

COLLEGE STUDENTS' RESPONSES TO THE HAAQ
(HUMAN IMMUNODEFICIENCY VIRUS/ACQUIRED
IMMUNE DEFICIENCY SYNDROME AWARENESS QUESTIONNAIRE)

A THESIS
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COLLEGE OF HEALTH SCIENCES

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To the Associate Vice President for Research and Dean of
the Graduate School:

I am submitting herewith a thesis written by Suzanne Mason
entitled "College Students' Responses to the HAAQ (Human
Immunodeficiency Virus/Acquired Immune Deficiency Syndrome
Awareness Questionnaire)." I have examined the final copy
of this thesis for form and content and recommend that it
be accepted in partial fulfillment of the requirements for
the degree of M. S., with a major in Health Studies.

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DEDICATION

This thesis is dedicated to the memory of Timothy Vaughan (b. April 24, 1961 - d. Dec. 21, 1988).

Tim died of complications due to AIDS, and from massive head injuries sustained in an automobile accident one year after his AIDS diagnosis. He was an outrageously funny, sweet-natured man, and a playful, young soul. Tim was, and always will be, one of my most dear, cherished friends.

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Abstract

COMPLETED RESEARCH IN HEALTH SCIENCES
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Mason, S. College Students' Responses to the HAAQ (Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome Awareness Questionnaire). M. S. in Health Studies, 1993, 73 pp. (R. Tandy)

The purpose of this study was to revise an existing AIDS awareness instrument, to determine its validity and test its reliability, and to use it to measure HIV/AIDS awareness of Texas Woman's University undergraduate students. The revised test, the Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome Awareness Questionnaire (HAAQ), was determined to be valid by a panel of experts. Reliability coefficient was .88 using Cronbach's Alpha. Analysis of data obtained from 231 subjects queried as to HIV/AIDS-related knowledge, attitudes, and behaviors indicated that a "high percentage" of respondents, ranging from 73.5% to 87.2%, answered correctly the knowledge items. Attitudes varied: they ranged from 67.5% to 93.5% positive responses. Behaviors did not reflect the responses indicated in the knowledge and attitude sections in regard to perceived risk; in some cases, they were in direct contradiction.

TABLE OF CONTENTS

| | Page |
|--|------|
| DEDICATION | iii |
| ACKNOWLEDGEMENTS | iv |
| ABSTRACT | vi |
| LIST OF TABLES | ix |
| CHAPTER | |
| I. INTRODUCTION | 1 |
| Statement of the Problem. | 3 |
| Purpose of the Study. | 4 |
| Research Questions. | 4 |
| Definitions | 4 |
| Limitation | 5 |
| Delimitations | 6 |
| Assumptions | 6 |
| Justification | 6 |
| II. REVIEW OF LITERATURE | 8 |
| HIV/AIDS Impact | 8 |
| Implications for American Colleges and Universities | 12 |
| III. METHODOLOGY. | 17 |
| Population. | 17 |
| Procedures. | 18 |
| Instrumentation | 20 |
| Treatment of Data | 25 |
| IV. DATA ANALYSIS. | 26 |
| V. SUMMARY, FINDINGS, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS | 45 |
| Findings. | 45 |
| Discussion. | 48 |
| Conclusion. | 56 |
| Recommendations | 56 |

| | Page |
|--|------|
| REFERENCES | 58 |
| APPENDICES | |
| A. Letter of Permission to Conduct the Study. | 62 |
| B. Cover Letter. | 64 |
| C. The HIV/AIDS Awareness Questionnaire. | 66 |

LIST OF TABLES

| Table | Page |
|--|------|
| 1. Distribution of Subjects' Marital Status . . . | 28 |
| 2. Distribution of Subjects' Ethnicity. | 28 |
| 3. Subjects' Reported Exposure to HIV/AIDS Source Data. | 30 |
| 4. Subjects' Correct Knowledge About HIV/AIDS . . | 31 |
| 5. Subjects' Reported Attitudes Related to HIV/AIDS | 33 |
| 6. Subjects' Reported Behaviors Related to HIV/AIDS | 34 |
| 7. Subjects' Reported Number of Sexual Partners Since 1979 | 35 |
| 8. Subjects' Sexual Partners' Reported Number of Partners. | 36 |
| 9. Subjects' Reported Number of HIV Positive Sexual Partners. | 37 |
| 10. Subjects' Reported Sexual Partners Who Use Injected Drugs | 37 |
| 11. Subjects' Reported Injecting Drug Use. | 38 |
| 12. Subjects' Reported Use of Shared Drug Equipment. | 39 |
| 13. Subjects' Reported Sexually Transmitted Diseases | 39 |
| 14. Subjects' Reported Risk of HIV/AIDS Infection. | 40 |
| 15. Subjects' Reported HIV Status. | 41 |

| Table | Page |
|--|------|
| 16. Subjects' Reported Blood Transfusion(s), 1979-1985. | 41 |
| 17. Subjects' Other Reported Sources of HIV/AIDS Information. | 42 |
| 18. Top Six Items - Unsolicited Comments by Subjects | 44 |

CHAPTER I

INTRODUCTION

As of March 1992, an estimated 1 million people--1 in every 100 adult males and 1 in every 800 adult females--were infected with human immunodeficiency virus (HIV) in the United States (Public Health Reports, 1992). Acquired immune deficiency syndrome (AIDS) has claimed at least 150,000 lives in the U.S. and continues to climb in rank as one of the leading causes of premature death among men and women in the U.S. and throughout the world (Quinn, 1992).

The number of persons who know someone with AIDS has almost doubled since 1987, according to Blendon, Donelan and Knox (1992). Still, they and others (Cline & Engel, 1991; Fennell, 1990; Keeling, 1991) caution that the majority of Americans perceive their personal risk of infection to be low or nonexistent, and that myths about the disease and discrimination against HIV/AIDS-infected persons continue to persist. College students are no exception, especially in light of their propensity for multiple sexual partners, sexual experimentation, alcohol and substance abuse, inaccurate self-assessment of risk (Fennell, 1991; Keeling, 1991) and low condom usage (Butcher, Manning & O'Neal,

(1991).

Increasingly, women, children, and minorities, particularly those in the inner cities where financial resources and medical care access are severely limited, are the most impacted segments of the population for HIV/AIDS (Quinn, 1992). In 1990, HIV/AIDS became one of the top 10 leading causes of death in Texas for the first time (Texas Department of Health [TDH], 1991). In October 1992, 17,101 cases of AIDS were confirmed in Texas, 250 of those among women versus 2,703 cases among males (TDH, 1992). In comparison, in October 1992, the Centers for Disease Control (CDC) reported an estimated 253,000 cases of AIDS in the United States. AIDS is now the sixth leading cause of death among all women in the U.S. (CDC, 1993).

As medical and scientific advances in the treatment and understanding of HIV/AIDS has progressed, the instruments designed to collect and evaluate the knowledge, attitudes, and behaviors (KABs) of persons at risk, or at-large, have not always kept pace with such advances. Nor has Texas Woman's University (TWU), a primarily woman's institution with a high minority population, surveyed its student population for HIV/AIDS-related knowledge, attitudes, or behaviors except for a pilot study by Brown (1989).

Education theories for combatting HIV/AIDS transmission are shifting from information dissemination alone to social learning theories (Dallas County Health Department, 1992; Keeling, 1991), which incorporate peer reinforcement of new behavior and supportive community norms. Without assessing current HIV/AIDS-related knowledge, attitudes, and behaviors of TWU students, present and future risk-reduction and educational programming may remain well-intentioned yet scientifically untested. The latter is necessary to insure satisfactory validity, reliability, and efficacy of such programs. Thus, a revised instrument to be used to survey TWU students' HIV/AIDS-related KABS is both appropriate and necessary.

Statement of the Problem

The problem of the study was to revise the pre-existing AIDS Awareness Questionnaire (Brown, 1989) to improve its content validity in light of current information. The reliability of the revised instrument, the HIV/AIDS Awareness Questionnaire (HAAQ), was also determined. The HAAQ was administered to a random sample of undergraduate students at Texas Woman's University in spring 1992 to determine their HIV/AIDS-related knowledge, attitudes, and

behaviors.

Purpose of the Study

The purpose of the study was to revise an existing instrument, the AIDS Awareness Questionnaire, and to determine its validity and test its reliability. The revised test was used to measure HIV/AIDS awareness of TWU undergraduate students.

Research Questions

The following research questions were answered through analyses in the study:

1. Is the HIV/AIDS Awareness Questionnaire valid?
2. Is the HIV/AIDS Awareness Questionnaire reliable?
3. As related to HIV/AIDS, (a) what are university students' levels of knowledge; (b) what are their attitudes; and (c) what are their behaviors?

Definition of Terms

For the purpose of this study, the following terms were defined:

1. Attitudes. "Relatively lasting clusters of feelings, beliefs, and behavior tendencies directed toward

specific persons, groups, ideas, or objects" (Baron & Byrne, 1981, p. 91).

2. Behavior (Volitional). "That which is conscious, is willed and purposive, and is an expression of one's intentions" (Bower & Hilgard, 1981, p. 254).

3. Human Immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS). "The virus and secondary immunodeficiency syndrome which it causes, characterized by severe immune deficiency which results in progressive illness, opportunistic infections, malignancies, and/or neurologic lesions in individuals without prior history of immunologic abnormality" (Berkow & Fletcher, 1987, p. 288).

4. HIV/AIDS Awareness. Having or showing realization, or perception of HIV/AIDS (Merriam-Webster's, 1990), as measured by the HIV/AIDS Awareness Questionnaire.

5. Knowledge. Conceptual understanding of information as measured by the HIV/AIDS Awareness Questionnaire.

Limitation

This study was subject to the following limitation:

1. The sample population surveyed may not be representative of TWU undergraduate students.

Delimitations

This study was subject to the following delimitations:

1. Only undergraduate students enrolled for the 1992 spring semester at TWU in Denton were studied.
2. The HIV/AIDS Awareness Questionnaire was used as the measure of the students' HIV/AIDS-related knowledge, attitudes, and behaviors.

Assumptions

This study was subject to the following assumptions:

1. The level of reading comprehension of subjects did not affect the accuracy of responses.
2. All subjects had developed a basic level of AIDS awareness.
3. HIV/AIDS remained deadly and transmittable during the course of the study, precluding any medical or pharmacological breakthrough.
4. Experience of completing the survey itself did not influence reporting of actual behaviors.

Justification

In the absence of a cure or a vaccine, education (i.e., primary prevention) is the most effective measure to prevent

the spread of HIV/AIDS. This includes the assessment of college students' HIV/AIDS-related knowledge, attitudes, and behaviors, as well as activities by institutions to protect their students and employees from unreasonable risks of exposure or transmission of the virus (Keeling, 1989).

Where health education fails to conduct the necessary research to guide the design and development of educational materials, the distribution of materials that appear to meet educational needs may not do so at all (Prewitt, 1989). This is of paramount importance as researchers generally have agreed that college students in particular are behaviorally at risk for HIV/AIDS (Fennell, 1991; Keeling, 1989). This risk has been found to be related to their high levels of sexual experimentation, including multiple partners, coupled with substance abuse (Koop, 1986; McDermott, Hawkins, Moore, & Cittadino, 1987; U.S. Dept. of Health and Human Services [USDHHS], 1988). Therefore, the development of instruments to assess the learning needs of college students in regard to HIV/AIDS knowledge, attitudes, and behaviors is a legitimate concern of health educators (Brown, 1989).

CHAPTER II

REVIEW OF LITERATURE

The review of literature in this chapter will address the impact of HIV/AIDS and the parallel implications for American colleges and universities. Despite numerous medical advances and other scientific discoveries, the outlook remains grim.

HIV/AIDS Impact

More than one decade after the introduction of HIV/AIDS into the United States, the devastation continues. HIV/AIDS is now ranked ninth in the leading causes of all deaths in the United States (CDC, Dec., 1992). HIV/AIDS also became the number one cause of death among men ages 25-44 in many cities across the nation (CDC, Dec., 1992). Some 58,000 persons were diagnosed with AIDS in 1991 (American Health Consultants [AHC], Feb., 1993). Reported deaths from HIV/AIDS rose 24% in 1990-1991, compared to a 13% increase recorded in 1989-1990 (CDC, Dec., 1992).

True to the CDC's forecast (1991) that the second decade would be far worse than the first, both the actual data reported and the projections continue in a vicious upward spiral. On January 1, 1993, the CDC adopted a new

surveillance case definition, providing for greater access of public social and health services to a larger number of persons. This revision allows for an AIDS diagnosis for HIV-infected persons who have a CD4 count below 200, or a CD4 percentage of total lymphocytes below 14% (AHC, Feb., 1993). Pulmonary tuberculosis, recurrent pneumonia, and invasive cervical cancer also were included in the new definition, thus bringing the number of AIDS-defining illnesses to 23 (AHC, Feb., 1993).

On January 14, 1993, the CDC in an AIDS surveillance projection, estimated that as many as one-half million Americans will have AIDS, and as many as three-fifths of them will have died by 1995 (AHC, Feb., 1993):

The findings are confirmation of the current trends in the epidemic, namely that that rate is climbing faster among heterosexuals, minorities, and women, and slowing among male homosexuals. (p. 1)

Based on the new AIDS definition, the number of new AIDS cases diagnosed annually in the United States is expected to increase to 90,000 - 100,000 through 1994; using the old definition, this figure would account for only 60,000 to 70,000 cases. In 1991, the rate of growth was estimated at 10% (AHC, Feb., 1993).

Heterosexual transmission is increasingly accounting for a larger percent of diagnosed HIV/AIDS cases, as reported in AIDS Alert Special Report (AHC, Feb., 1993): "The rate of increase for HIV transmission from heterosexual contact will be greater in the next two years than either transmission from injected-drug use or male homosexual (or) bisexual contact." (p. 2-3). Cases among men and women will increase, while perinatally-acquired AIDS cases and childrens' cases in general are expected to slow from the 1990 rate (AHC, Feb., 1993). Still, while the HIV incidence rates among the gay male population appear to have peaked, gender and race continue to influence who is affected disproportionately:

Cumulative totals by sex through 1994 estimate that from 365,000 to 465,000 men and from 55,000 to 75,000 woman will have acquired AIDS. More than half the reported cases of AIDS estimated through 1994 will come from blacks when compared to whites. Cases reported among Hispanics through 1994 are estimated at 75,000 to 95,000. (AHC, Feb., 1993, p. 3).

The impact of the AIDS epidemic on minority populations is devastatingly apparent. The rate of AIDS diagnosis is three times higher for blacks as compared to whites, with most

cases transmitted heterosexually:

The AIDS epidemic has impacted communities of color with special fury, converging as it has with the turbulent effects of poverty, poor access to health care, and the twin epidemic of substance abuse.

(AHC, Feb., 1993, p. 3)

In a report issued to Congress and the White House last January (AHC, Feb., 1993), the National Commission on AIDS concludes that "HIV prevention programs will fail (in minority populations) if they are based solely on factual 'information'" (p. 4). Distrust of whites (including the medical establishment), among communities of color was cited as a leading factor in this conclusion:

The distrust is rooted in histories of discrimination, insufficient regard for the health of people of color, and inappropriate scientific experimentation, such as a recently condemned study involving black men at

Tuskegee University (AHC, Feb., 1993 p. 4)

Other key factors the report cited were the need for improved access to primary health care and the increased involvement of community members in policy and program development.

Implications for American Colleges and Universities

While preventive educational goals have expanded to include all Americans, not just those previously identified as "high-risk groups" (CDC, Feb., 1991), significant and critical gaps in formal preventive health education persist at all educational levels. According to Kerr (cited in Fennell, 1991), only 25 states require HIV education or health education at the secondary level to graduate from high school. Thus, many students matriculate to postsecondary institutions with little, if any, formal HIV/AIDS education (Fennell, 1991). The absence of formal, preventive health education available to high school and college students is particularly reprehensible. In 1991, the CDC reported young Americans as "the hardest hit" of all populations. Later that year, the CDC released data establishing HIV/AIDS as the second leading cause of death among men ages 25-44, and one of the six leading causes of death among women of reproductive ages (15-44).

Sexually transmitted diseases (STDs), HIV/AIDS, and unwanted pregnancies have increased in adolescents in the United States since the 1970s. In fact, 86% of all STDs occur among persons aged 15-29 years (CDC, Jan., 1992). Currently, 2.5 million teenagers are infected each year

with STDs, including HIV. As of spring 1989, more than 18,000 persons aged 20-29 had developed AIDS. Given the average 10 year incubation period, these young people were most likely infected with HIV in their teenage years (CDC, 1991).

Researchers generally agree that college students as a group are not engaging in risk-reducing behaviors related to HIV infection (Fennell, 1991). They also concur that college students as a group are at high risk due to their potential for increased levels of sexual activity with multiple sexual partners, substance abuse, and general experimentation (Koop, 1986; McDermott et al., 1987; USDHHS, 1988). Many studies have shown that college, or university students continue to have misperceptions about HIV/AIDS including: that animals and insects can transmit HIV; that AIDS is a "gay disease"; that homosexuals are to blame; and that young people generally are invulnerable to HIV infection (Fennell, 1991). Earlier in 1989, Fennell studied knowledge, attitudes, and homophobia of college students (n = 344) enrolled in health education classes at a midwestern university. His findings indicated while students demonstrated "a high level" of knowledge about HIV disease prior to AIDS education, they also consistently

missed particular questions. Only 54.7% of the subjects knew that insects did not transmit HIV/AIDS; only 53.8% said HIV/AIDS could not be transmitted through saliva; and only 64% of the students knew some protection against HIV/AIDS was available through the use of condoms. In that same investigation, Fennell found that 90% of the students thought condoms were not needed "when having sex with a friend." In surveying students' attitudes, he discovered that more than 60 percent of the subjects responded that "AIDS should be added to the list of infectious diseases that require quarantine." Homophobia also was found to exist, with males more negative toward homosexuality than female subjects. Students who responded more positively toward homosexuality also were more positive attitudinally toward HIV/AIDS (Fennell, 1989, cited in Fennell, 1991).

In 1991, Butcher, et al. added to the HIV/AIDS literature through their study on HIV-related knowledge, attitudes, and behaviors, and the use of alcohol among 243 students at a southern college. They targeted only young, single, heterosexual students and found that 63% of the subjects reported some exposure to AIDS education (including high school and college programs, television, written material, and/or "other," such as knowing someone with

HIV/AIDS), prior to participating in this study.

Regarding attitudes and knowledge, respondents compared favorably to others in their age group nationally.

The subjects in this study were found to be slightly more knowledgeable than those in the national survey. However, as is true of others in their age range nationally, respondents also "typically" reported they felt it was unlikely that they or someone they knew would contract AIDS. Regarding behavior associated with alcohol, 47% of the men and 57% of the women reported having had sex because they were intoxicated. Most subjects reported changing their behaviors to avoid HIV infection, but they did so primarily by reducing the number of sexual partners. While the majority of students claimed only one sexual partner during the prior month, the study showed each respondent's average number of partners to be almost three during the last year. Only 17% of the sexually active men and 21% of the women said they used condoms during sex. Butcher, et al. (1991) also found that 19% of the men and 33% of the women had had sexual intercourse because "they felt awkward in refusing."

Such studies give evidence to, and underscore the need for formal assessment of college and university students' HIV/AIDS-related knowledge, attitudes, and behaviors. Only

then can truly comprehensive, research-based education programs, expressly designed to address HIV/AIDS, be developed, implemented, and evaluated. Ideally, where reinforced and sustained by supporting social systems, these programs would result in voluntary behavior modification.

CHAPTER III

METHODOLOGY

The methodology used in this experimental study is discussed as follows: The population studied, the procedures used to sample the population, and the instrument used to measure the variables. In addition, the method of data treatment is indicated.

Population

The population was comprised of 500 undergraduate students who were enrolled during the 1992 spring semester at the Denton campus of Texas Woman's University. Five hundred subjects for this study were selected by use of a computerized random number generator table by TWU's Office for Institutional Research and Statistics. The sample consisted of 231 students who participated in the study by responding to and returning the mailed survey instrument.

Gender was not delimited for this study. Historically, TWU's student enrollment has been limited to women since its establishment in 1901 as the Girls Industrial College. However, in 1972, through the Public Health Services Act and the provisions of Title IX of the Education Amendment,

qualified men as well as women became eligible for admission to the Institute of Health Sciences, and to all programs offered at the graduate level.

Procedures

Permission to survey subjects was sought.. The TWU Human Subjects Review Committee granted approval (see Appendix A). To survey subjects' HIV/AIDS-related knowledge, attitudes, and behaviors, an existing instrument was revised and pretested. The pretest was conducted among six work-study students at The University of Texas at Arlington (UTA), the researcher's place of employment. Two of the six students were foreign nationals. All six have knowledge of HIV antibodies testing procedures as performed at the worksite, but their personal knowledge, attitudes, and behaviors towards HIV/AIDS were unknown. All of these students worked in the UTA Health Center in fall 1992. They assisted students with check-in, answered general questions, and performed clerical duties. None had direct HIV/AIDS patient/client contact. As a result of pretesting, additional revisions were made in the instrument, principally to improve clarity of the text and the graphic design of the concluding section.

In early April 1992, a cover letter (see Appendix B), a copy of the revised instrument (see Appendix C), and a self-addressed, stamped return envelope, was sent to all subjects by U.S. Mail (first class). The original plan was to allow 10 days after the mailing date for responses to be received, after which replacement mailings would have been sent to new subjects (randomly selected from a second master list), and all returns would have to have been received within 15 days of the replacement mail date to be included in this study. However, due to delays in printing and cost-overruns in graphics development, this step was eliminated. To compensate, the number of randomly-selected subjects was increased to 500 from 460, the number which originally was determined to be statistically valid (Krejcie & Morgan, 1970).

An advance press release to announce the study was issued and mailed to the Daily Lasso, the TWU student newspaper. Ideally, such promotion not only would alert the community to the survey but also would increase the likelihood of response. The Lasso editor reported never having received the release, so this opportunity was lost.

Instrumentation

The revised instrument for this study was the HIV/AIDS Awareness Questionnaire (HAAQ), formerly titled the AIDS Awareness Questionnaire (AAQ). The original instrument was developed by TWU's Task Force on AIDS in 1988 and pilot tested with TWU students. Subsequently, it was revised, subjected to a second pilot test, and adopted for use by the U.S. Army MEDDAC HIV/AIDS Team (Brown, 1989). Brown concluded that the AAQ was valid and reliable for the measurement of knowledge, attitudes, and behaviors among sectors of the U.S. Army personnel. In her discussion, Brown compared her sample to college students in general, and inferred that the AAQ would be valid and reliable for use in higher education as well.

In 1992, this researcher revised the AAQ to account for the expanded epidemiological and prevention knowledge then known about HIV/AIDs. The revisions were as follows: Data were reorganized into three distinct sections (knowledge, attitudes, and behaviors); clarity and readability were increased through graphic redesign; and new items were added, including those to collect individual demographic data. Three distinct sections were needed to test expanded prevention knowledge, e.g., "sharing I.V. needles" was

redefined to address injecting drug use (not just intravenous use), as well as to separate items originally combined, which precluded specificity as well as statistical individuation among items. For example: (Would you) "use a condom for intercourse?" was deleted, and three separate, more specific questions were added: (1) (Would you) "use a condom for anal intercourse?"; (2) "use a condom for oral sex?"; and (3) "use a condom for penile-vaginal intercourse?" The title also was changed from the AIDS Awareness Questionnaire to the HIV/AIDS Awareness Questionnaire (HAAQ), incorporating the spectrum of HIV/AIDS, AIDS being the most severe form of infection (Berkow & Fletcher, 1987).

The design of the HAAQ introduced the reader to the survey with written instructions regarding the instrument and its return. Items to collect demographic data followed and included: age, gender, marital status, and ethnic background. Subjects were asked to respond by filling in the blank space adjacent to each item. Response choices for marital status were: never married, married, separated, divorced, and widowed. Response choices for ethnicity included: Black (Non-Hispanic origin), American Indian or Alaskan native, White (Non-Hispanic origin), Hispanic, Asian

or Pacific Islander, International Non-Resident or Alien (with note to please specify country), and "other" (with note to please specify). Respondents also were queried as to their source(s) of information regarding HIV/AIDS, and were asked to respond (circle "yes" or "no") to each item to indicate whether they had or had not learned of HIV/AIDS from any of the following sources: TV, campus newspaper, family/friends, AIDS hotline, doctors/nurses/health educators, formal classes, HIV/AIDS pamphlets, community newspaper, magazines, and/or workshops/seminars/briefings. The instrument then was divided into sections: A - Knowledge; B - Attitudes; and C - Behaviors. The knowledge section contained 33 questions that addressed transmission factors, condoms use, symptoms, and disease progression and outcome. Respondents indicated their answers by checking either "true," "false," or "don't know." Eleven questions were asked in the attitude section, to which subjects answered either "agree," "disagree," or "uncertain." These questions addressed whether or not a person infected with HIV or AIDS should be quarantined; whether or not pregnant women should be undergo mandatory testing; inquired as to the accuracy of media reports and other information sources; whether or not one would work, or attend class, with an

HIV/AIDS infected person; whether or not the respondent felt he or she was "doing everything possible" to prevent infection; and whether or not the effects of the disease (i.e., psychosocial, medical, legal, etc.) affect us all. There were 28 questions relating to behavior. The scale used was "yes," "no," or "don't know." In this section information was obtained about the frequency of condom use during sex, and during which behaviors (e.g., oral, anal, and penile-vaginal); whether or not one used a dental dam or other barrier for oral sex; whether or not one would have sex with a person (or people) one had just met; whether or not one would use drugs (injecting, "recreational," and alcohol) prior to having sex; whether one would inquire about a partner's prior sexual and drug histories before having sex; whether one would ask a sexual partner to take an HIV test prior to having sex; and whether or not a spermicide was used in addition to wearing a condom. An additional 10 items surveyed included questions about the respondent's self-assessment of risk of contracting HIV/AIDS; whether one had ever tested positive for HIV/AIDS; whether one was the recipient of blood by transfusion between 1979 and 1985; whether one used illegal injected drugs, or shared unclean needles for illegal injected drug

use; whether one had had any sexually transmitted disease(s) in the past five (5) years; and whether one's partner(s) had any of the above.

Some of the items in the HAAQ were written in reverse form to offset patterned response. For example, "I don't believe much of the information reported about HIV/AIDS" (item 39), was scored in reverse.

There were significant numbers of, and substantive changes made in the original (AAQ) instrument. The HAAQ was then subject to validity and reliability testing. An empirically valid and reliable instrument to measure HIV/AIDS-related KABs was one of the purposes of this study.

A goal-directed prevention education program requires some method of needs assessment with regard to preventive education (Brown, 1989). In discussion of the validity and reliability of the AAQ, Brown (1989) noted its potential as one method of assessing the effectiveness of AIDS prevention programs (individually and/or comparatively). The HAAQ, could more accurately reflect the ever-critically needed HIV/AIDS-related KABs, as the instrument includes current medical, behavioral, and social phenomena. The HAAQ was revised 4 years after Brown's (1989) AAQ and 13 years into this pandemic. Like the AAQ (Brown, 1989), the HAAQ could

be used to assess the effectiveness of preventive education programs, individually as well as comparatively.

Treatment of the Data

Demographic characteristics and measures of the subjects HIV/AIDS-related KABs were described using frequencies, percentages, and measures of central tendency. Content validity was established by a panel of experts, and reliability was determined through use of Cronbach's Alpha (SSPS, 1990).

CHAPTER IV

DATA ANALYSIS

The purpose of this investigation was to revise the AAQ and determine the validity and reliability of the revised instrument, the HIV/AIDS Awareness Questionnaire (HAAQ). The HAAQ was administered to determine university students' (a) knowledge, (b) attitudes, and (c) behaviors (KABs) as they relate to HIV/AIDS.

A panel of experts was used to determine the content validity of the HAAQ. The panel consisted of 3 Health Science graduate faculty, with expertise in tests and measurement, who had been conducting HIV/AIDS information conferences and ongoing HIV/AIDS programs for the past 5 years. Among the experts, the majority agreed that changes made for the revised instrument, the HAAQ, did in fact reflect existing epidemiological and prevention knowledge, and that the new graphic design did enhance clarity and readability. The reliability coefficient of the HAAQ was found to be .88 as determined by the use of Cronbach's Alpha (SSPS, 1990).

Descriptive statistics were performed on the demographic data items as well as the KABs, as reported by

respondents who completed and returned the HAAQ. The percentages were tabulated for that portion of the subjects who made some response. The percentage of no responses, however, is included at the end of each table; thus the 231 subjects are represented in every table.

When asked to identify their gender, the respondents indicated that 1 (0.4%) was male, and 225 (99.6%) were female. Of the 231 subjects, 5 (2.2%) did not respond to this item.

The respondents ranged in age from 18 years to 56 years (range = 38 years). The age range of 19 to 25 years represented the greatest proportion of subjects (110, or 49.9%). The mean age of the sample was 28.7 years; the median was 25 years; and the mode was 21 years. Six (2.6%) subjects did not respond to this item.

The distribution of subjects' marital status is shown in Table 1. The highest percent of subjects (108, or 47.4%) had never been married, closely followed by 91 (39.9%) respondents who reported being married. Three subjects (1.3%) did not respond to this item.

Table 1

Distribution of Subjects' Marital Status

| Status | Frequency | Percentage |
|---------------|-----------|------------|
| Never married | 108 | 47.4 |
| Married | 91 | 39.9 |
| Separated | 8 | 3.5 |
| Divorced | 20 | 8.8 |
| Widowed | 1 | 0.4 |
| No response | 3 | 1.3 |

The distribution of subjects' ethnicity is shown in Table 2. The greatest proportion of respondents (189, or 83.6%) indicated they were White (Non-Hispanic origin).

The distribution of subjects' reported exposure to Table 2

Distribution of Subjects' Ethnicity

| Ethnic Origin | Frequency | Percentage |
|--------------------------------------|-----------|------------|
| Black (Non-Hispanic) | 13 | 5.8 |
| American Indian or Alaskan Native | 6 | 2.7 |

Table 2 (continued)

Distribution of Subjects' Ethnicity

| Ethnic Origin | # | % |
|--------------------------------------|-----|------|
| White (Non-Hispanic) | 189 | 83.6 |
| Hispanic | 9 | 4.0 |
| Asian or Pacific Islander | 2 | 0.9 |
| International Non- Resident/Alien | 2 | 0.9 |
| Other | 5 | 2.2 |
| No response | 5 | 2.2 |

HIV/AIDS information sources is listed in Table 3. Two hundred and nineteen (98.2%) respondents indicated that television was the most frequent source. Only 4.3% (7) subjects reported using an AIDS hotline. The hotline category also recorded the most non-responses (69, or 29.9%).

The distribution of subjects' correct knowledge about HIV/AIDS is listed in Table 4. In the knowledge section, information was categorized as follows: modes of transmission, condom use, and HIV/AIDS as a progressive

disease (disease spectrum). Modes of transmission items in Table 3

Subjects' Reported Exposure to HIV/AIDS Source Data

| Source | Yes | | No | | No Response | |
|-------------------------------------|-----|------|-----|------|-------------|------|
| | # | % | # | % | # | % |
| TV | 219 | 98.2 | 4 | 1.8 | 8 | 3.5 |
| Campus News | 89 | 49.7 | 90 | 50.3 | 52 | 22.5 |
| Family/Friends | 149 | 76.8 | 45 | 23.2 | 37 | 16.0 |
| Hotline | 7 | 4.3 | 155 | 95.7 | 69 | 29.9 |
| Doctors/Nurses/ Health Educators | 128 | 66.7 | 64 | 33.3 | 39 | 16.9 |
| Formal Classes | 71 | 39.2 | 110 | 60.8 | 50 | 21.6 |
| HIV/AIDS Pamphlets | 180 | 84.9 | 32 | 15.1 | 19 | 8.2 |
| Community Newspaper | 136 | 70.5 | 57 | 29.5 | 38 | 16.5 |
| Magazine(s) | 196 | 92.5 | 16 | 7.5 | 19 | 8.2 |
| Workshops/Seminars/ Briefings | 50 | 27.6 | 131 | 72.4 | 50 | 21.7 |

the HAAQ included questions 20 through 34; condom usage included items 10, 12, 13, 14, 15, 16, and 17; and disease spectrum included items 2-9, and 11. Items which were answered incorrectly most frequently included transmission

factors regarding french kissing (item 22); sharing a hot tub (item 26); insects (item 27); and that HIV/AIDS can cause mental or personality changes (item 5).

Table 4

Subjects' Correct Knowledge About HIV/AIDS

| Category | (Averages) # | % |
|--|--------------|------|
| Modes of Transmission (includes items 20-34) | 199 | 87.2 |
| Condom Use (includes items 10, and 12-17) | 172 | 75.5 |
| Disease Spectrum (includes items 2-9, and 11) | 167 | 73.5 |

The distribution of subjects' reported attitudes related to HIV/AIDS is listed in Table 5. Subjects' reported attitudes were averaged according to "agree" responses for the following categories: interpersonal relations (with HIV-infected persons); personal responsibility; belief in media reports; and HIV antibody testing. Interpersonal items were numbered 36, 40, 41, 42, and 45. Personal responsibility items were numbered 43 and 44. Belief in media reports/information about HIV/AIDS included items 38 and 39. HIV testing items were numbered

35 and 37.

In item 42, one hundred and ninety (82.3%) respondents said they would work or attend class with someone infected with HIV/AIDS; 177 respondents (71.9%) indicated a person who knowingly infects others should be jailed (item 40). In the area of personal responsibility, 226 (97.8%) respondents reported in item 43 that they had at least some measure of control to prevent becoming infected with HIV/AIDS. In item 44, two hundred and one respondents (87%) said they were doing "everything possible" to avoid becoming infected with HIV/AIDS. Respondents also believed what they read, saw, or heard about HIV/AIDS in the media. More than half of the respondents (160, or 69.3%) reported that "all persons at risk should be screened for HIV infection," and the overwhelming majority (216, or 93.5%) said that "all pregnant women should be offered HIV (antibody) testing."

The distribution of subjects' reported behaviors related to HIV/AIDS is listed in Table 6. Answers were averaged according to positive responses. Items were categorized as follows: condom/barrier use (items 47-50, 52-53, 62-65); safer sex practices (items 61, 66, 69-70, and 73); injecting drug use (items 57-60, and 71); alcohol and recreational drug use (items 67-68); testing (item 72); and

relationships (item 56).

Table 5

Subjects' Reported Attitudes Related to HIV/AIDS

| Categories | Positive Response (Averages) | # | % |
|---|---------------------------------|-----|------|
| Interpersonal relations (includes items 36, 40, 41, 42, and 45) | | 156 | 67.5 |
| Personal responsibility (includes items 43 and 44) | | 214 | 92.4 |
| Belief in media (includes items 38 and 39) | | 200 | 86.7 |
| Testing | | | |
| - Required (includes item 35) | | 160 | 69.3 |
| - Offered (includes item 37) | | 216 | 93.5 |

In general, subjects reported that they were not embarrassed to discuss, buy, or use condoms; that they would practice safer sex; that they would avoid injecting drugs and recreational drug use; that they would ask partners to be tested prior to sex; and that they were in a relationship with one person for at least 5 years and had limited their sexual encounters to only that person. However, 88 or 38.8% of respondents said they would use alcohol before having sex.

Table 6

Subjects' Reported Behaviors Related to HIV/AIDS

| Category | Positive Behaviors (Averages) | # | % |
|---|----------------------------------|-----|------|
| Condom/Barrier Use (includes items 47-50, 52-53, and 62-65) | | 130 | 67.4 |
| Practice Safer Sex (includes items 61, 66, 69-70, and 73) | | 183 | 80.8 |
| Injecting Drug Use (includes items 57-60, and 71) | | 156 | 81.8 |
| Alcohol/Recreational Drug Use (includes items 67 and 68) | | 164 | 72.0 |
| Testing (includes item 72) | | 134 | 59.3 |
| Relationships (includes item 56) | | 100 | 56.2 |

The distribution of subjects' reported number of sexual partners is shown in Table 7. This section includes items 74 through 83. Item 74 was a self-report of the number of sexual partners respondents had had since 1979. The highest percentage (32.3% or 73) were respondents who indicated one sexual partner. The next largest response was "6 or more," reported by 58 (25.7%) subjects. Five (2.2%) subjects did

not respond.

Table 7

Subjects' Reported Number of Sexual Partners Since 1979

| Category | # | % |
|-------------|----|------|
| None | 19 | 8.4 |
| 1 | 73 | 32.3 |
| 2 | 24 | 10.6 |
| 3 | 17 | 7.5 |
| 4 | 19 | 8.4 |
| 5 | 9 | 4.0 |
| 6 or more | 58 | 25.7 |
| Don't know | 7 | 3.1 |
| No response | 5 | 2.2 |

The distribution of the number of sexual partners of the respondent's partner(s) is shown in Table 8. In item 75, subjects were asked how many sexual partners their current sexual partners had had since 1979. The highest percentage of responses was 28.5%, or 55 respondents who reported one other sexual partner, followed by 54 (28%) respondents who answered "don't know." Thirty eight (16.5%) subjects did not respond.

Table 8

Subjects' Sexual Partners' Reported Number of Partners

| Category | # | % |
|-------------|----|------|
| 1 | 55 | 28.5 |
| 2 | 15 | 7.8 |
| 3 | 17 | 8.8 |
| 4 | 11 | 5.7 |
| 5 or more | 41 | 21.2 |
| Don't know | 54 | 28.0 |
| No response | 38 | 16.5 |

The distribution of subjects' reported HIV positive partners is shown in Table 9. In item 76, subjects were asked if any of their sexual partners had tested positive for HIV. Twelve (5.8%) respondents said "yes." Fifty nine (28.5%) subjects said "don't know," and 24 (10.4%) subjects did not respond.

The distribution of subjects' who reported having sex with partners who use(d) injected drugs is shown in Table 10. In item 77, subjects were asked to self-report whether they had ever engaged in sex with a partner who used injected drugs. The highest percentage reported was 85.4%,

or 176 respondents who said they had not had sex with injecting drug users. Twenty five (10.8%) subjects did not respond.

Table 9

Subjects' Reported Number of HIV Positive Sexual Partners

| Category | # | % |
|-------------|-----|------|
| Yes | 12 | 5.8 |
| No | 136 | 65.7 |
| Don't know | 59 | 28.5 |
| No response | 24 | 10.4 |

Table 10

Subjects' Reported Sexual Partners Who Use Injected Drugs

| Category | # | % |
|-------------|-----|------|
| Yes | 15 | 7.3 |
| No | 176 | 85.4 |
| Don't know | 15 | 7.3 |
| No response | 25 | 10.8 |

The distribution of subjects' reported injecting drug use is shown in Table 11. In item 78, subjects were asked if they used illegal drugs. The highest percentage of response was 99.6%, or 228 respondents who reported "no." Two (0.9%) subjects did not respond.

Table 11

Subjects' Reported Injecting Drug Use

| Category | # | % |
|-------------|-----|------|
| Yes | 0 | 0 |
| No | 228 | 99.6 |
| Don't know | 1 | 0.4 |
| No response | 2 | 0.9 |

The distribution of subjects' reported use of shared drug equipment during the last 5 years is shown in Table 12. In item 79, subjects were asked to self-report if they had ever shared drug equipment with another person during the last 5 years. The majority of respondents (31, or 52.5%) said "no." One hundred and seventy two (74.5%) subjects did not respond. (Subjects were instructed to skip this item if they reported no injecting drug use in item 78.)

The distribution of subjects' reported sexually

Table 12

Subjects' Reported Use of Shared Drug Equipment

| Category | # | % |
|-------------|-----|------|
| Yes | 28 | 47.5 |
| No | 31 | 52.5 |
| No response | 172 | 74.5 |

transmitted diseases (STDs) is shown in Table 13. In item 80, subjects were asked whether or not they had had any sexually transmitted disease during the last 5 years. The highest percentage of response was 89.1%, or 196 respondents who said "no." Eleven (4.8%) of subjects did not respond.

Table 13

Subjects' Reported Sexually Transmitted Diseases

| Category | # | % |
|-------------|-----|------|
| Yes | 22 | 10.0 |
| No | 196 | 89.1 |
| Uncertain | 2 | 0.9 |
| No response | 11 | 4.8 |

The distribution of subjects' reported risk for HIV/AIDS infection is shown in Table 14. In item 81, subjects were asked whether or not they thought they were at risk of infection from HIV/AIDS. The highest percentage of response was 69.2%, or 153 respondents who said "no." Ten (4.3%) subjects did not respond.

Table 14

Subjects' Reported Risk of HIV/AIDS Infection

| Category | # | % |
|-------------|-----|------|
| Yes | 26 | 11.8 |
| No | 153 | 69.2 |
| Uncertain | 42 | 19.0 |
| No response | 10 | 4.3 |

The distribution of subjects' reported HIV status is shown in Table 15. In item 82, subjects were asked to self-report their HIV status. Five (2.2%) subjects reported they had tested positive for HIV infection. Four (1.7%) subjects did not respond.

The distribution of subjects' reported blood transfusion(s) is shown in Table 16. In item 83, subjects were asked to self-report whether or not they had received

any blood transfusions with blood that was not their own between 1979 and 1985. The majority of subjects (219, or 95.6%) reported none. Two (0.9%) subjects did not respond.

Table 15

Subjects' Reported HIV Status

| Category | # | % |
|-------------|-----|------|
| Yes | 5 | 2.2 |
| No | 222 | 97.8 |
| No response | 4 | 1.7 |

Table 16

Subjects' Reported Blood Transfusions, 1979-1985

| Category | # | % |
|-------------|-----|------|
| Yes | 7 | 3.1 |
| No | 219 | 95.6 |
| Uncertain | 3 | 1.3 |
| No response | 2 | 0.9 |

Also analyzed were subjects' responses to "other" categories. The distribution of subjects' other reported

sources of HIV/AIDS information is listed in Table 17.

Subjects were asked to report sources of HIV/AIDS information in item 1. Nineteen (8.2%) of the 231 subjects wrote in data in the space marked "other" in addition to those sources listed in the questionnaire (e.g., television, health educators, and formal classes). Eleven different sources were documented; the most responses reported were categorized in knowing someone with HIV/AIDS, either as a friend or relative, or as a guest lecturer in an academic setting.

Table 17

Subjects' Other Reported Sources of HIV/AIDS Information

| Category | Frequency |
|---------------------------------|-----------|
| High school research paper | 1 |
| Radio/radio talk shows | 3 |
| State/national PTA publications | 1 |
| Workplace | 2 |
| Job training (1) | |
| Health-oriented worksite (1) | |
| Bryan's House (pediatric AIDS) | 1 |
| Volunteers | 2 |
| Hospice workers (1) | |
| AIDS Foundation worker (1) | |

Table 17 (continued)

Subjects' Other Reported Sources of HIV/AIDS Information

| Category | Frequency |
|----------------------------|-----------|
| Church | 2 |
| Billboard | 1 |
| Songs | 1 |
| Reading books at libraries | 1 |
| Persons with HIV/AIDS | 4 |
| Friend who died (1) | |
| Cousin who died (1) | |
| Friend is HIV positive (1) | |
| Young woman with HIV (1) | |
| who spoke to a class | |
| at another university | |
| Total | 19 |

Comments written on the questionnaire by subjects also were collected and analyzed. The distribution of the top six items in which subjects' responded with unsolicited comments is shown in Table 18. Fifty (22%) subjects responded with comments. In general, the greatest proportion of comments made regarded sexual behaviors, specifically, not practicing or not knowing about anal and oral sex; whether or not one would ask about sexual history, or share injecting drug equipment; and about subjects'

sexual partners' number of sexual partners.

Table 18

Top Six Items - Unsolicited Comments By Subjects

| Category | Responses | Rank |
|---|-----------|------|
| Would you... | | |
| Item 62. Use condoms for anal intercourse? | 14 | 1 |
| Item 65. Use a dental dam or other barrier for oral sex? | 10 | 2 |
| Item 63. Use a condom for oral sex? | 8 | 3 |
| Item 71. Share an unsterilized needle or syringe to do drugs? | 5 | T4 |
| Item 72. Ask your partner to be tested for HIV (AIDS) infection before having sex? | 5 | T4 |
| Item 75. How many partners (including yourself) has your current sexual partner had since 1979? | 4 | 6 |

CHAPTER V

SUMMARY, FINDINGS, DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

No part of the globe has escaped infection from human immunodeficiency virus (HIV) and death from acquired immune deficiency syndrome (AIDS) (Goldsmith, 1992). Because of the consequences of HIV infection, research-based HIV/AIDS education curricula with proven effectiveness in behavioral change(s) is paramount (Fennell, 1990). To develop and evaluate HIV/AIDS prevention programs, valid and reliable instruments are necessary to determine HIV/AIDS-related knowledge, attitudes, and behaviors (Brown, 1989). An AIDS Awareness Questionnaire (AAQ) was revised to include the current epidemiological and prevention knowledge about HIV/AIDS. The revised instrument, the HIV/AIDS Awareness Questionnaire (HAAQ), was tested for validity and reliability. The HAAQ then was administered to a random population of 500 TWU undergraduate students in spring 1992.

Findings

The following research questions were answered based on the responses of 231 subjects:

1. Is the HIV/AIDS Awareness Questionnaire valid?

It was determined to be valid by a panel of experts.

2. Is the HIV/AIDS Awareness Questionnaire reliable?
Reliability coefficient was found to be .88.

3. As related to HIV/AIDS, (a) what are university students' levels of knowledge; (b) what are their attitudes; and (c) what are their behaviors?

(1) A high percentage of respondents answered correctly most items in the knowledge section.

(a) In the modes of transmission category, 87.2% subjects answered correctly.

(b) In the condom use category, 75.5% subjects answered correctly.

(c) In the disease spectrum category, 73.5% subjects answered correctly.

(2) Attitudes varied but were generally positive.

(a) In the category of interpersonal relationships, 67.5% subjects responded positively (e.g., they would work or attend class with a person infected with HIV/AIDS).

(b) In the category of personal responsibility, 92.4% subjects responded positively (e.g., they possessed at least some element of control regarding risk of HIV infection).

(c) In the category of belief of media, 86.7% subjects indicated they believed what they heard, saw, and read regarding HIV/AIDS.

(d) In the category of testing, 69.3% subjects favored required screening for all persons at risk for HIV infection, while 93.5% subjects responded that HIV testing should be offered to pregnant women.

(3) Behaviors varied.

(a) In the condom/barrier use category, 67.4% subjects reported positive (desired) behaviors.

(b) In the safer sex category, 80.8% subjects reported positive behaviors.

(c) In the injecting drug use category, 81.8% subjects reported positive behaviors, i.e., did not inject drugs.

(d) In the alcohol/recreational drug use category, 72% subjects reported positive behaviors, i.e., subjects reported they would not use such drugs prior to having sex.

(e) Regarding HIV testing, 59.3% subjects reported that they would ask their partners to be tested for HIV infection prior to having sex.

(f) Regarding "long term" relationships, 56.2%

subjects indicated they had been in one relationship for 5 or more years, and they had not had sex with anyone but their partner during the relationship.

Discussion

HIV/AIDS-related knowledge, attitudes, and behaviors were surveyed and self-reported by 231 subjects. The subjects appeared to be knowledgeable, which seems to support Butcher, et al. (1991) and Fennell (1991). In these similar studies, college and university students demonstrated "a high level" of knowledge about HIV disease prior to AIDS education, yet they also were uncertain about particular questions, e.g., transmission of HIV/AIDS by insects; through saliva, or sweat; and food.

That 98.2% of subjects reported the TV being the most frequently cited source of HIV/AIDS information is not surprising, given the propensity of "couch potatoes." In fact, in light of the power of this medium, as supported by these study data, it would appear beneficial to investigate further the implications of HIV/AIDS education via television, be it public service announcements, "made for TV movies", or other specials.

Persistent misconceptions regarding transmission

factors were noted even though the subjects otherwise demonstrated a high percentage of correct responses in the knowledge section. In this study, when asked to report on ways "HIV/AIDS has been known to have been transmitted," subjects responded as follows:

(1) through insect bites: 37.2% of the subjects answered "true" or "don't know."

(2) by eating food handled by an HIV-infected person: Only 4 (1.8%) subjects answered "true" but 32 (14%) subjects responded "don't know."

(3) through contact with perspiration (sweat): 17.6% of the subjects responded "true" or "don't know."

(4) by French (wet) kissing: 36.4% of the subjects answered "true" or "don't know."

The subjects' attitudes varied, but generally were positive. When asked if persons infected with HIV/AIDS should be quarantined, of the 231 subjects, 77% disagreed, and 16.1% reported they were "uncertain." The majority of subjects (82.3%) responded that they would work or attend class with a person with HIV/AIDS infection, but 13.9% were "uncertain." The majority of respondents (94.8%) also indicated that they felt the AIDS epidemic will affect everyone's life in some way, yet 16.5% reported they were

"uncertain" about whether or not persons important to them were supportive of HIV-risk reduction behaviors. The largest distribution of possible responses ("agree," "disagree," or "uncertain") was recorded in item 40. When asked if a person who knowingly infects others with HIV/AIDS should be jailed, of the 231 subjects, 166 (71.9%) agreed; 30 (13%) disagreed; and 35 (15.2%) were "uncertain." One respondent scratched out the word "jailed" and substituted instead "executed."

Subjects' rationale for self-assessed risk provided striking contrasts vis a vis reported behaviors versus knowledge and attitudes. Two hundred and one (87%) subjects reported "I'm doing everything possible to avoid becoming infected with HIV/AIDS," but 25.7% of the subjects reported having had sex with six or more partners since 1979. More than one fourth (28%) of the subjects responded "don't know" when asked how many sexual partners their sexual partners had had since 1979. And only 59.3% of the subjects reported they would ask their partner to be tested for HIV infection before having sex.

Low condom/barrier use also appears problematic, a finding seemingly consistent with Butcher et al. (1991) and Fennell (1991). Forty (19.6%) subjects reported that they

would not use a condom for anal intercourse; and 21.9% subjects responded "don't know." Only 17.9% of the subjects reported they would use a dental dam or other barrier for oral sex; and 43% indicated "don't know." Thirty-eight (21%) subjects reported that they would not use a condom during sex because "they are uncomfortable." In contrast, the overwhelming majority of subjects (98.2%) correctly answered in the knowledge section that use of a condom during sex can reduce the risk of HIV/AIDS infection. And an even higher number of subjects (99.6%), correctly answered that HIV/AIDS has been known to have been transmitted through contact with semen, vaginal secretions, or blood.

The apparent acceptance and use of mind/mood-altering drugs also proved interesting in contrast to subjects' reported behaviors. Two hundred and nine (92.1%) subjects reported they would not use recreational (illegal) drugs before having sex, but 38.8% indicated they would use alcohol. On the other hand, the overwhelming majority of subjects (97.8%) studied at TWU rejected the statement, "there's nothing anyone can do to prevent becoming infected with HIV/AIDS." Such contradictions may demonstrate the sense of "invulnerability" (Fennell, 1990; Keeling, 1989;

Mangun, cited in Fennell, 1991) projected or believed by many young people. Apparently the use of, and attitudes toward alcohol by some TWU subjects supports Butcher et al. (1991), who found the risk of HIV infection to be increased when alcohol is combined with the common practice among college students of unprotected sex with multiple partners.

Other apparent discrepancies between subjects' knowledge and attitudes versus behaviors were noted. Sixty-nine percent of the subjects reported they were not at risk of becoming infected with HIV/AIDS, and 19% responded "uncertain." However, 10% of the subjects reported having had a sexually transmitted disease diagnosed within the last 5 years. Moreover, 7.3% of the subjects reported having had sexual intercourse with a partner who uses I.V. or non-I.V. injecting drugs. (An additional 7.3% responded "don't know.")

What subjects' reported they would do in advance of having sex was found to be questionable in light of subsequent reporting of behavioral risk factors. For instance, 88.5% of the subjects responded that they would ask a partner about past sexual behaviors before having sex, but just over one fourth reported they didn't know about their partner's partners. The majority (84.6%) of subjects

also reported that they would inquire about a partner's past drug use before having sex. However, 12 (5.8%) subjects reported their sexual partners to be HIV positive. And 44 (19.4%) subjects rejected the idea of using a separate spermicide at the same time as using a condom; 54 (23.8%) responded "don't know."

Tragically, 5 (2.2%) subjects in this study reported they were HIV positive. While this figure is extremely sobering, it does not appear to be unique to this study's population. Consider that, in July, 1991, Scott Wright of The Austin American-Statesman reported that 1 in 100 persons tested positive for HIV infection at The University of Texas at Austin Health Center. This blind study examined 1,000 anonymous blood samples taken from patients (for other reasons) at the UT-Austin Health Center. Nine of those 1,000 samples tested positive for HIV infection. While this statistic is not transferrable to the general population, nonetheless it represents almost a five-fold increase over the national average previously determined in a phase of the survey conducted among selected U. S. colleges and universities by the American College Health Association (ACHA) and the CDC in 1988. In that study, 1 in 500 patients at selected college health centers was found to be

infected with HIV (ACHA, cited in Wright, 1991).

One must always be careful in interpreting findings, as they can be inaccurate, or not applicable. Only 13 of 231 respondents indicated they were of Black/African American ethnicity which is not representative of TWU's population. An apparent contradiction was noted in item 57 ("I do not use I.V. or other injected illegal drugs") as contrasted to item 71 ("[Do you] Share an unsterilized needle or syringe to do drugs?"). No respondents indicated they were injecting drug users, yet 47.5% indicated they shared injecting drug equipment. Wording of these items may have impacted subjects' responses.

One respondent offered the following: "For your information, this might make a difference for your research, but I am a female homosexual. I have been with my partner for six years. I hope I have helped in your research." Another subject wrote in her survey, "??" adjacent the first reference to use of a "dental dam." A third respondent wrote, "I can't see where these apply to me" regarding the use of a separate spermicide along with a condom; asking about a partner's drug history; and asking a partner to be tested for HIV infection prior to having sex.

Some subjects also indicated either a lack of knowledge

of, and/or a preference against anal sex in particular. Six subjects wrote that they "would not have anal sex" or "would not do that"; two others wrote in "?" or "???" regarding anal sex. One of those same subjects also wrote in "I would not do that -- that's sodomy!" regarding oral sex.

One subject did not answer the condom/barrier use category of the knowledge section, and wrote on the instrument that the HAAQ was "Lesbian insensitive." No demographic data was solicited regarding subjects' sexual orientations as the researcher felt it was not relevant to this particular study; with respect to HIV/AIDS, the knowledge, attitudes, and behaviors included in the HAAQ apply to all sexual orientations.

Additionally, 101 (55.5%) of the subjects reported not using condoms because they were using birth control pills or other forms of birth control. These data are subject to interpretation, i.e., are women in this study, regardless of marital status, who use birth control pills, or diaphragms, etc., assuming that they are not at risk for, or are somehow protected from sexually transmitted diseases, including HIV/AIDS?

Conclusion

The HAAQ was found to be valid and reliable. Approximately three-fourths of the subjects answered the knowledge items correctly, and over two-thirds had positive attitudes. Behavior responses appeared positive; however, behaviors did not reflect subjects' self-reported perceived risk. In some cases, the self-reported behaviors directly contradicted the subjects' knowledge and attitudes.

Recommendations

The following recommendations are offered for further research studies:

1. Correlate the HAAQ's KABs with the demographic data to determine relationships between and among age, ethnicity, marital status and prior HIV/AIDS education variables.
2. Conduct a replication study among graduate students using the HAAQ, and investigate the relationship(s) between undergraduate and graduate students.
3. Investigate how social norms and cultural standards influence behaviors, given that knowledge and behaviors do not correlate.
4. Investigate how sexual orientation and family cultures influence behaviors, and what findings, if any, may

warrant specialized education programs.

5. Investigate the impact of television as compared to other mediums regarding the delivery and acceptance by various publics of public health messages through varied formats (e.g., movies, documentaries, public service announcements).

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APPENDIX A

LETTER OF PERMISSION TO CONDUCT THE STUDY

TEXAS WOMAN'S UNIVERSITY
P.O. Box 22939, TWU Station
OFFICE OF RESEARCH & GRANTS ADMINISTRATION
DENTON, TEXAS 76204-0939

HUMAN SUBJECTS REVIEW COMMITTEE

Name of Investigator: Suzanne Mason SS#: _____

Address: _____ Date: 12-11-91

Dear Suzanne Mason:

Your study entitled Human Immunodeficiency Virus (HIV)/Acquired
Immune Deficiency Syndrome (AIDS) Awareness Questionnaire

has been reviewed by a committee of the Human Subjects Review Committee and appears to meet our requirements in regard to protection of individuals' rights.

Be reminded that both the University and the Department of Health, Education, and Welfare regulations typically require that signatures indicating informed consent be obtained from all human subjects in your study. These are to be filed with the Human Subjects Review Committee. Any exception to this requirement is noted below. Furthermore, according to DHEW regulations, another review by the Committee is required if your project changes.

Special provisions pertaining to your study are noted below:

☒ The filing of signatures of subjects with the Human Subjects Review Committee is not required.

☐ Other:

☐ No special provisions apply.

Sincerely,



Chairman
Human Subjects Review
Committee at Denton

cc: Graduate School
Project Director
Director of School or
Chairman of Department

APPENDIX B
COVER LETTER

Spring 1992

Dear TWU Student,

Enclosed are important materials. **Please do not discard this material until you have read this letter carefully.**

I am a graduate student at TWU, in the Department of Health Studies. I am employed by The University of Texas at Arlington (UTA), where I am chair of the UTA Task Force on AIDS. To finish my thesis for my graduate degree, I need your help in **completing and returning** the short, anonymous survey enclosed. It only will take about 20 minutes of your time.

The survey asks questions about your knowledge, attitudes, and behaviors regarding the Human Immunodeficiency Virus (HIV), and Acquired Immune Deficiency Syndrome (AIDS). Some of you may find the language to be explicit, others may not.

Your participation is strictly voluntary. However, should you choose to complete the survey, it is important that your answers be accurate and honest, and that you complete the entire survey.

A pre-stamped and addressed envelope is included for your convenience. **Do not hand your completed survey to anyone.** It must be returned through campus or U.S. Mail to protect your anonymity.

Should you have any concerns or need to talk about issues which may be raised having completed this survey, please call any of the following for assistance/referral:

- TWU Counseling Center: (817) 898-3801
- Dr. Leah Kaplan, Chair, TWU Task Force on AIDS, Health Studies Department: (817) 898-2860
- Crisis Intervention: (817) 898-1427
- Suzanne Mason, UT Arlington Health Center, HIV/AIDS Counselor / Chair, UTA Task Force on AIDS: Metro (817) 273-2772

Thank you for your time and efforts. Please know you are contributing to the shape of future health education programs on HIV/AIDS by completing this survey.

Remember:

- This is an anonymous survey. **Do not put your name or any identifying marks anywhere on the survey.**
 - Your participation is voluntary. By choosing to complete and return the survey, you are giving your consent to participate.
 - Enclose the completed survey in the attached envelope and seal. Return by campus or U.S. Mail to *Suzanne Mason, c/o Dept. of Health Studies, Box 22808, TWU, Denton, TX 76204.*
- Thanks!**

Sincerely,



Suzanne Mason

APPENDIX C

THE HIV/AIDS AWARENESS QUESTIONNAIRE

HIV/AIDS Awareness Questionnaire

This is a survey to determine your knowledge, attitudes, and behaviors relating to HIV (Human Immunodeficiency Virus) and AIDS (Acquired Immune Deficiency Syndrome). The HIV attacks the body's immune system; AIDS is the most serious form of HIV disease.

It is very important that you respond honestly to each question. All of your answers will be anonymous. Do not put your name or ID number anywhere on this survey. The completed questionnaire will not be made available to anyone except the researchers.

Upon the completion of the survey: Do not hand this completed survey to anyone. This survey must be returned through campus or U.S. Mail to: *Suzanne Mason, c/o Dept. of Health Studies, Texas Woman's University, P.O. Box 22808, Denton, Texas 76204.*

Please check the appropriate box, or fill in the blank:

| | |
|--|---|
| Age _____ | Sex <input type="checkbox"/> Male <input type="checkbox"/> Female |
| Marital Status | Ethnic Background |
| <input type="checkbox"/> Never Married | <input type="checkbox"/> Black-Non-Hispanic Origin |
| <input type="checkbox"/> Married | <input type="checkbox"/> American Indian or Alaskan Native |
| <input type="checkbox"/> Separated | <input type="checkbox"/> White-Non-Hispanic Origin |
| <input type="checkbox"/> Divorced | <input type="checkbox"/> Hispanic |
| <input type="checkbox"/> Widowed | <input type="checkbox"/> Asian or Pacific Islander |
| | <input type="checkbox"/> International Non-Resident or Alien (Please specify country: _____) |
| | <input type="checkbox"/> Other (Please specify: _____) |

Please check your response for each item listed below:

I. Have you learned about HIV/AIDS from any of the following sources?

| | | | |
|---|-------------------------------------|---|----------------------------------|
| <input type="checkbox"/> YES <input type="checkbox"/> NO | T.V. | <input type="checkbox"/> YES <input type="checkbox"/> NO | Formal Classes |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | Campus Newspaper | <input type="checkbox"/> YES <input type="checkbox"/> NO | HIV/AIDS Pamphlets |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | Family/Friends | <input type="checkbox"/> YES <input type="checkbox"/> NO | Community Newspaper |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | AIDS Hotline | <input type="checkbox"/> YES <input type="checkbox"/> NO | Magazines |
| <input type="checkbox"/> YES <input type="checkbox"/> NO | Doctors/Nurses/ Health Educators | <input type="checkbox"/> YES <input type="checkbox"/> NO | Workshops/Seminars/ Briefings |
| Other (please specify) : _____ | | | |

PART A. Knowledge:

For items 2-19, please check either TRUE, FALSE, or DON'T KNOW for the following statements:

- | | | |
|-----|--|--|
| 2. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | HIV (AIDS) infection has spread among people who are heterosexual. |
| 3. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | A person must be infected with the HIV virus to develop AIDS. |
| 4. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | An HIV-infected person can infect others with HIV. |
| 5. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | HIV (AIDS) infection can cause mental or personality changes. |
| 6. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | A person infected with HIV probably will die of AIDS. |
| 7. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | A newly-infected person may not have a positive ("AIDS") antibody test. |
| 8. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | Most HIV-infected persons know they are infected. |
| 9. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | A person infected with HIV can look and feel healthy. |
| 10. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | Using a condom during sex can reduce the risk of HIV (AIDS) infection. |
| 11. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | Health Departments must notify the sexual partners of persons who test positive on HIV antibody tests (the "AIDS test"). |
| 12. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | Condoms can be cleaned and reused several times safely. |
| 13. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | To properly put on a condom, the penis must be hard (erect). |
| 14. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | One should hold the condom at the tip to squeeze out any air while unrolling it on the penis. |
| 15. | <input type="checkbox"/> TRUE <input type="checkbox"/> FALSE <input type="checkbox"/> DON'T KNOW | Vaseline, baby oil, or Crisco make good lubricants to use with condoms. |

16. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 Immediately after ejaculation, one should hold the condom in place on the penis and withdraw while the penis is still hard (erect).
17. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 The best condoms for disease protection are latex with a spermicide.
18. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 Condoms are likely to break if they are stored in a wallet for a long time.
19. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 If you are HIV-infected, it doesn't matter if you have unprotected sex, or share I.V. (intravenous) drug equipment with another HIV-infected person.

For items 20-34, "contact" refers to infected body fluids coming into contact with an open cut, sore, or mucous membrane such as the lining of the mouth, vagina, or rectum.

HIV/AIDS has been known to have been transmitted...

20. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 by shaking hands
21. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 through an HIV-infected mother to unborn child
22. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 by French (wet) kissing
23. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 through contact with semen, vaginal secretions, or blood
24. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 through contact with perspiration (sweat)
25. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 by using public toilets
26. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 by sharing a hot tub
27. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 through insect bites
28. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 by sharing I.V. (intravenous) or non-I.V. needles
29. ☐ TRUE
☐ FALSE
☐ DON'T KNOW
 by eating food handled by an HIV-infected person

HIV/AIDS has been known to have been transmitted... (Check one answer for each of the following) :

30. ☐ TRUE ☐ FALSE ☐ DON'T KNOW through unprotected oral sex (vaginal, penile, or anal)
31. ☐ TRUE ☐ FALSE ☐ DON'T KNOW by rooming with a person who is HIV-infected
32. ☐ TRUE ☐ FALSE ☐ DON'T KNOW by engaging in physical contact activities, such as sports
33. ☐ TRUE ☐ FALSE ☐ DON'T KNOW by sharing telephone, copier, and coffee-making machines in an office setting
34. ☐ TRUE ☐ FALSE ☐ DON'T KNOW by having sex with someone who uses injected illegal drugs

PART B. Attitudes:

For items 35-45, please check one answer (agree, disagree, or uncertain) that corresponds to your response to the following statements:

35. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN All persons at risk should be required to be screened for HIV infection.
36. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN Persons important to me are supportive of HIV-risk reduction behaviors.
37. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN All pregnant women should be offered HIV testing.
38. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN The news media is exaggerating the AIDS epidemic.
39. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN I don't believe much of the information reported about HIV/AIDS.
40. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN A person who knowingly infects others with HIV/AIDS should be jailed.
41. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN Persons infected with HIV/AIDS should be quarantined.
42. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN I would work or attend class with a person with HIV/AIDS infection.
43. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN There is nothing anyone can do to prevent becoming infected with HIV/AIDS.

44. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN
I'm doing everything possible to avoid becoming infected with HIV/AIDS.
45. ☐ AGREE ☐ DISAGREE ☐ UNCERTAIN
The AIDS epidemic will affect everyone's life in some way.

PART C. Behavior:

For item 46, check one answer which applies to you:

46. *a* ☐ I do not have sexual intercourse.
b ☐ I use condoms each and every time I have sexual intercourse.
c ☐ I use condoms, but not every time.
d ☐ I do not use condoms.

If you checked *a*, skip to item 61 and continue.

If you checked *b*, *c*, or *d*, continue on item 47.

For items 47 thru 60, please check one answer (yes, no, or don't know) that corresponds to your response to the following statements:

When I do not use condoms during sex it is because...

47. ☐ YES ☐ NO ☐ DON'T KNOW
I am embarrassed to buy them.
48. ☐ YES ☐ NO ☐ DON'T KNOW
I am embarrassed to use them.
49. ☐ YES ☐ NO ☐ DON'T KNOW
I am embarrassed to talk about them.
50. ☐ YES ☐ NO ☐ DON'T KNOW
They make sex less romantic.
51. ☐ YES ☐ NO ☐ DON'T KNOW
I want to get pregnant/I want to father a child.
52. ☐ YES ☐ NO ☐ DON'T KNOW
They are uncomfortable.
53. ☐ YES ☐ NO ☐ DON'T KNOW
It takes advance planning to have them available.
54. ☐ YES ☐ NO ☐ DON'T KNOW
I am on the pill, or use another form of birth control.

When I do not use condoms during sex it is because... (Check one answer for each of the following) :

55. ☐ YES
☐ NO
☐ DON'T KNOW

My female partner is/I am pregnant.

56. ☐ YES
☐ NO
☐ DON'T KNOW

I have been in one relationship for five (5) or more years, and I have not had sex with anyone but my partner during the relationship.

57. ☐ YES
☐ NO
☐ DON'T KNOW

I do not use I.V. or other injected illegal drugs.

58. ☐ YES
☐ NO
☐ DON'T KNOW

I have never used I.V. or other injected illegal drugs.

59. ☐ YES
☐ NO
☐ DON'T KNOW

My partner does not use I.V. or other injected illegal drugs.

60. ☐ YES
☐ NO
☐ DON'T KNOW

My partner has never used I.V. or other injected illegal drugs.

Would you do the following...

61. ☐ YES
☐ NO
☐ DON'T KNOW

Have sex with a person (or people) you just met?

62. ☐ YES
☐ NO
☐ DON'T KNOW

Use a condom for anal intercourse?

63. ☐ YES
☐ NO
☐ DON'T KNOW

Use a condom for oral sex?

64. ☐ YES
☐ NO
☐ DON'T KNOW

Use a condom for penile-vaginal intercourse?

65. ☐ YES
☐ NO
☐ DON'T KNOW

Use a dental dam or other barrier for oral sex?

66. ☐ YES
☐ NO
☐ DON'T KNOW

Have your partner practice safer sex?

67. ☐ YES
☐ NO
☐ DON'T KNOW

Use recreational (illegal) drugs before having sex?

68. ☐ YES
☐ NO
☐ DON'T KNOW

Use alcohol before having sex?

69. ☐ YES
☐ NO
☐ DON'T KNOW

Ask about a partner's past sexual behavior before having sex?

70. ☐ YES
☐ NO
☐ DON'T KNOW

Ask about a partner's past drug use before having sex?

71. ☐ YES
☐ NO
☐ DON'T KNOW

Share an unsterilized needle or syringe to do drugs?

72. ☐ YES
☐ NO
☐ DON'T KNOW

Ask your partner to be tested for HIV (AIDS) infection before having sex?

73. ☐ YES
☐ NO
☐ DON'T KNOW

Use a separate spermicide at the same time as using a condom?

For items 74 thru 83, please check the appropriate box for your response.

74. With how many partners have you had sexual intercourse since 1979?

☐ NONE ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 OR MORE ☐ DON'T KNOW

If you answered NONE, skip to item 78 and continue.

75. How many sexual partners (including yourself) has your current sexual partner had since 1979?

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 OR MORE ☐ DON'T KNOW

76. ☐ YES
☐ NO
☐ DON'T KNOW

Have any of your sexual partners had a positive HIV antibody (AIDS) test?

77. ☐ YES
☐ NO
☐ DON'T KNOW

Have you ever engaged in sexual intercourse with a partner who uses I.V. (intravenous) or non-I.V. injected drugs?

78. ☐ YES
☐ NO
☐ DON'T KNOW

Do you use I.V. or other injected illegal drugs?

If you answered NO to item 78, skip item 79 and continue on item 80.

If you answered YES to item 78, continue on item 79.

79. ☐ YES
☐ NO

Have you ever shared drug equipment with another person during the last five (5) years?

80. ☐ YES
☐ NO
☐ UNCERTAIN

Have you had any sexually transmitted disease (STD) during the last five (5) years?

81. ☐ YES
☐ NO
☐ UNCERTAIN

Do you think you are at risk of becoming infected with HIV/AIDS?

Check one answer for each of the following:

82. ☐ YES
☐ NO

Have you ever had a positive HIV antibody test?

83. ☐ YES
☐ NO
☐ UNCERTAIN

Did you receive any blood transfusions with blood that was not your own between 1979 and 1985?

- Please fold this questionnaire in half and place in the envelope provided.
- Return this sealed envelope through campus or U.S. Mail (no postage required) to:

*Suzanne Mason
c/o Department of Health Studies
Texas Woman's University
P.O. Box 22808
Denton, Texas 76204*

Thank you for your time and honesty.