual scale items, and identifying significant differences in these variables by gender, age, total education, and knowing persons with HIV/AIDS.

In order to better define HIV/AIDS attitudes, risky behavior, support for policies constraining persons with HIV/AIDS, and support for humane social policies, each variable was examined in a regression model with several independent variables. A series of path models was then used to further delineate causal relations among HIV/AIDS attitudes, HIV/AIDS transmission knowledge, support for policies constraining those with HIV/AIDS, and support for humane social policies.

**KNOWLEDGE OF HIV/AIDS**

Overall, the students in this sample had a high knowledge of HIV/AIDS. For example, approximately 90% of the students knew that you cannot tell if someone has HIV just by looking at them, and 73% knew that a person can be infected with HIV and not have the disease AIDS. Further, nearly all students knew that HIV can be passed by sexual intercourse, and from sharing needles with someone who has HIV/AIDS (98.8% and 95.4% respectively). However, a
majority of the sample incorrectly indicated that a person is likely to get HIV/AIDS from donating or giving blood (75%).

Students also scored well on most questions dealing with HIV/AIDS casual contact transmission. For instance, nearly 95% of the sample indicated that it is very unlikely or not possible to get HIV from being coughed or sneezed on by someone who has HIV/AIDS. Nearly 77% thought it was very unlikely or not possible to get HIV from kissing a person who has HIV/AIDS, and almost 72% indicated that it was definitely not possible that a person would get HIV/AIDS from living near a hospital or home for HIV/AIDS patients. Students did have misconceptions about casual contact transmission however, since over half of the sample indicated that it was possible to get HIV from using public toilets (54.1%), and that a person could get HIV from working near someone with HIV/AIDS (52.3%).

Although the mean knowledge scores for females were higher than those of males in the sample, there was no significant difference in overall knowledge, transmission knowledge, or casual transmission knowledge by gender (see Table 1). Furthermore, there were no significant differences between males and females on individual HIV/AIDS knowledge questions, with the exception of the item, "How likely do you think it is that a person will get the AIDS virus from living near a hospital or home for AIDS patients?". 75.1% of females answered this item correctly (definitely not possible) as compared to 67.7% of males (chi-square significance = .047).

Additionally, it was found that there was no significant difference in overall knowledge, transmission knowledge or casual transmission knowledge
by age, total education, or knowing someone with HIV/AIDS.

**ATTITUDES TOWARD PERSONS WITH HIV/AIDS**

Students in this sample expressed very humane attitudes toward persons with HIV/AIDS. Only 2.7% of students reported that they would object to someone with HIV/AIDS moving into their neighborhood, and only 18% indicated feeling uncomfortable in a room alone with someone who had HIV/AIDS. Additionally, over half of the students in the sample reported that they would share a house or apartment with someone who had HIV/AIDS (51.7%).

Females in the sample had more humane attitudes toward persons with HIV/AIDS than did males. When examining gender and HIV/AIDS attitudes in a contingency table, it was found that 49.2% of females and only 30.1% of males were in the “most humane” category of HIV/AIDS attitudes (see Table 2). This difference was significant at less than .001 (chi-square = 22.04, df=1, phi= -.19).

In regard to individual HIV/AIDS attitude items, males were significantly more likely to feel uncomfortable around someone with HIV/AIDS, and uncomfortable in a room alone with someone having HIV/AIDS. Females were more likely to invite someone with HIV/AIDS to dinner, and share a house or apartment with someone having HIV/AIDS (see Table 1).

It was hypothesized that knowing someone with HIV/AIDS would affect one's attitude towards persons with HIV/AIDS. When these variables were examined in a cross-tabulation, it was found that those knowing someone with HIV/AIDS had significantly more humane attitudes toward persons with
HIV/AIDS than did those not knowing anyone with HIV/AIDS. However, when controlled for gender, it was apparent that this relationship was only significant for females (chi-square=24.37, df=1, p<.001, phi=.34). 72.3% of females who knew someone with HIV/AIDS were in the most humane category, whereas only 37.8% of females who did not know anyone with HIV/AIDS were more humane (see Table 3).

It was also speculated that a student's total years of college education might effect his or her attitudes toward persons with HIV/AIDS. Total years of education and HIV/AIDS attitudes were examined in a cross-tabulation. It was found that those with four or more years of college education had more humane attitudes toward persons with HIV/AIDS than did those with three or less years. Once again, when controlling for gender, it was found that this relationship was only significant for females (chi-square= 15.91, df=1, p<.001, phi=.22). The results indicated that 69.3% of females with four or more years of education were in the most humane HIV/AIDS attitudes category. However, only 43% of females with three or less years of education were in this category (see table 4). The relationship between total education and HIV/AIDS attitudes for females was additionally controlled for age, which was found to have no effect. There was also no significant difference in HIV/AIDS attitudes by age overall.

**HIV/AIDS RISK BEHAVIORS**

The degree of risky sexual behavior was reportedly very low in this sample. For instance, only 3.9% of the students reported that they would have unprotected sex with someone they believed to be promiscuous. Nearly 75% of
the students claimed they always insist on using some sort of protection during sexual intercourse. Furthermore, only 38% of students thought sex without protection was alright as long as they knew their partner's history, and 31.5% maintained that they insist on an AIDS test from people with whom they have sexual relations.

A two-tailed t-test revealed that males had a significantly higher mean risky behavior score than females (mean= 1.56 and 1.20 respectively, t= -4.55, df=584, p<.001). Comparing males and females on individual risky behavior scale items revealed that females were more likely than males to insist on protection during sex, and insist on AIDS tests from partners. Males, on the other hand, were more likely to report that they would have sex without protection if they knew their partner's history (see table 1). It was also found that there was no significant difference in risky behavior by age, total education, or knowing someone with HIV/AIDS.

SUPPORT FOR POLICIES CONSTRAINING PERSONS WITH HIV/AIDS

Overall, students reported low support for policies intended to constrain persons with HIV/AIDS. Only 6.3% of the students agreed that persons with HIV/AIDS should be required to wear identity tags, and only 7.1% agreed that persons with HIV/AIDS should have a separate place to live. Further, 21.1% agreed that doctors should be required to report the names of HIV/AIDS patients to the government, and 28.8% agreed that insurance companies should be permitted to test applicants for HIV. 74.4% of the respondents agreed that persons with HIV/AIDS have the same right to privacy as everyone else.
Males in the sample reported more support for policies constraining persons with HIV/AIDS than did females. Males had a mean score of 11.83 on the scale measuring support for such policies, whereas females had a mean of 10.46. This difference was significant to the .001 level (t = -4.41, df=563). Furthermore, Males were significantly more likely to agree that insurance companies be allowed to test applicants for HIV, that all persons with HIV/AIDS be required to wear identity tags, and that those with HIV/AIDS should have a separate place to live. Females were more likely to agree that people with HIV/AIDS should have the same right to privacy as everyone else (see Table 1). There was no significant difference found in support for policies constraining those with HIV/AIDS by age, total education, or knowing someone with HIV/AIDS.

**SUPPORT FOR HUMANE SOCIAL POLICIES**

Students were generally very supportive of humane social policies regarding HIV/AIDS. For example, 79.5% agreed that the government should increase the availability of experimental drugs to HIV/AIDS patients, and 76.7% agreed that there should be increased government funding for HIV/AIDS research. Additionally, 80.9% reported that there should be more money allocated for HIV/AIDS education in public schools, and 69.3% agreed that the government should supply free condoms to high school students. Very few students, however, agreed that the government should pay all health care costs of persons with HIV/AIDS (9.1%).
It was found that females had significantly higher support for humane social policies than did males. Females had a mean score of 19.00 on the humane social policy scale, whereas males had a mean of 18.05 (t=3.60, df=566, p<.001). On individual scale items, females were significantly more likely to agree that the government should supply free condoms to high school students, pay all health care costs of HIV/AIDS patients, and increase funds for HIV/AIDS research. Females were also more likely to agree that more money should be provided for HIV/AIDS education in public schools. (See Table 1). Age, total education, and knowing someone with HIV/AIDS had no significant effect on support for humane social policies.

REGRESSION MODELS

Since ordinary least squares regression is incapable of predicting a dichotomous dependent variable, logistic regression was used to predict HIV/AIDS attitudes. HIV/AIDS transmission knowledge, gender, total education, age, and risky behavior were the independent variables used in the model. These variables were entered into the equation simultaneously, therefore, the effects of each independent variable was controlled for the effects of the others.

Approximately 40.4% of the students in the sample were categorized as having most humane HIV/AIDS attitudes, 59.6% of students had least humane HIV/AIDS attitudes. The logistic regression model (see Table 5) was able to increase the overall prediction accuracy of the students’ likelihood of having least humane attitudes to 80.3%, and the likelihood of having most humane attitudes to 41.5%. The model was statistically significant (chi-square= 59.791,
with HIV/AIDS transmission knowledge, gender, and total education being the only significant predictors of HIV/AIDS attitudes. Furthermore, the entire model explained nearly 8% of the variance in HIV/AIDS attitudes (Logit $R^2=.076$).

In the table, the Wald statistic is analogous to a t-test statistic for multiple linear regression. The partial correlation coefficient ($R$) indicates both the direction and relative strength of the relationship between each independent predictor and the dependent variable HIV/AIDS attitudes, controlling for the effects of the other independents.

HIV/AIDS transmission knowledge was the strongest predictor of HIV/AIDS attitudes (Wald=25.366, $p<.001$). Furthermore, the higher one’s transmission knowledge, the more humane their attitudes toward persons with HIV/AIDS ($R=.173$). The second strongest predictor was gender (Wald=18.026, $p<.001$), indicating that females have more humane attitudes toward persons with HIV/AIDS than do males ($R= -.143$). Total education was the third strongest predictor (Wald=11.415, $p<.001$). Those with more education had more humane attitudes toward persons with HIV/AIDS ($R=.110$).

HIV/AIDS risk behaviors, support for policies constraining persons with HIV/AIDS, and support for humane social policies were examined in ordinary least squares regression equations with the following predictor variables: HIV/AIDS attitudes, HIV/AIDS transmission knowledge, gender, age, and total education. Risky behavior was additionally used as an independent variable in the models involving HIV/AIDS policy preferences (see Table 6). The
independent variables were entered into each regression equation simultaneously. The standardized path coefficients ($\beta$) along with significance levels for each independent variable are reported in Table 6.

As with the non-parametric findings, gender was the only variable with a significant influence on risky behavior. In the sample, being male is associated with more reported acts of risky behavior ($\beta=.177$). The overall regression model only explained 4% of the variance in risky behavior ($R^2=.04$).

There were three significant independent variables predicting support for policies constraining those with HIV/AIDS. HIV/AIDS attitudes was the strongest predictor ($\beta=-.313$) followed by HIV/AIDS transmission knowledge and gender ($\beta=-.313$ and $.123$ respectively). These findings indicate that those with least humane HIV/AIDS attitudes, lower HIV/AIDS transmission knowledge, and males have higher support for policies constraining persons with HIV/AIDS. The overall regression model explained approximately 18% of the variance in support for policies constraining persons with HIV/AIDS ($R^2=.182$).

HIV/AIDS attitudes, transmission knowledge, and gender were also the only significant predictors of support for humane social policies ($\beta=.158$, .117, and -.030 respectively). The results indicate that those with most humane HIV/AIDS attitudes, higher HIV/AIDS transmission knowledge, and females have higher support for humane social policies. The overall regression model did not predict support for humane social policies as well as support for policies constraining persons with HIV/AIDS. Only 7.5% of the variance in support for humane social policies was explained by the independent variables ($R^2=.075$).
Since HIV/AIDS attitudes and transmission knowledge were found to be the strongest predictors of student policy preferences, the effects of these variables were examined in a series of path models. Support for policies constraining persons with HIV/AIDS and support for humane social policies were used as dependent variables. Given the obvious gender differences in HIV/AIDS knowledge and attitudes, each path analysis was run separately for males and females.

Figure 1a. and 1b. represent the path models predicting support for policies constraining persons with HIV/AIDS for females and males separately. Figure 2a. and 2b. represent the same analysis with support for humane social policies as the dependent variable. The figures show the Pearson correlation coefficients for the associations between HIV/AIDS attitudes and transmission knowledge and for the associations between each of these variables and the dependent variable (inside the lines). Additionally displayed are the standardized path coefficients between each predictor variable and the dependent variable (outside the lines). These figures represent the association between HIV/AIDS attitudes/transmission knowledge and the dependent variable, controlling for the effects of the other. Also shown in the table is the unexplained path coefficient in each equation.

The findings indicate a moderate and statistically significant positive association between HIV/AIDS attitudes and transmission knowledge for both males and females (r= .1590 and .2459 respectively). However, the association is stronger for females.
For females, HIV/AIDS attitudes and transmission knowledge are negatively associated with support for policies constraining persons with HIV/AIDS ($r = -0.3792$ and $-0.2399$ respectively). Further, when the association between HIV/AIDS attitudes and support for policies constraining persons with HIV/AIDS is controlled for transmission knowledge, the original relationship remains stable ($\beta = -0.3444$). However, when controlling for HIV/AIDS attitudes, the association between transmission knowledge and support for policies constraining persons with HIV/AIDS drops considerably ($\beta = -0.1613$). These findings are consistent with a causal chain or developmental sequence for females in which HIV/AIDS transmission knowledge influences HIV/AIDS attitudes, which in turn, influence support for policies constraining persons with HIV/AIDS.

HIV/AIDS attitudes and transmission knowledge are also negatively associated with support for policies constraining persons with HIV/AIDS for males ($r = -0.3269$ and $-0.2562$ respectively). When controlling for transmission knowledge, the association between HIV/AIDS attitudes and support for policies constraining persons with HIV/AIDS is weakened ($\beta = -0.2891$). The relationship between transmission knowledge and support for policies constraining persons with HIV/AIDS is also weakened when controlling for HIV/AIDS attitudes ($\beta = -0.2106$). However, the original associations were not significantly reduced in either case.

These results, along with the finding that males' transmission knowledge is not strongly associated with their attitudes, indicate that for males, HIV/AIDS attitudes and HIV/AIDS transmission knowledge have independent influences.
on support for policies constraining persons with HIV/AIDS. They additionally suggest that transmission knowledge has a more substantial influence on support for policies constraining persons with HIV/AIDS for males, and HIV/AIDS attitudes have a larger influence for females.

HIV/AIDS attitudes and transmission knowledge did not predict support for humane social policies as well as they did for policies constraining persons with HIV/AIDS. However, noticeable differences between males and females can be identified in the path models predicting support for humane social polices. For instance, a significant positive association was found between HIV/AIDS attitudes and support for humane social policies for females ($r = .2150, \beta = .2057$). However, there was no significant association between HIV/AIDS transmission knowledge and support for humane social polices. These findings were reversed for males where there was found a significant positive relationship between transmission knowledge and support for humane social polices ($r = .1931, \beta = .1749$). There was no significant association between HIV/AIDS attitudes and support for humane social polices for males. This once again indicates that attitudes are more important for females in the sample and transmission knowledge is more important for males.

**DISCUSSION/IMPLICATIONS**

The present study documents college students' knowledge, attitudes, policy preferences and behaviors regarding HIV/AIDS. The findings indicate that the students in the sample were very knowledgeable about HIV/AIDS. However, since over half of the students indicated that it is possible to get HIV
from using public toilets, and that it is possible to get HIV from working near someone with HIV/AIDS, it is apparent that there are still misconceptions about casual contact transmission.

DiClemente et al. (1990) suggest that there are two conceptually distinct domains of HIV/AIDS information, accurate knowledge and misconceptions. Providing students with reliable information regarding HIV/AIDS does not necessarily dispel misconceptions about HIV transmission. This suggests that HIV/AIDS prevention and education programs need to address misconceptions as a separate issue and should not assume that providing accurate information about modes of HIV/AIDS transmission is sufficient.

A significant association was also found between HIV/AIDS transmission knowledge and attitudes toward persons with HIV/AIDS. Consistent with the theory of cognitive consistency, as transmission knowledge increases, attitudes toward those with HIV/AIDS become more positive. It is likely that misconceptions regarding the transmission of HIV contribute to college students' fear and anxiety regarding the spread of the virus, leading to inhumane attitudes toward those with HIV/AIDS.

HIV/AIDS transmission knowledge and attitudes toward persons with HIV/AIDS were additionally associated with students' support for policies constraining persons with HIV/AIDS and general social policies regarding HIV/AIDS. More specifically, the greater one's transmission knowledge and the more humane one's attitude, the less their support for policies constraining persons with HIV/AIDS, and the more humane their social policy preferences. Furthermore, HIV/AIDS transmission knowledge and attitudes predicted support
for policies constraining persons with HIV/AIDS better than they predicted support for humane social polices. This is probably due to the nature of the two dimensions of policies. Policies such as increasing government funds for HIV/AIDS research and providing more money for HIV/AIDS education are complex and more detached from an individual's attitudes and transmission knowledge. However, policies directed specifically toward those with HIV/AIDS are more firmly linked to one's attitude toward persons with HIV/AIDS and one's knowledge of HIV transmission.

These findings indicate that enhancing college students' understanding of HIV transmission and improving their sentiments toward those with HIV/AIDS will contribute to a more productive future as far as promoting safe sex, providing for HIV/AIDS education, and allowing for increased funding for HIV/AIDS research. It will additionally allow for an environment that is less contentious and more suitable to the needs of those living with the disease.

The majority of students in this sample reported low levels of risky sexual behavior. This finding is deceptive, however, since there may be a difference between the students' reported behavior and their actual behavior. What students report on a survey might be the behavior they intend on employing in a certain situation but not the behavior they actually employ (Ajzen & Fishbein, 1970). Furthermore, when dealing with sensitive issues such as sexual practices, students may have a tendency to report what is socially appropriate rather than what is accurate.

The disparity between students' reported behavior and their actual behavior may also be a function of how the risky behavior variable was
operationalized in this study. Items measuring risky behavior were asked in accordance to what a student would do, rather than what they have done. For instance, one item read "I would have unprotected sex with someone I believed to be promiscuous." It might be more valid to inquire how many times in the past month the student has had unprotected sex with someone believed to be promiscuous.

Similar to results found in other college samples, there was no association found between students' knowledge of HIV/AIDS and their risky sexual behavior. This suggests that although providing accurate information to college students is an essential first step in fighting the spread of HIV/AIDS, behavior change interventions are necessary to supplement knowledge of the disease. Such interventions should boost personal concern and perceived risk of contracting HIV in order to motivate individuals to practice "safer sex". It has also been proposed that successful interventions have to teach necessary behavioral and social skills needed for behavior change (Fisher and Misovich, 1990). One way to develop these skills is through role playing exercises. Allowing students to rehearse ways of handling stressful situations regarding "safe sex" and other self-protective behaviors may help them deal with real life circumstances.

Differences were found between males and females in almost every variable examined. For instance, females reported that they would take part in significantly less risky behavior practices. According to McCormack et al. (1993), one reason for this is due to traditional sex-role socialization. McCormack and her associates assert that despite advances in contraception
and a movement toward gender equality, women are still socialized to confine sexual activity to emotional relationships. On the other hand, men are socialized to enjoy their sexuality and pursue sexual relations with multiple partners. Another explanation why females exercise more caution in sexual relationships could be due to a fear of pregnancy. This fear may cause more anxiety for females since they would be more affected physically and emotionally if the relationship with the sex partner fails.

Gender differences were also found in regard to attitudes toward persons with HIV/AIDS, support for policies constraining persons with HIV/AIDS, and support for humane social policies. Respectively, females had more humane attitudes toward those with HIV/AIDS, less support for policies constraining persons with HIV/AIDS, and more support for humane social policies. One possibility as to why males are less accepting of those with HIV/AIDS is that they may be more homophobic than females, and associate homosexuality with HIV/AIDS. For instance, nearly 22 percent of males and only 6 percent of females in the sample agreed with the statement “Those who acquire the AIDS virus through homosexual acts deserve it.” This difference was significant at less than .001 (chi-square= 33.69, df=1). In their sample of 353 college students, Young, Gallaher, and Marriott (1993) also found that males displayed more homophobic tendencies than females.

The differences between males and females are addressed more broadly by the symbolic interaction paradigm. In this view, gender reflects society's definitions of the “essential natures” of the sexes (Goffman, 1977). Furthermore, gender roles are defined in terms of their contrasts or polarization.
(Burke, 1989). Goffman (1977) adds that these gender definitions have the effect of socializing males and females, and permeate most social interactions.

Examples of typical gender contrasts discussed by Burke (1989) include the assumptions that females are more nurturant whereas males are more competitive and females are emotional, whereas males are more rational. The socialization of these notions may explain why females have more compassion for those with HIV/AIDS. It can also help explain why attitudes toward persons with HIV/AIDS were found to be more important when predicting females' HIV/AIDS policy preferences, whereas transmission knowledge was more important when predicting the policy preferences of males. Research also suggests that females rely more than males on their interaction with others. According to Gilligan (1990, p. 59), relationships are at the center of female morals, whereas male relationships are more instable and impersonal. This contrast can help explain why personally knowing someone with HIV/AIDS was associated with more humane HIV/AIDS attitudes for females only.

Given the numerous differences between males and females found throughout this study, it is recommended that further research take gender into consideration as a predictor of HIV/AIDS behavior and attitudes. Furthermore, education and prevention programs must be sensitive to gender differences when providing HIV/AIDS information and guidance.
METHODOLOGICAL CONSIDERATIONS

While this study has identified intriguing associations among HIV/AIDS knowledge, attitudes, behavior, and policy preferences, there are limitations in the research design that restrict the generalizability of the findings. Foremost, since it was conducted on a single college campus that is known for having a homogenous student population, these observations need to be tested through similar survey instruments in other college populations. Furthermore, even though the sample was comparable to the university population, use of a non-random sample makes generalizing to the entire population tenuous.

Secondly, the scales measuring HIV/AIDS transmission knowledge, attitudes toward persons with HIV/AIDS, and risky behavior lacked variance. Since the majority of students had a high knowledge, indicated humane attitudes and reported low risky behavior, it is difficult to identify solid differences in these variables by each of the independents. As students learn more about HIV/AIDS and how it is transmitted, more precise scales are needed to measure this knowledge. More detailed and multi-dimensional scales would be beneficial in identifying differences in students’ attitudes and behaviors.

Finally, the cross-sectional design of this study is insensitive to changes in students’ attitudes and behaviors over time, and lacks a sufficient control group. Longitudinal studies are needed to determine not only the proportion of students who adopt humane attitudes and HIV-preventive behaviors, but perhaps more importantly, to identify those who maintain these attitudes and behaviors over time. In addition, studies with true experimental designs are needed in order to assess how well different HIV/AIDS education and
prevention programs provide information and motivate “safer sex” practices in college students.
### Table 1. Gender Differences in Knowledge, Attitudes, Behavior, and Policy Preferences

<table>
<thead>
<tr>
<th>Scale or Item</th>
<th>Male (N=278)</th>
<th>Female (N=328)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Knowledge</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall (0-11 scale mean)</td>
<td>7.88</td>
<td>8.19</td>
<td>ns</td>
</tr>
<tr>
<td>Transmission (0-9 scale mean)</td>
<td>5.43</td>
<td>5.66</td>
<td>ns</td>
</tr>
<tr>
<td>Casual Transmission (0-5 scale mean)</td>
<td>3.26</td>
<td>3.45</td>
<td>ns</td>
</tr>
<tr>
<td><strong>Attitudes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Would object to someone with HIV/AIDS moving into neighborhood.</td>
<td>3.3%</td>
<td>2.2%</td>
<td>ns</td>
</tr>
<tr>
<td>2. Would feel uncomfortable with person having HIV/AIDS in same town.</td>
<td>4.1</td>
<td>3.2</td>
<td>ns</td>
</tr>
<tr>
<td>3. Would feel uncomfortable in room alone with someone having HIV/AIDS.</td>
<td>21.6</td>
<td>15.1</td>
<td>.04</td>
</tr>
<tr>
<td>4. Would invite someone with HIV/AIDS to dinner.</td>
<td>74.3</td>
<td>85.8</td>
<td>.001</td>
</tr>
<tr>
<td>5. Feels uncomfortable being around someone with HIV/AIDS.</td>
<td>34.6</td>
<td>22.1</td>
<td>.001</td>
</tr>
<tr>
<td>6. Would share house or apartment with someone having HIV/AIDS.</td>
<td>38.3</td>
<td>56.2</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Risky Behavior</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Would have unprotected sex with someone believed to be promiscuous.</td>
<td>4.8%</td>
<td>3.2%</td>
<td>ns</td>
</tr>
<tr>
<td>2. Insists on using some sort of protection during sex.</td>
<td>69.1</td>
<td>79.5</td>
<td>.004</td>
</tr>
<tr>
<td>3. Would have sex without protection if they know partner's history</td>
<td>43.1</td>
<td>34.1</td>
<td>.02</td>
</tr>
<tr>
<td>4. Insists on an AIDS test from partners.</td>
<td>23.0</td>
<td>37.9</td>
<td>.001</td>
</tr>
<tr>
<td><strong>Policies Constraining Persons With HIV/AIDS (Likert item means)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Doctors should be required to report names of HIV/AIDS patients.</td>
<td>1.71</td>
<td>1.61</td>
<td>ns</td>
</tr>
<tr>
<td>2. Insurance companies should be permitted to test applicants for HIV.</td>
<td>1.97</td>
<td>1.65</td>
<td>.001</td>
</tr>
<tr>
<td>3. All persons with HIV/AIDS should be required to wear identity tags.</td>
<td>0.85</td>
<td>0.61</td>
<td>.003</td>
</tr>
<tr>
<td>4. Individuals with HIV/AIDS should have a separate place to live.</td>
<td>1.14</td>
<td>0.75</td>
<td>.001</td>
</tr>
<tr>
<td>5. People with HIV/AIDS should have the same right to privacy as everyone.</td>
<td>1.15</td>
<td>0.86</td>
<td>.001</td>
</tr>
<tr>
<td><strong>HIV/AIDS Social Policies (Likert item means)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Should increase availability of experimental drugs to those with HIV/AIDS.</td>
<td>3.08</td>
<td>3.13</td>
<td>ns</td>
</tr>
<tr>
<td>2. Government should supply free condoms to students in high school.</td>
<td>2.74</td>
<td>2.97</td>
<td>.03</td>
</tr>
<tr>
<td>3. Government should pay all health care costs of HIV/AIDS patients.</td>
<td>1.20</td>
<td>1.40</td>
<td>.02</td>
</tr>
<tr>
<td>4. There should be an increase in government funds for HIV/AIDS research.</td>
<td>2.95</td>
<td>3.25</td>
<td>.001</td>
</tr>
<tr>
<td>5. More money should be provided for HIV/AIDS education in public schools.</td>
<td>3.02</td>
<td>3.28</td>
<td>.001</td>
</tr>
</tbody>
</table>

Note: significance levels less than .001 are reported as .001
### Table 2. Gender and Attitudes Toward Persons With HIV/AIDS

<table>
<thead>
<tr>
<th>HIV/AIDS Attitudes</th>
<th>Gender</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Female</td>
<td>Male</td>
</tr>
<tr>
<td>Least Humane</td>
<td>50.8%</td>
<td>69.9%</td>
</tr>
<tr>
<td>Most Humane</td>
<td>49.2</td>
<td>30.1</td>
</tr>
<tr>
<td>Total</td>
<td>54.1 (317)</td>
<td>45.9 (269)</td>
</tr>
</tbody>
</table>

$\chi^2 = 22.04, \ df = 1, p < .001, \ phi = .19$

### Table 3. Knowing Person(s) With HIV/AIDS and Attitudes Toward Persons With HIV/AIDS (Females Only)

<table>
<thead>
<tr>
<th>HIV/AIDS Attitudes</th>
<th>Relation to Person(s) with HIV/AIDS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Don't Know Anyone</td>
<td>Relative/Friend/Acquaintance</td>
</tr>
<tr>
<td>Least Humane</td>
<td>62.2%</td>
<td>27.7%</td>
</tr>
<tr>
<td>Most Humane</td>
<td>37.8</td>
<td>72.3</td>
</tr>
<tr>
<td>Total</td>
<td>54.1 (111)</td>
<td>45.9 (94)</td>
</tr>
</tbody>
</table>

$\chi^2 = 24.37, \ df = 1, p < .001, \ phi = .34$
### Table 4. Total Years of Education and Attitudes Toward Persons With HIV/AIDS (Females Only)

<table>
<thead>
<tr>
<th>HIV/AIDS Attitudes</th>
<th>Total Education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3 Years</td>
<td>4 or More Years</td>
</tr>
<tr>
<td>Least Humane</td>
<td>57.0%</td>
<td>30.7%</td>
</tr>
<tr>
<td>Most Humane</td>
<td>43.0</td>
<td>69.3</td>
</tr>
<tr>
<td>Total</td>
<td>76.3 (242)</td>
<td>23.7 (75)</td>
</tr>
</tbody>
</table>

chi square = 15.91, df=1, p<.001, phi = .22

### Table 5. Logistic Regression Results Predicting Attitudes Toward Persons With HIV/AIDS

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Regression Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Wald</td>
</tr>
<tr>
<td>HIV/AIDS Transmission Knowledge</td>
<td>25.366</td>
</tr>
<tr>
<td>Gender</td>
<td>18.026</td>
</tr>
<tr>
<td>Total Education</td>
<td>11.415</td>
</tr>
<tr>
<td>Age</td>
<td>1.723</td>
</tr>
<tr>
<td>Risky Behavior</td>
<td>.316</td>
</tr>
</tbody>
</table>

Model chi-square= 59.791, p<.001, Logit $R^2$ = .0765, n=579

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Table 6. Regression Results Predicting Support for Policies Constraining Those With HIV/AIDS, Support for Humane Social Policies, and HIV/AIDS Risk Behaviors

<table>
<thead>
<tr>
<th>Regression Components</th>
<th>β</th>
<th>Significance of t</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risky Behavior</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV/AIDS Transmission Knowledge</td>
<td>-.033</td>
<td>.438</td>
</tr>
<tr>
<td>AIDS Attitude</td>
<td>-.023</td>
<td>.593</td>
</tr>
<tr>
<td>Gender</td>
<td>.177</td>
<td>.001</td>
</tr>
<tr>
<td>Age</td>
<td>-.015</td>
<td>.731</td>
</tr>
<tr>
<td>Total Education</td>
<td>.072</td>
<td>.102</td>
</tr>
<tr>
<td>Adjusted R² (N)</td>
<td>.040</td>
<td>(573)</td>
</tr>
</tbody>
</table>

- Gender was the only variable with a significant effect on risky behavior. In the sample, being male is associated with more reported acts of risky behavior.

<table>
<thead>
<tr>
<th><strong>Support for Policies Constraining Those with HIV/AIDS</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV/AIDS Transmission Knowledge</td>
<td>-.183</td>
<td>.001</td>
</tr>
<tr>
<td>AIDS Attitude</td>
<td>-.313</td>
<td>.001</td>
</tr>
<tr>
<td>Gender</td>
<td>.123</td>
<td>.002</td>
</tr>
<tr>
<td>Risky Behavior</td>
<td>-.069</td>
<td>.079</td>
</tr>
<tr>
<td>Age</td>
<td>.051</td>
<td>.218</td>
</tr>
<tr>
<td>Total Education</td>
<td>-.012</td>
<td>.782</td>
</tr>
<tr>
<td>Adjusted R² (N)</td>
<td>.182</td>
<td>(548)</td>
</tr>
</tbody>
</table>

- HIV/AIDS attitudes was the strongest predictor followed by HIV/AIDS transmission knowledge and gender. These findings indicate that those with least humane HIV/AIDS attitudes, lower transmission knowledge of HIV/AIDS and males have higher support for policies constraining persons with HIV/AIDS.

<table>
<thead>
<tr>
<th><strong>Support for Humane Social Policies</strong></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV/AIDS Transmission Knowledge</td>
<td>.117</td>
<td>.005</td>
</tr>
<tr>
<td>AIDS Attitude</td>
<td>.158</td>
<td>.001</td>
</tr>
<tr>
<td>Gender</td>
<td>-.130</td>
<td>.002</td>
</tr>
<tr>
<td>Risky Behavior</td>
<td>.075</td>
<td>.075</td>
</tr>
<tr>
<td>Age</td>
<td>.056</td>
<td>.206</td>
</tr>
<tr>
<td>Total Education</td>
<td>-.030</td>
<td>.497</td>
</tr>
<tr>
<td>Adjusted R² (N)</td>
<td>.075</td>
<td>(551)</td>
</tr>
</tbody>
</table>

- HIV/AIDS attitudes, HIV/AIDS transmission knowledge, and gender were the only significant predictors of support for humane social policies. Results indicate that those with most humane HIV/AIDS attitudes, higher HIV/AIDS transmission knowledge, and females have higher support for humane social policies.

NOTE: significance levels less than .001 are reported as .001

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Figure 1a. Path Model Predicting Support for Policies Constraining Those With HIU/AIDS (Females Only)

- HIU/AIDS Attitudes → Support for Policies Constraining Those With HIU/AIDS
- HIU/AIDS Transmission Knowledge → HIU/AIDS Attitudes
- HIU/AIDS Transmission Knowledge → Support for Policies Constraining Those With HIU/AIDS

Coefficients:
- .2459***
- .3444***
- .3792***
- .2399***
- .1613***

*p<.05
**p<.01
***p<.001
NS= Not Significant at .05 level

Figure 1b. Path Model Predicting Support for Policies Constraining Those With HIU/AIDS (Males Only)

- HIU/AIDS Attitudes → Support for Policies Constraining Those With HIU/AIDS
- HIU/AIDS Transmission Knowledge → HIU/AIDS Attitudes
- HIU/AIDS Transmission Knowledge → Support for Policies Constraining Those With HIU/AIDS

Coefficients:
- .1590**
- .2891***
- .3269***
- .2562***
- .2106***

*p<.05
**p<.01
***p<.001
NS= Not Significant at .05 level
Figure 2a. Path Model Predicting Support for Humane Social Policies (Females Only)

Figure 2b. Path Model Predicting Support for Humane Social Policies (Males Only)

*p<.05  
**p<.01  
***p<.001  
NS- Not Significant at .05 level

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### Appendix R. Indicators of HIV-related Knowledge: LeBlanc and the Present Study (Percent Correct Indicated)

<table>
<thead>
<tr>
<th>Item</th>
<th>LeBlanc</th>
<th>Present</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. How likely do you think it is that a person will get the AIDS virus from using public toilets? (i)</td>
<td>18.7%</td>
<td>45.9%</td>
</tr>
<tr>
<td>2. How likely do you think it is that a person will get the AIDS virus from being coughed or sneezed on by someone who has AIDS? (h,i)</td>
<td>35.9</td>
<td>94.6</td>
</tr>
<tr>
<td>3. How likely do you think it is of getting the AIDS virus from kissing a person who has AIDS? (h,i)</td>
<td>N/A</td>
<td>76.5</td>
</tr>
<tr>
<td>4. How likely do you think it is that a person will get the AIDS virus from living near a hospital or home for AIDS patients? (i)</td>
<td>40.7</td>
<td>71.7</td>
</tr>
<tr>
<td>5. How likely do you think it is that a person will get the AIDS virus from working near someone with AIDS? (i)</td>
<td>25.9</td>
<td>47.7</td>
</tr>
<tr>
<td>6. Any person with the AIDS virus can pass it on to someone else during sexual intercourse. (a)</td>
<td>78.9</td>
<td>85.2</td>
</tr>
<tr>
<td>7. How likely do you think it is that a person will get the AIDS virus from having sex with a person with AIDS? (e,f)</td>
<td>97.7</td>
<td>98.8</td>
</tr>
<tr>
<td>8. How likely do you think it is that a person will get the AIDS virus from donating/giving blood? (i)</td>
<td>24.1</td>
<td>25.0</td>
</tr>
<tr>
<td>9. How likely do you think it is that a person will get the AIDS virus from sharing needles for drug use with someone who has AIDS? (e)</td>
<td>92.2</td>
<td>95.4</td>
</tr>
<tr>
<td>10. A person can be infected with the AIDS virus and not have the disease AIDS. (a)</td>
<td>53.7</td>
<td>73.2</td>
</tr>
<tr>
<td>11. You can tell if people have the AIDS virus just by looking at them. (d)</td>
<td>69.1</td>
<td>90.2</td>
</tr>
</tbody>
</table>

**Response alternatives:** For items 6,10,11: a=definitely true b=probably true c=probably false d=definitely false; For items 1-5,7-9: e=very likely f=somewhat likely g=somewhat unlikely h=very unlikely i=definitely not possible
### Appendix B. Social Distance Attitude Scale Items

<table>
<thead>
<tr>
<th>Item</th>
<th>% Inhumane</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I would object to someone with the AIDS virus moving into my neighborhood.</td>
<td>2.7</td>
</tr>
<tr>
<td>2. I would feel uncomfortable knowing that someone with the AIDS virus lived in the same town.</td>
<td>3.6</td>
</tr>
<tr>
<td>3. I would feel uncomfortable in a room alone with someone who has the AIDS virus.</td>
<td>18.0</td>
</tr>
<tr>
<td>4. I would invite someone with the AIDS virus to dinner.</td>
<td>19.3</td>
</tr>
<tr>
<td>5. Being around people with the AIDS virus makes me uncomfortable.</td>
<td>27.6</td>
</tr>
<tr>
<td>6. I would share a house or apartment with someone who had the AIDS virus.</td>
<td>51.7</td>
</tr>
</tbody>
</table>

### Appendix C. Risky Behavior Scale Items

<table>
<thead>
<tr>
<th>Item</th>
<th>% Risky</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I would have unprotected sex with someone I believed to be promiscuous.</td>
<td>3.9</td>
</tr>
<tr>
<td>2. I insist on using some sort of protection during sexual intercourse.</td>
<td>25.1</td>
</tr>
<tr>
<td>3. I would have sex without protection with someone as long as I knew their history.</td>
<td>38.0</td>
</tr>
<tr>
<td>4. I insist on an AIDS test from people with whom I have sexual relations.</td>
<td>68.5</td>
</tr>
</tbody>
</table>
Appendix D. Items Indicating Support for Policies Constraining Those With HIV/AIDS

1. Doctors should be required to report to the government the names of patients who have the virus that causes AIDS.

2. Insurance companies should be permitted to test applicants for the AIDS virus.

3. All persons who have the virus that causes AIDS should be required to wear identity tags warning that they have the virus.

4. Individuals with the AIDS virus should have a separate place to live.

5. People with the AIDS virus should have the same right to privacy as everyone else.

Appendix E. Items Reflecting Support for Humane Social Policies

1. The government should increase the availability of experimental drugs to people with the AIDS virus.

2. The government should supply free condoms to students in high school.

3. The government should pay all health care costs of AIDS patients.

4. There should be an increase in government funds for AIDS research.

5. There should be more money provided for AIDS education in the public school system.
REFERENCES


Gilligan, Carol. 1982. *In a Different Voice* Harvard University Press.


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