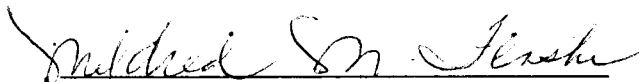
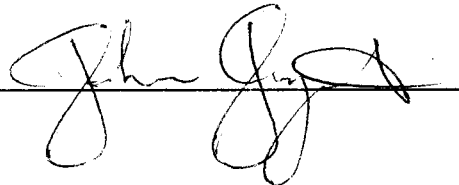


To the Graduate Council:

I am submitting herewith a thesis written by Maria L. Overstreet entitled "An Investigation of College Age Students' Primary Incentive for Utilizing Condoms". 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 Master of Science, with a major in Nursing.


Mildred M. Fenske, Major Professor

We have read this thesis
and recommend its acceptance:

Accepted for the Council:


Vice Provost
and Dean of The Graduate School

STATEMENT OF PERMISSION TO USE

In presenting this thesis in partial fulfillment of the requirements for a Master's degree at The University of Tennessee, Knoxville, I agree that the Library shall make it available to borrowers under rules of the Library. Brief quotations from this thesis are allowable without special permission, provided that accurate acknowledgment of the source is made.

Permission for extensive quotation from or reproduction of this thesis may be granted by my major professor, or in her absense, by the Head of Interlibrary Services when, in the opinion of either, the proposed use of the material is for scholarly purposes. Any copying or use of the material in this thesis for financial gain shall not be allowed without my written permission.

Signature

Maria L. Overstreet

Date

November 24, 1987

AN INVESTIGATION OF COLLEGE AGE STUDENTS'
PRIMARY INCENTIVE FOR
UTILIZING CONDOMS

A Thesis
Presented for the
Master of Science in Nursing
Degree
The University of Tennessee, Knoxville

Maria L. Overstreet
December 1987

DEDICATION

I dedicate this piece of work to my family (Linda, Bobby, Lisa, Kristi), close friends (Machelle, Pat, Dave, Stephen, Laura), travelmate (Ricky), and one other person who will remain nameless, who have endured for the past 18 months my self-indulgence in my studies.

ACKNOWLEDGMENTS

A number of scholars have supported me through all stages of this research. In particular I would like to thank the members of my thesis committee, Dr. Mildred Fenske, chairperson, Dr. Sandra Thomas, and Mr. John Jozwiak for their genuine concern in this research and their commitment to assist me in making this research endeavor fruitful.

I am grateful to The University of Tennessee, Knoxville for allowing me to conduct this study. To the participants in this study, I extend my sincere appreciation for their candid responses.

ABSTRACT

Today, a potentially lethal virus (HIV) presents those who are and those who will be sexually active with choices to make concerning their use of prophylactics. The purpose of this research was to study the present use of condoms among the fraternity and sorority population on the campus of The University of Tennessee, Knoxville. The particular questions investigated surround (1) the primary incentive for the use of condoms, (2) the concern with preventing AIDS or other STDs, and (3) the difficulty in obtaining condoms. Three hundred and eleven subjects completed a 26 item researcher developed questionnaire. Data analysis consisted of frequencies used for descriptive purposes in this nonexperimental, univariate descriptive study.

The results showed the primary incentive for the use of condoms to be prevention of a potential pregnancy. The majority of subjects indicated more concern with the prevention of AIDS rather than other STDs and reported no difficulties in obtaining condoms. Implications for nursing derived from these findings center around public educational efforts to distribute factual information about HIV infection and the use of condoms to prevent transmission of HIV.

The Health Belief Model served as the theoretical framework for this study. Application of the HBM to this study revealed cues to action and that the benefits of condom use must be enhanced to increase the use of condoms by this population to prevent the transmission of HIV.

TABLE OF CONTENTS

CHAPTER	PAGE
I. INTRODUCTION	1
Statement of the Problem	2
Importance of Study	2
Need for Study	5
Significance of Study	8
Purpose of Study	10
Research Question	10
Subsidiary Questions	11
Assumptions	11
Definition of Terms	11
Chapter Topics	12
II. REVIEW OF LITERATURE	14
History of Condoms	14
History of AIDS	15
Condom Effectiveness	16
Testing Condoms for Virus Transmission	17
Condom Advantages and Disadvantages	19
Theoretical Framework	20
Health Belief Model, Motivation, and Self-responsibility	23
Additional Uses of Health Belief Model	24
Summary of Health Belief Model	26
III. METHODOLOGY	27
Design	27
Subjects	27
Subject Distribution	27
Demographic Characteristics	28
Instrument	28
Questionnaire Validity and Reliability	31
Procedures	32
Summary	32
IV. DATA ANALYSIS	33
Subsidiary Questions	33
Inconsistencies	37
Additional Findings	40
Consistency of Using Condoms	41
Condom Providers	43
Sources of Information	45
AIDS Knowledge	47

CHAPTER	PAGE
V. CONCLUSIONS AND IMPLICATIONS	49
Discussion of Conclusions	49
Limitation of Study	50
Implications for Nursing	50
Implications for Future Research	52
Summary	53
LIST OF REFERENCES	55
APPENDIXES	61
APPENDIX A. LETTER OF APPROVAL – DIRECTOR OF SORORITY AFFAIRS	62
APPENDIX B. LETTER OF APPROVAL – DIRECTOR OF FRATERNITY AFFAIRS	65
APPENDIX C. INSTRUCTIONS FOR QUESTIONNAIRE	68
APPENDIX D. QUESTIONNAIRE	70
VITA	73

LIST OF TABLES

TABLE	PAGE
1. Percent Distribution Of Subjects	28
2. Consistency of Responses To Subsidiary Questions	31
3. Primary Reason For Using Condoms I	33
4. Primary Reason For Using Condoms II	34
5. Prevent STD I	35
6. Prevent STD II	35
7. Condom Obstacles I	36
8. Condom Obstacles II	36
9. Inconsistencies—Previous Condom Use	37
10. Inconsistencies—Number Of Partners	38
11. Additional Pregnancy Devices	40
12. Additional STD Devices	41
13. Consistency Of Using Condoms I	42
14. Consistency Of Using Condoms II	42
15. Partner Insists On Condoms	43
16. Partner Provides Condom	44
17. Sources of Condoms	44
18. Increased Interest	45
19. Source Of Information I	46
20. Source Of Information II	46
21. Prevent AIDS	47
22. Knowledge Test	48

CHAPTER I

INTRODUCTION

Throughout the course of history, generations of people have fought to defeat a large number of fatal illnesses. Although many of these once crippling and life threatening diseases no longer challenge the survival of man, the emergence of a new strain of viruses, the HTLV family, now threatens man's survival. Unlike most other health issues, the Human Immunodeficiency Virus (HIV) has captured the attention of the public at large, health care providers, educators, legislative bodies, and world leaders. There are few individuals who have not been in contact with either information regarding HIV or individuals already infected with HIV. Individuals contracting the virus do not always develop the acquired immune deficiency syndrome (AIDS). However, following the development of AIDS and the onset of one or more opportunistic infections, commonly *Pneumocystis carinii* pneumonia or Kaposi's sarcoma, individuals usually survive only 11 to 15 months (Health and Public Policy Committee of the American College of Physicians and The Infectious Diseases Society of America, 1986). Approximately 80-95% of those infected with HIV will not develop AIDS, but those who do develop symptoms within 5 years following infection with HIV (Gong, 1987). AIDS, initially considered a condition only contracted by homosexuals, has now been reported to afflict heterosexuals, children, hemophiliacs, blood transfusion recipients, fetuses, intravenous drug abusers, prostitutes, and individuals like you. All 50 states, the District of Columbia, and four U.S. Territories have reported cases of AIDS. In 1986, the Center for Disease Control (CDC) received reports of an average of 58 cases of AIDS each day (equal to approximately 2.5 cases per hour), compared to 35

cases in 1985, 20 cases in 1984, and 10 in 1983 (U.S. Department of Health and Human Services & Public Health Services, 1986). Currently, no vaccine or antiviral agent exists to prevent further spread of HIV; therefore, control of the epidemic for the time being must center upon reducing transmission related behavior (American College Health Association, 1987; Carr & Gee, 1986; Des Jarlais, Freidman, & Hopkins, 1985; Drotman & Peterman, 1987; Francis & Chin, 1987; Goedert, 1987; Gong, 1987; Grieco, 1987; Koop, 1986; Sensakovic & Greer, 1987; Williams, 1986).

Statement of the Problem

This study investigated the question: "For today's college students, what are the incentives for using condoms?" Historically, people have used condoms for one of two reasons, to prevent unwanted pregnancies or to prevent sexually transmitted diseases (STDs). Currently in the United States, people have a choice of various birth control measures but are limited to two choices to prevent STDs, abstinence or condoms. The number one protection for both prevention of potential pregnancy and STDs is abstinence. Following abstinence, the next and most appropriate choice for preventing potential STDs is the use of condoms (Blumberg, 1987; Conant, Hardy, Sernatinger, Spicer, & Levy, 1986; "Condoms," 1979; Grieco, 1987; Hicks et al., 1985; Katznelson, Drew, & Mintz, 1984; Kingsley et al., 1987; Koop, 1986).

Importance of Study

Illness has threatened man's survival throughout the course of history, bubonic plague, cholera, smallpox, tuberculosis, polio, cancer, and now AIDS. Berger (1987) identifies the pervasiveness of AIDS when he estimates that 1.5 million people in the United States are presently infected with HIV. Gong (1987) depicts the incidence of AIDS as an iceberg with the known AIDS cases above the water line, a small portion of

the epidemic, and the majority of cases with no apparent infection below the water line. The CDC reports 41,700 persons with AIDS in the United States, 285 cases in Tennessee (Center for Infectious Disease, 1987). Although homosexual or bisexual males comprise 77.9% of the 41,700 reported AIDS cases, heterosexuals also develop AIDS. Transfusion recipients follow homosexual and bisexual males with an incidence of 6.0%. Recently, the incidence of AIDS by intravenous drug abusers and heterosexuals has decreased from 17 to 4.2% and 4 to 2.8%, respectively (Center for Infectious Disease, 1987). Research regarding this decrease is needed to determine ways to reinforce this occurrence. The incidence of AIDS by males far exceeds the incidence among females, 38,600 to 3,100. Twenty-four thousand AIDS related deaths, a mortality rate exceeding 50% has been reported (Center for Infectious Disease, 1987).

Four routes of transmission for HIV have been identified: sexual contact via semen or blood, reuse of contaminated equipment such as that which occurs in intravenous drug abuse, administration of contaminated blood or blood products, and passage of the virus from infected mothers to their newborns (Bennett, 1986; Blumberg, 1987; Conant, 1986; Curran, Morgan Hardy, Jaffe, Darrow, & Dowdle, 1985; Drotman, & Peterman, 1987; Fink, 1986; Francis, & Chin, 1987; Gong, 1987; Health and Public Policy Committee of the American College of Physicians and Infectious Diseases Society of America, 1986; Kaplan, Sager, & Schiavi, 1985; Koop, 1986; Sensakovic and Greer, 1987; Vieira, 1987). HIV has been isolated in blood, semen, saliva, urine, tears, lymph nodes, bone marrow, breast milk, cerebrospinal fluid, feces, brain tissue, and vaginal / cervical secretions (Gong, 1987; Health and Public Policy Committee et al., 1986; Koop, 1986; Vieira, 1987). However, transmission via routes other than blood, blood products, or semen pose no risk due to the minute amounts of the virus present in fluids; "no instance of transmission from these body fluids has been reported" (Koop, 1986, p. 25).

Finding a treatment or cure for the virus will present a breakthrough for all immune disorders caused by retroviruses, but until a specific antiviral agent for HIV is available, the only logical methods of coping with AIDS involve learning to protect oneself and others from contracting the virus. Therefore, attention to the prevention of sexually transmitting HIV, the major route of transmission, needs to be emphasized (Kaplan, Sager, and Schiavi, 1985). The present study involves the current use of condoms among college students. Although conclusions from this study are specific to college age individuals, health care providers, especially nurses, can adapt the recommendations to other populations, especially educational programs concerning HIV transmission and prophylactic use of condoms.

In October, 1986, Surgeon General C. Everett Koop verbally advocated the use of condoms as a protection against AIDS (Barol, Hager, & Wingert, 1987). Later, a pamphlet authored by Koop (1986) outlined the cause of AIDS and ways to prevent the further spread of the fatal illness emphasizing the use of condoms. Condoms have also been promoted by the American Nurses' Association (ANA) which announced its support of condom advertising in the mass media ("American Nurses' Association," 1987). Other groups who publicly endorse the use of condoms as a preventive measure against the sexual transmission of HIV include the San Francisco AIDS Foundation (1986) and the American College Health Association (1987); both groups issued pamphlets addressing educational and preventive aspects of HIV.

Several studies indicated that certain behaviors may be effective in preventing AIDS and decreasing its incidence (American College Health Association, 1987; Carr & Gee, 1986; Des Jarlais, et al., 1985; Drotman & Peterman, 1987; Francis & Chin, 1987; Goedert, 1987; Koop, 1986; Williams, 1986). These recommendations include but are not limited to questioning and visual inspection of potential sexual partners, reducing anonymous sexual partners, using condoms, and avoiding specific sexual activities (e.g.

anal and oral intercourse and fisting). Nurses and other health care professionals need to disseminate this information and encourage individuals to change their behaviors. With increased knowledge of how HIV is spread, encouragement of "safer sex" (see Guidelines for safer sex, Figure 1) campaigns by health care professionals seems appropriate and necessary (Gong, 1987; Health and Public Policy Committee et al., 1986; Sensakovic & Greer, 1987; Williams, 1986). In addition to their physiological knowledge of AIDS, nurses work with AIDS patients and know society's attitudes toward these patients and their families and friends; therefore, nurses are in a most opportune position to relay information to patients, families, friends, and the general public. Nurses' communication techniques and their understanding of human behavior, valuable assets when dealing with people, allow nurses to be viable and reliable sources of information. It is important that nurses take the initiative to distribute factual information concerning ways in which the sexual transmission of HIV can be halted or at least reduced until other measures such as antiviral therapies or vaccines are available.

Need for Study

Throughout the literature, numerous studies review the efficacy of contraceptive devices. These studies have been directed toward discovering which products most effectively prevent pregnancy. Today studies are needed to test the efficacy of products to prevent STDs. Few studies testing the effectiveness of condoms to prevent STDs have been reported. Conant, Hardy, Sernatinger, Spicer, & Levy (1986) reported that retroviruses, both a mouse retrovirus and the AIDS-associated retrovirus, did not pass through condom membranes. Conant, Spicer, and Smith (1984) also studied the transmission of another virus Herpes Simplex Virus (HSV II), and found HSV II did not penetrate condom membranes. The results of both studies encourage those at risk for contracting a sexually transmitted disease such as HIV or HSV II to use condoms as

a "safety procedure" (Conant et al., 1986, p. 1706). A similar study (Katznelson et al., 1984) investigated the efficacy of condoms as a barrier to the seminal transmission of cytomegalovirus (CMV), another retrograde virus, frequently found among the microorganisms causing disease in patients with AIDS (Armstrong, et al., 1985). Katznelson and associates (1984) tested five types of condoms and found that all of the condoms they tested blocked the transmission of CMV; therefore, they concluded that condoms may effectively prevent seminal transmission of CMV. Condoms prevented transmission of the viruses tested (HIV, HSVII, and CMV) and suggested their efficacy. In another study, Barlow (1977) discovered that the proper and consistent use of condoms decreased the probability of acquiring gonorrhea ($p < 0.001$). This study also suggests the efficacy of condoms as prophylactics.

While condoms prevent the transmission of HIV, a spermicidal preparation containing nonoxynol-9 inactivates the virus. A team of eight researchers (Hicks et al., 1985) studied the inactivation of HIV by nonoxynol-9, a preparation contained in some commercial spermicides, usually at a concentration of 1 to 5%, and found a concentration of 0.05% nonoxynol-9 inactivates HIV in vitro. These researchers suggested that women use contraceptive jellies or foams containing nonoxynol-9 in conjunction with a diaphragm to prevent the seminal transmission of HIV. An aspect Hicks and associates (1985) did not address but should have concerns the potential increased efficacy of condoms as prophylactics against HIV when a spermicidal preparation containing nonoxynol-9 is used either inside or outside the condom.

Although studies such as these offer health care providers facts on which to make recommendations to their patients, some researchers still hesitate to make specific recommendations regarding condom or spermicidal use. One such group, Kingsley et al., (1987), who studied the risk factors involved in the seroconversion to HIV positive in homosexual men express reluctance to persuade persons to use condoms but quote

studies by Conant et al., (1986) and Hicks et al., (1985) which support the efficacy of condoms as prophylactics against HIV and nonoxynol-9 as viricidal for HIV, respectively. In studying the risk factors leading to positive HIV seroconversion, Kingsley et al., (1987) discovered that receptive anal intercourse definitely increased the risk of seroconversion to HIV positive and recommended stopping anal intercourse entirely, a recommendation with distinct moral implications. Just as Kingsley and associates (1987) express reluctance to persuade persons to use condoms to prevent sexual transmission of HIV, two other researchers', (Voeller & Potts, 1985), hesitancy stems from a Consumer Reports article ("Condoms," 1979) which reported various failure rates of condoms during laboratory tests. Although failure rates vary by brand, Consumers Reports ("Condoms," 1979) state that the improper use of condoms accounted for 10% of their failure rate. The literature definitely acknowledges or confirms a relationship between the consistent and proper use of condoms and the potential prevention of sexually transmitted diseases (Barlow, 1977; Conant, et al., 1984; Conant, et al., 1986; Felman, 1979; Hicks, et al., 1985; Katznelson, 1984; Voeller & Potts, 1985). Health care providers should use this information to educate the public to use condoms as a prophylactic against HIV and other STDs.

Several researchers have taken advantage of the current knowledge on the transmission of HIV and developed guidelines concerning the prevention of the sexual transmission of HIV. Educational pamphlets released by the American College Health Association (1987) and the San Francisco AIDS Foundation (1986) indicate abstinence from sexual activity as the only definite method to prevent the sexual transmission of HIV. They recommend the consistent and proper use of condoms as the second most effective method of preventing the sexual transmission of HIV. As early as 1977 and 1979, Barlow and Felman, respectively, stressed the importance of correctly using condoms to prevent STDs, a recommendation now challenged by a potentially more

deadly virus, HIV. Several authors have outlined and ranked sexual practices on the basis of their potential for transmitting HIV. Figure 1 illustrates the various guidelines for "safer sex" divided into 3 categories safer, possibly safe, and unsafe.

<u>Safe</u>	<u>Possibly Safe</u>	<u>Unsafe</u>
Abstinence	Cunnilingus (oral-vaginal contact)	Blood contact
Dry kissing	Fellatio interruptus (oral-genital contact; stop before climax)	Fellatio (esp. with semen ingestion)
External watersports on healthy skin	Reduction of number of sexual partners	Fisting (manual anal intercourse)
Frottage (body-to-body rubbing)	Vaginal & oral intercourse using a condom and nonoxynol-9 containing spermicide	Internal watersports
Hugging	Wet kissing	Intravenous drugs -- sharing a needle
Massage		Receptive anal intercourse without a condom
Mutual masturbation on healthy skin		Rimming (oral-anal contact)
Oral sex with condom		Vaginal intercourse without a condom
Touching		
Voyeurism		

Figure 1. Guidelines for safer sex. Adapted from American College Health Association, 1987; Carr & Gee, 1986; Francis & Chin, 1987; Grieco, 1987; Goedert, 1987; Sensakovic & Greer, 1987.

Significance of Study

Nationally, the media and President Reagan have responded to the importance of education to prevent AIDS. On February 25, 1987, an internal White House memorandum quoted the President as "supporting a federal campaign to educate the public about the dangers of AIDS, but only if the campaign stresses 'responsible sexual behavior' within marriage and teaches children to avoid sex" (Boffey, February 26, 1987, p. A-5). Education Secretary William Bennett (1987) followed the President's recommendations concerning AIDS education when in October 1987 he issued a guide to

AIDS education which emphasized teaching morality, restraint as a virtue, and standards of right and wrong.

In contrast to the President's and Bennett's moral and conservative orientation to educational material concerning AIDS prevention, the mass media has implemented a confrontative and fact providing approach. In 1977, the United States Supreme Court invalidated all prohibitions against advertising condoms. Felman (1979) made a plea to the National Association of Broadcasters to allow condom advertising on radio and television, but until February 1987 no condom commercials had been aired on United States television. Since February 1987, organizations such as the American Red Cross and the San Francisco AIDS Foundation and the U.S. Surgeon General have filmed commercials using both central (presentation of facts about AIDS) and peripheral (famous personalities endorsing products and telling the public to get the facts on AIDS) routes emphasizing behaviors to prevent AIDS. Petty, Cacioppo, and Schumann (1983) postulate the central route to be superior compared to the peripheral route to permanently change attitudes and behaviors; whereas, the peripheral route may more readily, but only temporarily alter attitudes and behaviors. Television series now include segments concerning AIDS; for instance, on the nationally televised show Saturday Night Live, Dennis Miller, a comedian, delivered the news in a condom costume to acknowledge National Condom Week.

Locally, Knoxville newspapers, too, have attempted to inform readers of problems associated with AIDS including societal biases such as the protest of parents and students to a school board's approval to allow a hemophiliac child who is HIV positive to attend classes with other children. One cover story in the Knoxville News-Sentinel (Dedman, 1987) focused on the difficulty University of Tennessee, Knoxville (UTK) students experience when they desire to obtain condoms. Dedman (1987) stated that to receive 36 condoms from the UTK Student Health Clinic, a male student must "give a

nurse his name, phone number, address, Social Security number, proof of income, family medical history, a blood sample, a urine specimen, and \$28.25" (p. A-1). In addition to the above requirements, a female student requesting the same services from the Knox County Health Department's family planning clinic (available through the UTK Student Health Clinic) must also have a Pap smear.

During an AIDS Awareness Week, February, 1987, UTK developed a program to educate people about AIDS. Students and faculty were encouraged to attend film presentations and ask questions. An AIDS hotline enabled interested individuals to anonymously obtain information via telephone. UTK in conjunction with The American Red Cross and the College Student Network sponsored an AIDS forum September, 1987, on UTK campus. Nelson (1987) a UTK student life reporter for The Daily Beacon, the UTK newspaper, reviewed the lack of attendance at the AIDS forum. Nelson attributed the lack of attendance to a "nonchalant attitude" of college-aged students toward AIDS (p. 4). The lack of attendance at the AIDS forum and published difficulties in obtaining condoms add to the significance of this particular study.

Purpose of Study

The purpose of this research was to study the use of condoms among the fraternity and sorority population of the University of Tennessee, Knoxville.

Research Question

What are the incentives for college age male and female students to obtain condoms today?

Subsidiary Questions

1. Are the subjects primarily interested in preventing pregnancy or in preventing sexually transmitted diseases through the use of condoms?
2. Are the subjects who use condoms to prevent STDs concerned with preventing AIDS or other STDs?
3. Do the subjects experience difficulty in obtaining condoms?

Assumptions

1. Subjects know about the use of condoms to prevent potential pregnancies and STDs.
2. Subjects have a basic knowledge of STDs including AIDS.
3. If subjects have not experienced sexual intercourse, they can still answer the questions based on their current beliefs and knowledge.
4. The preponderance of subjects have a heterosexual sexual orientation.
5. Subjects provided truthful answers to the questions.

Definition of Terms

1. Acquired immune deficiency syndrome (AIDS): A life threatening illness in which the body's natural immunity is destroyed; thus, opportunistic infections occur. Diagnosis follows a positive HIV test and occurrence of one or more opportunistic infections, usually *Pneumocystis carinii* pneumonia or Kaposi's sarcoma.
2. Cytomegalovirus (CMV): One of the viruses included in the herpes virus family, diagnosed predominately in persons with malfunctioning immune systems. Several studies correlate the incidence of CMV with AIDS.

3. Failure rate of condoms: Consists of two types, (1) user failure — misuse of condom, slipping off, not withdrawing promptly, and (2) method failure — defect in the condom.

4. Health Belief Model: Developed in 1950's by Hochbaum, Kegels, Leventhal, and Rosenstock (cited in Becker, 1974) to better understand health behavior. Four concepts included in this model are (1) perceived susceptibility, (2) perceived severity, (3) perceived barriers, and (4) perceived benefits.

5. Human immunodeficiency virus (HIV): A retrovirus from the HTLV family isolated in 1979 as the causative agent of AIDS. Alters the DNA replication of T cells which destroys the body's immune system. Isolated simultaneously by Gallo and Montagnier and called HTLV III and LAV, respectively, later recommended by an international committee to be called HIV (Gong, 1987).

6. Nonoxynol-9: A preparation viricidal to HIV and contained in several spermicides.

7. Opportunistic infections: Microorganisms usually nonpathogenic which become pathogenic due to the suppression of the individual's immune system. Common opportunistic infections identified in individuals with AIDS include *Pneumocystis carinii*, Kaposi's sarcoma, *Candida albicans*, and cytomegalovirus.

8. Retroviruses: Viruses containing genetic material called ribonucleic acid.

9. Safer sex guidelines: A list of sexual practices and their potential risks involved in contracting or transmitting HIV, (refer to Figure 1).

10. Prophylactic: A condom used to prevent the transmission of STDs.

Chapter Topics

The remaining chapters focus on the following topics. Chapter II contains an examination of the literature in the following related areas: history of condoms, history

of AIDS, condom effectiveness, and the theoretical framework. Chapter III contains a review of the methodology of this study including discussion of the following areas: design, subjects, instrument, and procedures. Chapter IV consists of a discussion of the frequencies obtained for each of the 24 questions answered by the 311 subjects. Chapter V addresses the conclusions and implications of the study. The discussion includes responses to research questions, limitation of the study, implications for nursing, and implications for future research.

CHAPTER II

REVIEW OF LITERATURE

History of Condoms

Throughout time, condoms have been used to prevent (1) pregnancy, and (2) disease. Potts and Diggory (1983) attribute the first description of condoms and their use as prophylactics against STDs to a physician, Fallopio, in 1564. Mme Sevigne, (cited in Potts and Diggory, 1983) a century later, in a letter to her daughter, Cantesse de Grignan, described condoms as "armour against love, gossamer against infection" (p. 106). During the 1700's, individuals used condoms primarily to limit the size of their families. At that time, condoms provided an alternative to illegal abortion and abstinence.

Over time, condoms have been improved; originally made from the caeca of sheep, the advanced technology of the 19th century replaced skin condoms with less expensive rubber condoms. The early 1900's brought much controversy concerning the practice of using devices to prevent pregnancy, and the controversy became a moral issue. In 1916, Margaret Sanger established the first birth control clinic in the United States (Potts & Diggory, 1983). Although much opposition to Sanger's clinic erupted, a U.S. Court of Appeals decision gave her the legal right to offer information to cure or prevent sexually transmitted diseases, but not pregnancy. Although disease prevention was not Sanger's greatest concern, she used STDs as the rationale for condom use to sidestep legalities and help women practice safer forms of birth control. Advanced technology facilitated the production of the improved latex condoms in the 1930's. Latex, compared to rubber, condoms had the advantages of being less expensive, having a thinner texture,

and generating greater heat. In 1949, the Japanese added color to condoms (Potts & Diggory, 1983). Recently introduced condoms with spermicides provide users with a greater potential to increase protection against both pregnancy and STDs. Users of condoms can now purchase them with or without color, with or without a spermicide, and as thin or thick as desired.

A review of historical events can help one see how condoms have been accepted or rejected by society. They were first used in the prevention of disease and later gained popularity for contraceptive use as the idea of family limitation grew. Today, we face an even more critical problem related to condom use, AIDS.

History of AIDS

The human T cell lymphotropic virus type III (HTLV III), the causative agent of AIDS, has been of concern worldwide for the past 8 years. Retroviruses, such as HTLV I and HTLV II, which are similar to HTLV III have been isolated in Central Africa (Wong-Staal, & Gallo, 1985). Johnson and Vieira (1987) suggest an ancestral tie between HIV and monkey retroviruses, simian T-lymphotropic virus (STLV). STLV III in some monkeys mimics AIDS in humans, but in other monkeys, the virus produces no recognized disease. Max Essex has isolated what he calls HTLV IV which has a structure similar to both HIV and the simian AIDS virus (Johnson & Vieira, 1987). Clarification of HIV origin is imperative to understand both pathogenic and nonpathogenic viral strains and to produce an antiviral therapy or vaccine. Authorities propose HIV entered Haiti from Africa via the immigrant black population, and subsequently homosexuals from the Caribbean or Africa introduced the virus to North America and Europe (Curran et al., 1985; Francis & Chin, 1987; Gong, 1987; Lange &

Jaffe, 1987; Wong-Staal, & Gallo, 1985). HIV however, requires further investigation before the positive routes of transmission can be identified.

Retroviruses, first discovered in 1909, are viruses composed of genetic material called RNA (ribonucleic acid) and possess the potential to cause tumors. In 1982, Gallo isolated HTLV I, the first of three in a family of retroviruses. Simultaneously, Gallo and Montagnier, respectively, isolated HTLV III (human T-cell lymphotropic virus type III) and LAV (lymphadenopathy associated virus); later, an international committee in an attempt to standardize terminology called the virus HIV (Gong, 1987).

Individuals who develop AIDS test positive for HIV and have one or more opportunistic infections (Pneumocystis carinii pneumonia, Kaposi's sarcoma, CMV, or Candida), emaciation, generalized adenopathy, and continuation of their early symptoms (American College Health Association, 1986; Carr & Gee, 1986; "Definition," 1986; Gong, 1987; Koop, 1986; U.S. Department of Health and Human Services, 1986). Early symptoms are usually benign and mimic a typical flu-like illness, e.g. fatigue, fever, night sweats, adenopathy, diarrhea, unexplained weight loss, persistent cough, and various skin lesions (Gong, 1987; Koop, 1986). Currently, no treatment is available for HIV infections and until one is discovered, health care providers must practice and teach preventive measures.

Condom Effectiveness

As with any contraceptive device, condoms cannot be guaranteed 100% effective; therefore, condoms should not be expected to be 100% effective as contraceptives or as prophylactics to STDs, including AIDS. Health care texts estimate a failure rate of approximately 3-5% for condoms to prevent pregnancy (Olds, London, Ladewig, & Davidson, 1980). If condoms prove to be effective against the passage of HIV, the

failure rate of condoms needs improvement. The majority of condom failures however, probably result from user incompetence and inconsistent use of condoms instead of defects within the condoms ("Condoms," 1979; Potts & Diggory, 1983; Voeller & Potts, 1985). User failure consists of incorrect or inconsistent use of condoms whereas a method failure refers to the poor quality of condoms resulting in leakage of sperm and other substances such as bacterias and viruses including HIV. Consumer Reports ("Condoms," 1979) cited three British studies regarding condoms used to prevent pregnancy which eliminated user failures. After eliminating pregnancies due to nonuse and misuse of condoms, these studies reported a method failure rate of 1%, emphasizing the importance of user competency and their efficacy to prevent pregnancy.

Testing Condoms for Virus Transmission

Condoms have been reported as effective against the passage of the causative organisms and viruses of AIDS, CMV, herpes, gonorrhea, and syphilis (Blumberg, 1987; Conant et al., 1986; "Condoms," 1979; Grieco, 1987; Hicks et al., 1985; Katznelson et al., 1987; Kingsley et al., 1987; Voeller & Potts, 1985.) While laboratory studies indicate that retroviruses do not readily pass through the membrane of condoms, others (Drotman & Peterman, 1987; Goedert, 1987) express a reluctance to advocate the use of condoms. Goedert (1987) cited a study in which 3 of 18 couples using condoms transmitted HIV. This suggests a failure rate of 17%. Goedert does not relate this finding to either a method or user failure. This finding identifies a critical need to investigate the efficacy of condoms to act as barriers to the transmission of HIV. If failure results from the method, condoms are not as reliable as they are thought to be. If most failures result from the users, which the literature suggests, ("Condoms," 1979;

Potts & Diggory, 1983; Voeller & Potts, 1985) condoms may be effective and education in their use must be enhanced.

Several researchers (Conant et al., 1986) now working to demonstrate the effectiveness of condoms to prevent transmission of HIV, have already described the efficacy of condoms related to the transmission of gonorrhea, CMV, and HSV II. In a study supported by the San Francisco AIDS Foundation, researchers tested the ability of condoms to prevent passage of a mouse retrovirus and HIV. Neither retrovirus passed through condom membranes when they subjected each type of condom to a pressure created by aspirating the plunger of a 12 millimeter syringe. An earlier study (Conant et al., 1984) also indicated the HSV II virus did not pass through condoms. These findings assume the pressure created by a plunger is equivalent to the pressure created during actual intercourse, a questionable assumption.

Katznelson, Drew, and Mintz (1984) simulated the actual trauma to condoms associated with intercourse by thrusting a test device containing CMV up and down 100 times in 5 minutes within a condom. They concluded that CMV did not penetrate the condoms. Voeller and Potts (1985) supported the findings indicating the value of condoms to prevent the transmission of diseases as do Conant et al. (1986) and Katznelson et al. (1984). Voeller and Potts (1985) agree with these findings because condoms inflated with air or water deflate slowly. Air and water compared to viruses have relatively smaller molecular weights; therefore, viruses would have more difficulty crossing the condom membrane. Dirubbo (1987) offers the following measurements for a water molecule (20 nanometers), sperm (45,000 nanometers), herpes virus (300 nanometers), HIV (100 nanometers). When tested, the condom is filled with water and water is much smaller than viruses; therefore, if the condom wall, which is 38,000 nanometers thick is impervious to water, it should also prevent the passage of HIV

(Dirubbo, 1987). Laboratory simulations of the pressure and trauma exerted on condoms during intercourse logically provide data to support or not support the effectiveness of condoms. Laboratory simulation of intercourse pressure and trauma presently provide the only available means to test the efficacy of condoms against HIV. Testing of condom effectiveness against HIV during actual sexual intercourse is not only unethical but is a potential death sentence for anyone volunteering to participate in such a study. Therefore, laboratory testing must rigorously and uniformly simulate intercourse to produce comparable findings.

We need more strenuous condom tests resembling those conducted by Consumer Reports ("Condoms," 1979). They performed five tests on 8 brands and 21 types of condoms, and tested 161 samples for leakage. They discovered some defects as well as differences among the condoms; however, all condoms were judged acceptable and categorized into three groups dependent upon their test failures. They recommended the use of additional contraceptive materials (spermicide and/or diaphragm) with condoms in the second and third groups. They subjected the condoms to electrical, water volume, bursting, tensile, and heat aging tests ("Condoms," 1979). Although they did not test the condoms using viruses or bacteria, Voeller and Potts' (1985) idea of molecular weights could be applicable.

Condom Advantages and Disadvantages

Response to the often cited study by Consumer Reports ("Condoms," 1979) provides additional information pertinent to this study. Consumer Reports mailed 4301 questionnaires concerning the topic of condoms and received 1071 usable questionnaires from men and 803 from women. Of the respondents, 75% were married with a median age of 30 for males and 28 for females; 66% used condoms with regular partners for all

or almost all sexual intercourse. Questions answered in the survey concerned advantages/ disadvantages of condoms, brands used, and reasons for discontinuing use. Ninety-two percent responded that they primarily used condoms for birth control; 82% of the fraternity and sorority population used condoms for contraception. Sixty percent of all subjects reported no embarrassment when purchasing condoms and only 4.8% of the fraternity and sorority population reported embarrassment as a deterrent to purchasing condoms. The respondents further reported the following disadvantages to using condoms: interruption of lovemaking, difficulty of using, failure to stay on, embarrassing to use, breaks, excessive friction, awareness of presence, reduction of sensation, fear of slipping off, and necessity of prompt withdrawal ("Condoms," 1979). Felman (1979) and Grieco (1987) offer the following list of disadvantages of condoms in addition to the above: embarrassing to purchase, decreased sexual intimacy, reduced pleasure, a nuisance, and unnatural. Advantages to using condoms included their convenience, ease of use, promotion of sexual arousal, increased stimulation, decreased stimulation prolonging intercourse, peace of mind, prevention of infection, and lack of side effects ("Condoms," 1979). Other commonly identified advantages of condoms include: relative cost, availability, transportability, and effectiveness (Cates, 1987; Felman, 1979; Grieco, 1987; Scales, 1977; Shearin & Morris, 1985).

Theoretical Framework

The Health Belief Model (HBM) provides the theoretical framework for this study. During the 1950's, Hochbaum, Kegeles, Leventhal, and Rosenstock (cited in Becker, 1974) conceptualized the HBM in an attempt to better understand health behaviors. One aspect of the HBM describes people's behaviors toward seeking/not seeking preventive screening.

The original model includes three requisite beliefs of persons who take actions to avoid a disease. First, the individual believes he or she is personally susceptible to a particular disease. Susceptibility exists along a continuum from denial of possibly contracting the disease to feeling in danger of contracting the disease. The second belief involves the perceived seriousness the disease would create physically, emotionally, or socially for the individual. Perceived seriousness correlates with the perceived permanency of the effects of the potential or actual disease. Perceived benefits of taking action and barriers to taking action comprise the third component of the HBM. The likelihood that a person will or will not take action equals their perceived benefits of preventive action minus their perceived barriers to preventive action. For example, a smoker may feel smoking causes lung cancer but continue to smoke because it meets one of his or her needs. Adapting the HBM model to HIV, the variables become perceptions of (1) susceptibility to HIV; (2) severity of HIV; (3) benefits of using condom during sexual intercourse; and (4) barriers to obtaining condoms, (Figure 2).

Together perceived susceptibility and severity provide a force to act; the perceived benefits of the action determine the preferred path of action (Rosenstock, 1974). However, in addition to the force provided by the perceived susceptibility and severity, a triggering event sets the process in motion. Triggering events, another factor in the HBM, termed cues to action, include either internal cues (perception of bodily states, and/or symptoms) or external cues (media campaigns, newspaper or magazine, and/or advice from others) (Rosenstock, 1974). Additional research regarding the influence of triggering events to the model continues to be needed.

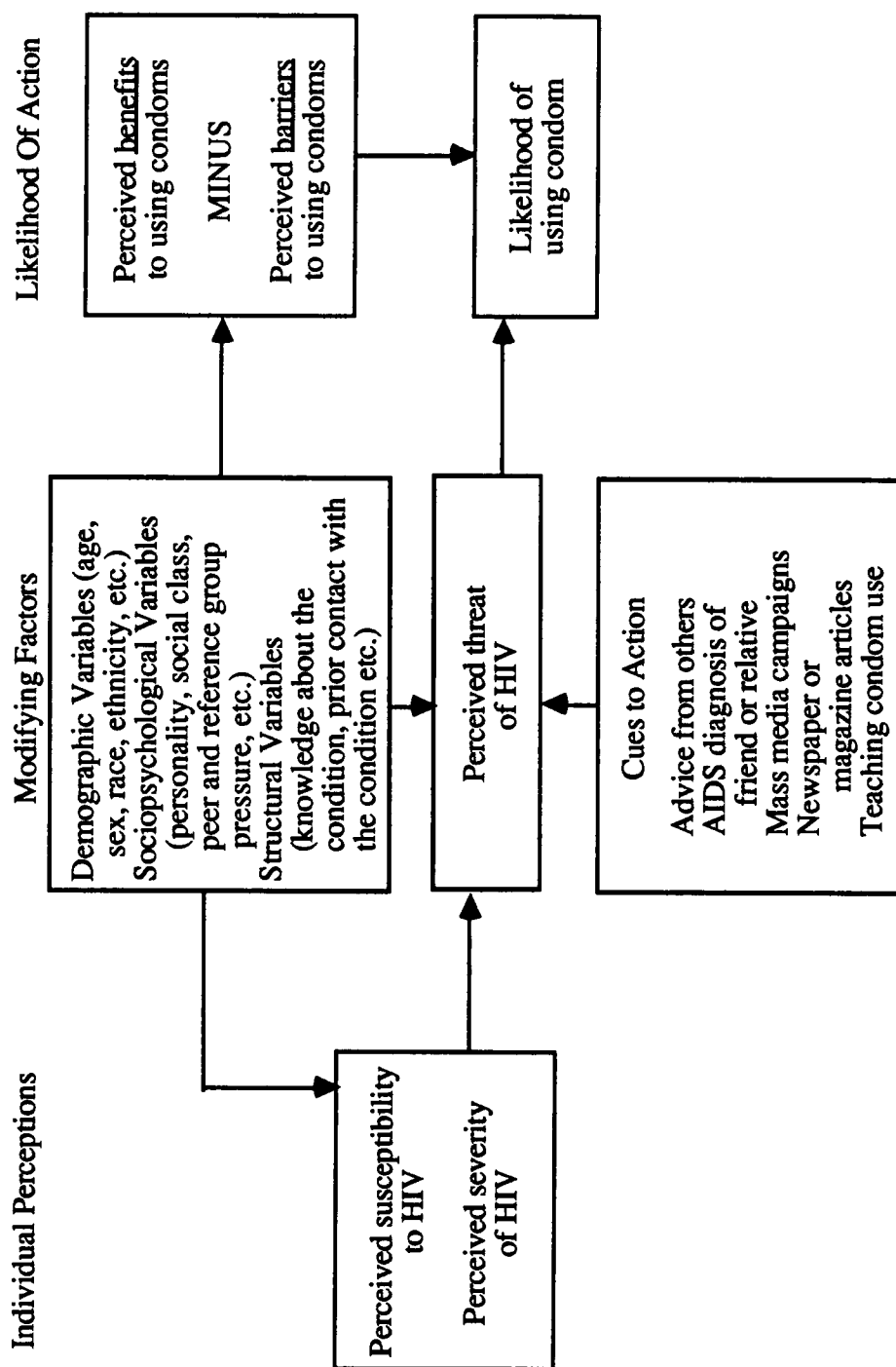


Figure 2. The Health Belief Model as predictor for use of condoms. Adapted from Rosenstock (1974) The Health Belief Model and Personal Health Behavior, (cited in Becker, 1974).

Health Belief Model, Motivation, and Self-responsibility

Demographic, sociopsychological, and structural variables all influence the third component of the HBM, the perceived benefits of prevention action. Motivation, a variable introduced, aborted, and reintroduced into the model, also needs additional research to determine its value to the HBM. Becker et al., (1977) in a later study identified all of the modifying factors (refer to Figure 2) as affecting an individual's motivations and perceptions concerning his or her health but did not consider these variables as direct causes of a particular health action. From this, Becker and associates (1977) concluded that health care providers must first determine which HBM component is inadequate and then tailor their interventions to the target group. For this particular study, if the population lacks only the perceived benefits of the preventive action of condoms, the only implication for health care workers would be to increase the population's awareness of benefits.

Pierce (1982) adapted the HBM to study compliance behavior of breast self-examination (BSE) among young adult college women, ages 18 to 26. She discovered that perceived severity and seriousness of breast cancer did not motivate the women to perform BSE and suggested additional research to identify underlying motivating behaviors. She did identify self-responsibility as the most important motivator for practicing BSE and stated nurses need to (1) inform clients of the benefits of practicing regular BSE, (2) teach BSE, and (3) promote self-responsibility in one's health.

Self-responsibility in health care and promotion was studied by Alderman (1980) in regard to motivational factors. Barriers to increased self-responsibility centered around either a lack of knowledge or interest in prevention. She focused her study on the two concepts "can" (ability, strength or skill to do something) and "try" (intention and effort) (p. 22). "Can" refers to one's intelligence, stable and unchanging over time, or

knowledge, variable and subject to improvement with practice. From this, she derived that teaching, training, and practice enhance one's abilities or "can." "Try," the intention and effort needed to cause change, consists of two characteristics, personal causality and exertion. Personal causality, an intended behavior initiated by an individual to change the environment, is related to another motivational concept, internal locus of control. If a person lacks the ability, the "can," but has the "try" or intention to attain a certain health behavior, Alderman found that the individual will likely seek the knowledge and skills used to perform the behavior. Applied to this study, if one does not know how to use a condom but believes a condom prevents potential STDs, the individual has a low "can" and a high "try," and will probably seek the knowledge necessary to change this health behavior. In this example, the individual's motivators were "lack of skill" and "desire to change."

Early investigators eliminated motivation as a variable in the HBM because the concept could not be measured operationally. Becker (1974) in explaining the sick role behavior in low income populations, defined motivation as a differential emotional arousal caused by a given stimulus. He discovered that susceptibility to and severity of a particular threat to an individual's health would itself be a motivating force. He also introduced the concept of positive health motivations to partially describe compliance behavior. In contrast, the original HBM implied disease as a negative valent region that persons want to avoid, whereas Becker viewed both positive and negative forces as motivators to avoid disease states.

Additional Uses of Health Belief Model

Several investigators have used the HBM including Condelli (1986) who examined forces associated with women's choice of birth control. He stressed that individuals

make choices either analytically or intuitively. He also indicated that one does not have to be fully knowledgeable to choose a health behavior. Again, research concerning motivational factors and their impact upon decision making would potentially benefit not only future studies using the HBM but would also help to account for some of the variables thought to influence decision making in previous studies.

Eisen, Zellman, and McAlister (1985) utilized the HBM as a conceptual framework to develop curriculum materials and to evaluate an educational program for 13 to 17 year olds. These researchers used the HBM to increase adolescents' fertility control. They designed the educational materials using four concepts: (1) susceptibility, (2) seriousness, (3) benefits, and (4) barriers. For example, the perceived costs of preventive barriers for teenagers included economic, moral, psychological, and physical aspects of acquiring and using contraceptives. The teenagers responded to each dimension of the HBM and the investigators attributed increased contraception among the teenagers, increased consistent use of contraceptives, and prevailing abstinence from preintervention to followup to the use of the HBM.

Fincham and Wertheimer (1985) studied the prognosticative ability of the HBM to predict drug therapy defaulting. They found the HBM to significantly predict possible initially defaulting patients. Fincham and Wertheimer (1985) had therefore expanded the use of the HBM to predict compliance behaviors of individuals in drug therapy similar to Eisen's et al., (1985) use of it to control adolescent's fertility.

Attitudes and behaviors, in addition to those accounted for in the HBM influence individuals' health related behaviors. This limits the HBM from accounting for variance among individuals' health related behaviors. For example, some individuals may adopt health related behaviors (e.g., jogging) that are taken on for non-health reasons (e.g., to appear more attractive or attain social approval). Another limitation to the HBM

concerns the premise that individuals highly value health. Janz and Becker (1984) caution that if investigators do not consider these limitations (attitudes, beliefs, nonhealth reasons), explaining the behaviors of individuals in terms of the HBM will not likely be useful. Janz and Becker (1984) reviewed 29 studies using the HBM as a theoretical framework to predict a health related behavior. They found the following concepts of the HBM to be beneficial in prognostic ability; barriers (91%), benefits (81%), susceptibility (77%), and severity (59%). They attribute the poor results concerning perceived severity to an individuals (1) being asymptomatic; (2) having a long-term health threat; and (3) lacking personal experience with the medical condition.

Summary of Health Belief Model

This study applies the four main concepts of the HBM, perceived susceptibility, severity, barriers, and benefits to college age students' primary use of condoms. Motivational factors intertwine with each of the four concepts, but the questionnaire used for the study does not specifically identify them. Rosenstock (1966) explains that health care providers more effectively modify people's behavior if they understand and predict the behavior before persuading the individuals to modify their health care practices. Within this study, the researcher investigates the behaviors of UTK students concerning the use of condoms and samples their knowledge related to the transmission and susceptibility to HIV.

CHAPTER III

METHODOLOGY

Design

This was a nonexperimental descriptive study describing a present situation in terms of the frequency of occurring events. This study describes the present situation on the UTK campus regarding the use of condoms among fraternity and sorority members.

Subjects

All subjects in this study met the following two criteria: (1) 18 years of age or older and (2) member of a fraternity or sorority whose total membership equaled 65 or greater. Eight fraternities and 13 sororities qualified to participate; 6 fraternities and 3 sororities agreed to participate. Confidentiality was insured to each Greek organization as was anonymity to every participating subject.

Subject Distribution

Three hundred and eleven subjects, 190 males and 121 females, participated in the study, 14.1% of the eligible sorority and fraternity members. Table 1 displays the distribution of subjects related to the total population, eligible population, and participating sororities and fraternities. Of the Greek organizations agreeing to participate, 1036 subjects were invited to participate; 30% participated. However, 100% of the members present at the specified meetings participated.

Table 1. Percentage Distribution of Subjects.

Variable	Total Population	% Total	Eligible Population	% Total	Participating Population	% Total
Male	1490	12.8	905	21.0	692	27.5
Female	1431	8.5	1295	9.3	344	35.2
Total	2921	10.6	2200	14.1	1036	30.0

Demographic Characteristics

Subjects ranged in age from 18 to 24 years, with a mean of 20.2 years for males and 19.6 years for females, Figures 3 and 4 further delineate the demographic characteristics of the subjects who responded. The majority of subjects were single sophomores studying Business Administration.

Instrument

A 26 item researcher developed questionnaire tested three subsidiary questions. Consistency of subject response was examined by designing two equivalent questions per subsidiary question. Continuity of these specific six questions can be reviewed in Table 2. The difference in answers only ranged from 2.6 to 11.2; an interesting finding considering some responses were missing on one of the two questions and the probability that an individual may change responses. This suggests the majority of subjects answered the same on the three paired questions. The questionnaire required 7-10 minutes to complete (see Appendix D).

Age	Number	Mean
18	20	19.6
19	37	
20	37	
21	17	
22	10	
Total	121	

Marital Status	Number	Mode
Single	116	Single
Engaged	5	
Total	121	

School Classification	Number	Mode
Freshman	48	Sophomore
Sophomore	26	
Junior	31	
Senior	16	
Total	121	

Field of Study	Number	Mode
Business Administration	39	Business Administration
Communications	17	
Education	7	
Health, Physical Education & Recreation	4	
Engineering	3	
Human Ecology	11	
Law	2	
Liberal Arts	30	
Nursing	1	
Social Work	1	
Medicine	2	
Undecided	3	
No Response	1	
Total	121	

Figure 3. Demographic Characteristics of Female Subjects.

Age	Number	Mean
18	15	20.2
19	59	
20	51	
21	32	
22	16	
23	12	
24	<u>5</u>	
Total	190	

Marital Status	Number	Mode
Single	187	Single
Engaged	<u>3</u>	
Total	190	

School Classification	Number	Mode
Freshman	46	Sophomore
Sophomore	62	
Junior	43	
Senior	35	
Graduate	<u>4</u>	
Total	190	

Field of Study	Number	Mode
Agriculture	3	Business Administration
Business Administration	107	
Communications	16	
Education	2	
Health, Physical Education & Recreation	2	
Engineering	18	
Human Ecology	1	
Law	1	
Liberal Arts	24	
Architecture	2	
Medicine	4	
Undecided	9	
No Response	<u>1</u>	
Total	190	

Figure 4. Demographic Characteristics of Male Subjects.

Table 2. Consistency of Responses to Subsidiary Questions.

Question	Subsidiary Question	Response	% Subject Response	
			Male (N= / MV =)	Female (N= / MV =)
6 - 23	1	Pregnancy	79-69.4 (188/2) (183/7)	87-87 (107/14) (108/13)
7, 8 - 22	2	No Obstacles	98.4-87.8 (188/2) (180/10)	93-93.4 (86/35) (75/46)
10 - 21	3	AIDS	69.8-81.3 (172/18) (166/24)	78-86.9 (82/39) (84/37)

Note:

N = total subjects

MV = missing values

Questionnaire Validity and Reliability

The questions tested the three subsidiary questions and retrieved other valuable information; thus, suggesting content validity. Questions 24-26 served to test knowledge concerning AIDS transmission and susceptibility. Information related to these three questions has appeared in local newspapers, school publications, pamphlets, magazines, films attended by fraternity and sorority presidents, and on television and radio. To establish reliability, six of the 26 questions were designed to measure the same attribute.

Procedures

Following approval of the thesis committee and the Nursing Research Committee, Form A (Certification of Exemption from Review for Research Involving Human Subjects) was filed and approved by the Office of Research Compliance at The University of Tennessee, Knoxville in May, 1987. The researcher met with Margaret Williams, Director of Sorority Affairs and Ben Herrington, Director of Fraternity Affairs and received both verbal and written approval to contact the fraternity and sorority presidents (Appendixes A & B). The researcher contacted the presidents via telephone, arranged dates for the researcher to present the study and distribute the questionnaires to the organizations' members. The researcher discussed the study with the sorority members during their weekly meetings and answered questions after they completed the questionnaires; the fraternities, with the exception of one, did not allow the researcher to discuss the study with their members due to closed meetings. At the fraternities, the presidents agreed to read the instructions, distribute, and collect the questionnaires at their weekly meetings (Appendix C). Anonymity for individuals and confidentiality for organizations was emphasized to the participants. After all data was collected, the questionnaires were scored and frequencies for all nominal data were computed.

Summary

A 26 item researcher developed questionnaire concerning the use of condoms for contraception and prevention of STDs and basic knowledge of AIDS was distributed to the sorority and fraternity members at UTK. Thirty percent of the sorority and fraternity members participated in the study. The nominal data collected from the questionnaires will be described in terms of frequency of response.

CHAPTER IV

DATA ANALYSIS

Subsidiary Questions

A description of both male and female responses to the paired questions relating to each subsidiary question follows. Subsidiary Question 1: Are the subjects primarily interested in preventing pregnancy or in preventing sexually transmitted disease through the use of condoms? Responses from Question 6 and Question 23 (see Appendix D) refer to Subsidiary Question 1. The subjects responded similarly to both Question 6 and Question 23 and indicated they primarily used condoms to prevent potential pregnancies (see Tables 3 & 4).

Table 3. Primary Reason For Using Condoms I.

Variable	Question 6		% Total
Male (N = 188)	Pregnancy	148	79
	STD	37	19.5
	Both	3	1.5
Female (N = 107)	Pregnancy	93	87
	STD	11	10
	Both	3	3

Note:

N = total subjects

MV = missing values: Males = 2; Females = 14

Table 4. Primary Reason For Using Condoms II.

Variable	Question 23		% Total
Male (N = 183)	Pregnancy	127	69.4
	STD	54	29.5
	Both	2	1.1
Female (N = 84)	Pregnancy	73	87
	STD	4	5
	Both	7	8

Note:

N = total subjects

MV = missing values: Males = 7; Females = 37

Subsidiary Question 2: Are the subjects who use condoms to prevent STDs concerned with preventing AIDS or other STDs? This subsidiary question concerns the responses from Questions 10 and 21 (see Appendix D). Concerns about AIDS far outweighed the concern for other STDs in both the female and male subjects (see Tables 5 & 6). In Question 10, the subjects were asked to choose one of several STDs; whereas, in Question 21 the subjects were to list a specific STD. Although a difference in question format exists, subjects responded similarly to the questions. On Question 10, 78% females and 69.8 % males answered AIDS; however, on Question 21, 86.9% females and 81.3% males listed AIDS as the STD of most concern.

Subsidiary Question 3: Do the subjects experience difficulty in obtaining condoms? Responses from Questions 7, 8, and 22 (see Appendix D) apply to Subsidiary Question 3. Question 22 combines Question 7 and Question 8 and asks for a list of obstacles making it difficult to obtain condoms. Question 7 asks if there is any difficulty and Question 8 identifies the difficulty; if any. The majority of females and males reported no difficulty obtaining condoms (see Tables 7 and 8). Responses to Question 7 and

Table 5. Prevent STD I.

Variable	Question 10		% Total
Male (N = 172)	AIDS	120	69.8
	Genital herpes	20	11.6
	All	17	9.9
	Other	15	8.7
Female (N = 82)	AIDS	64	78
	Genital herpes	7	8.5
	Other	11	13.5

Note:

N = total subjects

MV = missing values: Males = 18; Females = 39

All = responses from subjects who listed every STD

Table 6. Prevent STD II.

Variable	Question 21		% Total
Male (N = 166)	AIDS	135	81.3
	Genital herpes	12	7.3
	All	13	7.8
	Other	6	3.6
Female (N = 84)	AIDS	73	86.9
	Genital herpes	4	4.8
	Other	7	8.3

Note:

N = total subjects

MV = missing values: Males = 24; Females = 37

All = responses from subjects who listed every STD

Table 7. Condom Obstacles I.

Variable	Question 7		% Total
Male (N = 188)	No	185	98.4
	Yes	3	1.6
Female (N = 86)	No	80	93
	Yes	6	7

Note:

N = total subjects

MV = missing values: Males = 2; Females = 35

Table 8. Condom Obstacles II.

Variable	Question 22		% Total
Male (N = 180)	None	158	87.8
	Embarrassed	11	6.1
	Not prepared	2	1.1
	Other	9	5
Female (N = 75)	None	70	93.4
	Embarrassed	4	5.3
	Social barrier	1	1.3

Note:

N = total subjects

MV = missing values: Males = 10; Females = 46

Question 8 indicate that 93% females and 98.4% males have no difficulty obtaining condoms. Only fourteen of the subjects chose to respond to Question 8. Of those fourteen, 3 females and 3 males report embarrassment as an obstacle to obtaining condoms. In response to Question 22, 93.4% females and 87.8% males report no obstacles to obtaining condoms but slightly more report embarrassment (4 females and 11 males).

Inconsistencies

Most of the data demonstrates consistency among the female and male responses; however, a difference did emerge among the sexes, in particular in their responses to Question 5 and Question 19 (see Tables 9 & 10). Both questions concern the reporting of previous sexual experience. Question 5 refers to the previous use of a condom and if answered yes would indicate that the subject has engaged in sexual intercourse.

Table 9. Inconsistencies — Previous Condom Use

Variable	Question 5	% Total
Male	No — Condom Use	32
(N = 187)	Yes — Condom Use	155
		82.9
Female	No — Condom Use	63
(N = 106)	Yes — Condom Use	43
		40.6

Note:

N = total subjects

MV = missing values: Males = 3; Females = 15

Table 10. Inconsistencies — Number Of Partners.

Variable	Question 19	% Total
Male	NS / NP	
(N = 181)	7 / 0	3.9
	42 / 1	23.2
	22 / 2	12.2
	23 / 3	12.7
	18 / 4	10.0
	24 / 5	13.3
	16 / 6	8.8
	6 / 7	3.3
	4 / 8	2.2
	1 / 9	0.6
	9 / 10	5.0
	1 / 12	0.6
	1 / 13	0.6
	1 / 14	0.6
	2 / 15	1.1
	2 / 20	1.1
	2 / 22	1.1
Female	NS / NP	
(N = 101)	40 / 0	39.6
	40 / 1	39.6
	15 / 2	14.85
	4 / 3	3.96
	1 / 4	0.99
	1 / 5	0.99

Note:

N = total subjects

MV = missing values: Males = 9; Females = 20

NS = number of subjects responding to particular answer

NP = number of sexual partners reported

Question 19 pertains to the number of sexual partners within the previous year, again if answered more than zero, the subject admits to engaging in some sort of sexual encounter. Masters, Johnson, & Kolodny (1985) and Cox (1976) suggest that women more reluctantly disclose information regarding their sexual activities and even deny their sexuality, partly as a result of the double standard. The double standard accepts premarital sexual experiences of the male, but demands that females remain virgins until marriage. Females socialized with this belief are presented with a difficulty of trying to achieve a balance between the "Madonnas and the Whores complex" a complex with extreme polarities — Madonnas possessing nurturing capacities and Whores being untamed sexual animals when they admit to their sexual desires (Cox, 1976, p. 261). Oakley (1976) expresses that some women equate preplanning (using contraceptive devices) or even the desire to express themselves sexually with immorality. Of the female participants in this study, 15 did not answer Question 5 and 20 did not answer Question 19 compared to 3 of the male subjects who did not answer Question 5 and 9 males who did not answer Question 19. A large difference in frequencies occurs among those who did respond. Females (40.6%) reported a lower incidence of using condoms than did the males (82.9%). Concerning the number of sexual partners, 39.6% of females reported either 0 or 1 partner within the last year compared to 23.2% males who reported 1 partner and 3.9% who reported 0 partners. The greater difference occurs with the range of number of partners, females reported 0-5 and males reported 0-22 (see Tables 9 & 10). In reviewing this portion of data, one must again consider the observations made by Cox (1976), Masters, Johnson, and Kolodny (1985), and Oakley (1979) regarding the double standard and immorality. Other issues to consider pertaining to this incongruity are differences in how females and males define their sexuality, the Southern region in which these subjects live, and their cultural values.

Additional Findings

The remaining 10 questions considered the subjects' consistency in using condoms, obtaining condoms, and a short knowledge test concerning the transmission of and susceptibility to HIV. To determine if subjects were using any other devices to prevent a potential pregnancy or STD, Question 16, a two part question, concerns the reporting of any device presently being used (see Appendix D). Of those responding, 55.7% females and 61.7% males reported they used no devices to prevent pregnancy. Of those using contraception, 30.4% females took birth control pills and 24% of the males had partners who took birth control pills (see Tables 11 & 12).

Table 11. Additional Pregnancy Devices.

Variable	Question 16a		% Total
Male (N = 188)	None	116	61.7
	Birth Control Pill	45	24.0
	Withdrawal	4	2.1
	Diaphragm	4	2.1
	Other	19	10.1
Female (N = 79)	None	44	55.7
	Birth Control Pill	24	30.4
	Withdrawal	2	2.5
	Abstinence	2	2.5
	Diaphragm	2	2.5
	Other	5	6.4

Note:

N = total subjects

MV = missing values: Males = 2; Females = 42

Table 12. Additional STD Devices.

Variable	Question 16b		% Total
Male (N = 166)	None	155	93.4
	Condoms	5	3.0
	Other	6	3.6
Female (N = 66)	None	65	98.5
	Abstinence	1	1.5

Note:

N = total subjects

MV = missing values: Males = 24; Females = 55

Small percentages of the subjects responded that they used diaphragms, withdrawal, or abstinence to prevent pregnancy. The majority of the subjects, 98.5% of the females and 93.4% of the males, reported that they used no methods to prevent STDs. Only 3% of the males used condoms and only 1.5% of the females cited abstinence to prevent STDs.

Consistency of Using Condoms

Question 9 and Question 20 address the issue of consistently using condoms.

Similar responses to both questions indicated extremely low rates of consistent condom use (see Tables 13 & 14). Both females, 91.6%, and males, 89%, used condoms inconsistently for each sexual encounter; whereas, 82.2% of the females and 80% of the males used condoms inconsistently with each sexual partner. This startling information reinforces the fact that excellent opportunities exist for health care personnel, especially nurses, to educate the public concerning the use of condoms.

Table 13. Consistency Of Using Condoms I.

Variable	Question 9		% Total
Male (N = 185)	No	165	89
	Yes	20	11
Female (N = 83)	No	76	91.6
	Yes	7	8.4

Note:

N = total subjects

MV = missing values: Males 5; Females 38

Table 14. Consistency Of Using Condoms II.

Variable	Question 20		% Total
Male (N = 180)	No	143	80
	Yes	36	20
Female (N = 73)	No	60	82.2
	Yes	13	17.8

Note:

N = total subjects

MV = missing values: Males 10; Females 48

Condom Providers

Question 13 and Question 14 refer to whether or not the sexual partner provides and insists on the use of a condom during each sexual encounter. The majority of the females (96.3%) said their sexual partner does not insist on using condoms and 45.9% said their partners provide the condoms compared to 87% of the males who said their partner does not insist on condom use and only 6.5% have partners who provide condoms (see Tables 15 & 16). Of all the various places condoms can be purchased, 71.5% of the females and 69.2% of the males indicated that they buy condoms from drug stores. Only 2% of the females and 2.9% of the males obtained their condoms from health facilities. Of interest, 0.6% males reported that their mothers provide their condoms (see Table 17).

Table 15. Partner Insists On Condoms.

Variable	Question 13		% Total
Male (N = 184)	No	160	87
	Yes	24	13
Female (N = 82)	No	79	96.3
	Yes	3	3.7

Note:

N = total subjects

MV = missing values: Males 6; Females 39

Table 16. Partner Provides Condom.

Variable	Question 14		% Total
Male (N = 184)	No	172	93.5
	Yes	12	6.5
Female (N = 74)	No	40	54.1
	Yes	34	45.9

Note:

N = total subjects

MV = missing values: Males 6; Females 47

Table 17. Sources of Condoms.

Variable	Question 15		% Total
Male (N = 172)	Drug Store	119	69.2
	Restroom	8	4.7
	Grocery Store	6	3.4
	Health Facility	5	2.9
	Borrow	2	1.2
	Mother	1	0.6
	Other	31	18.0
Female (N = 49)	Drug Store	35	71.5
	Grocery Store	2	4.1
	Health Facility	1	2.0
	Restroom	1	2.0
	Other	10	20.4

Note:

N = total subjects

MV = missing values: Males 18; Females 72

Sources of Information

Question 11 asks the subjects if they have experienced an increased interest in learning more about AIDS during the last six months. Females (79.8%) and males (76.2%) cited they have developed an increased level of interest related to learning more about AIDS (see Table 18). Two questions regarding information sources followed the level of interest question, Question 12 and Question 17 (see Appendix D). The subjects identified television programs or a combination of newspapers, television, radio, and magazines as the major sources of their information regarding the transmission of HIV (see Tables 19 & 20). This data indicates the health care providers most productive routes to transmit information to the college population includes television or the combination of newspapers, television, radio, and magazines. The format for Question 12 and Question 17 was significantly different; therefore, the responses to these questions varied. Question 12 asked the subject to check the appropriate answers; whereas, Question 17 asked the subject to write in a response.

Table 18. Increased Interest.

Variable	Question 11		% Total
Male (N = 189)	Yes	144	76.2
	No	45	23.8
Female (N = 114)	Yes	91	79.8
	No	23	20.2

Note:

N = total subjects

MV = missing values: Males 1; Females 7

Table 19. Source of Information I.

Variable	Question 12		% Total
Male	N, TV, R, M	85	45.2
(N = 188)	Television	35	18.6
	Magazines	16	8.5
	Other	52	27.7
Female	N, TV, R, M	47	42.0
(N = 112)	Magazines	15	13.4
	Television	13	11.6
	Other	37	33.0

Note:

N = total subjects

MV = missing values: Males 2; Females 9

N, TV, R, M = combination answer of newspapers, television, radio, and magazines

Table 20. Source Of Information II.

Variable	Question 17		% Total
Male	Television	76	44.4
(N = 171)	N, TV, R, M	35	20.5
	Newspapers	20	11.7
	Magazines	16	9.4
	Other	24	14.0
Female	Television	36	36
(N = 100)	N, TV, R, M	32	32
	Magazines	12	12
	Other	20	20

Note:

N = total subjects

MV = missing values: Males 19; Females 21

N, TV, R, M = combination answer of newspapers, television, radio, and magazines

AIDS Knowledge

The remaining four questions specifically addressed the topic of AIDS. Question 18 asked the subjects if they knew AIDS could be prevented by consistently using condom, would they use condoms for this purpose? Of those responding, 89.3% of the females and 90% of the males said yes; however, 10.7% of the females and 10% of the males said no (see Table 21).

Question 24, Question 25, and Question 26 asked the subjects about body fluids through which AIDS is transmitted, who is at risk for contracting AIDS, and how AIDS is spread. Of those responding, only 1.7% of the females and 8% of the males correctly answered all three questions (see Table 22). The highest percentage of correct responses occurred for both sexes in correctly answering one question, 45% females and 49.7% males. The responses to Questions 24, Question 25, and Question 26 were collapsed when analyzed; thus, causing an inability to distinguish which of these three questions were answered correctly most often.

Table 21. Prevent AIDS.

Variable	Question 18		% Total
Male (N = 182)	Yes	163	90
	No	19	10
Female (N= 103)	Yes	92	89.3
	No	11	10.7

Note:

N = total subjects

MV = missing values: Males 8; Females 18

Table 22. Knowledge Test.

Variable	Questions 24-26	% Total
Male	NS / CA	
(N = 187)	38 / 0	20.3
	93 / 1	49.7
	41 / 2	22.0
	15 / 3	8.0
Female	NS / CA	
(N = 119)	35 / 0	29
	53 / 1	45
	29 / 2	24.3
	2 / 3	1.7

Note:

N = total subjects

MV = missing values: Males 3; Females 2

NS = number of subjects responding

CA = correct answers, ranging 0-3

CHAPTER V

CONCLUSIONS AND IMPLICATIONS

Discussion of Conclusions

What is the incentive for obtaining condoms today? The data retrieved from the majority of subjects involved in this research indicated that their primary incentive for condom use was the prevention of potential pregnancies, contraceptive use (see Tables 3 & 4). Less than one-third of the subjects indicated they used condoms to prevent potential STDs. This finding corresponds to the small percentage of subjects who correctly answered questions concerning the transmission and susceptibility to AIDS (see Table 22). The subjects either (1) lack sufficient knowledge regarding the use of condoms as prophylactics, (2) lack information regarding the transmission of HIV, or (3) possess a strong sense of immortality, believing HIV cannot affect them or their sexual partner. The researcher anticipated the primary use of condoms to be for prophylaxis because of the potential lethality of HIV and studies demonstrating the efficacy of condoms in preventing HIV transmission. Although the lay public does not generally read research studies, radio, television, magazines, and newspapers daily report conclusions from such investigations. According to the HBM as a predictor of the use of condoms, if an individual's perceived susceptibility and perceived severity are low, which tends to be the case in this study, "Cues to Action" must be intensified in order for the individual to perceive the threat of HIV and increase their use of condoms. The majority of subjects who used protection for STDs were concerned mostly with AIDS and found no obstacles to obtaining condoms (see Tables 5-8). Only a minority of subjects identified obstacles to obtaining condoms. These obstacles ranged from

feelings of embarrassment, experiences with rude drug store attendants, identification of self, lack of knowledge regarding the needed size, and lacking knowledge of sources. Grieco (1987) found that adolescents report three obstacles related to purchasing and using condoms (1) lacking knowledge regarding condom accessibility (i.e. believing one needs parental permission to purchase condoms), (2) experiencing excessive inhibitions (i.e. requiring one to ask for and negotiate type, brand, and quality of condom within hearing distance of others), and (3) lacking interpersonal skills (i.e. lack of appropriate models, film or literature, demonstrating the use of condoms and/or how to initiate discussion of using condoms with a sexual partner). Even though the majority report an absence of difficulty in obtaining condoms, there may be a yet unidentified factor which inhibits using condoms during sexual encounters.

Limitation of Study

This study has limited generalization to the general public due to the homogenous white fraternity and sorority population and sample size.

Implications for Nursing

Health care workers need to develop the tenacity to advocate the use of condoms as exemplified by the following example: Brian Foster a junior at Tulane (in the age group of the college students studied) is quoted as saying, "Every time I go home, my mother tells me to wear a rubber; she says, 'wear your retainer, wear your seat belt — and wear your you-know-what' " ("Blunt Talk," 1987, p. 39). Williams (1986) states nurses have three main tasks regarding public health campaigns against AIDS to: (1) use current information in assisting those at risk for acquiring or transmitting HIV infection to make appropriate changes in their behavior (i.e. the use of condoms), (2) to seek out those individuals who are not at risk and reinforce their current behaviors (i.e. a couple

who have a monogamous relationship or those who chose to remain abstinent), (3) demand funding not only for research but also for public health education and social services.

Although the findings from this study can only be generalized to the population identified, health care providers can respond to the universal implications. Many of the situations existing in this sample population also exist in society at large such as the inconsistent and improper use of condoms. With a lethal virus such as HIV and the routes of its transmission, mainly through sexual contact, health care providers have an obligation of (1) personally becoming more informed, (2) questioning their clients' sexual histories, and (3) informing the general public of ways to prevent the transmission of HIV.

In trying to change health related behaviors in regards to prevention, the two key themes become education and self-responsibility. Although U.S. Secretary of Education William Bennett and U.S. Surgeon General C. Everett Koop disagree on several matters, one point of agreement concerns the role of education in teaching adolescents preventive behavior regarding HIV infection (cited in Barol, Hager, & Wingert, 1987). Nurses, by virtue of their employment in schools, clinics, community agencies, colleges, private practice, and hospitals have many opportunities to foster education regarding HIV transmission, susceptibility, severity, and methods of prevention. Nurses must also foster self-responsibility for each individual, not only for those already ill (in obvious need of assistance) but also for those at risk of becoming ill. If individuals do not use condoms during each sexual encounter because they are timid or lack confidence in expressing their desires to their partners, nurses can assist them to increase their interpersonal skills and thereby foster self-responsibility in their health related behaviors.

Another implication for nursing concerns the desensitization of nurses and the public to condoms. Grieco (1987) recommends a "professional, matter-of-fact, nonjudgmental" approach to discussing condom use (p. 77). If an individual views the nurse as genuinely concerned and able to openly discuss condoms and sexual behavior, the individual will be more likely to respond, ask questions, and learn from the discussion.

Most importantly, before any of the preceding recommendations can be initiated, the nurse must have first explored, identified, and become comfortable with his or her own sexuality. Evans (1987) emphasizes the fact that nurses must be cognizant of their own sexuality and identify their own feelings surrounding AIDS and those it affects before they can adequately care for or offer assistance to individuals with AIDS. Prior to having the ability to assist others in expressing their sexuality, nurses must identify their own sexuality. It is imperative for nurses to take a stand and speak out about HIV prevention and foster each individual's self-responsibility for their own health related behaviors.

Implications for Future Research

In order to present a more accurate distribution of all college age individuals, this researcher recommends a study including subjects from every college at UTK and all classification levels. Specific studies are recommended regarding the motivation of students to use or not use condoms to identify ways to assist individuals in altering their sexual behaviors. Following identification of motivations, health care providers could then attempt to assist individuals in changing their health related behaviors by increasing their perceived benefits of condom use minus their perceived barriers to condom use (HBM). Follow-up studies using the HBM in identifying motivational behavior would not only identify motivations but also expand the use of the instrument. Also, studies

determining the effects of educational programs upon the incidence of HIV infection would help identify areas requiring concentrated efforts of health care providers.

Additionally, knowledge tests concerning various aspects of AIDS and where subjects's acquire the information will assist health care providers in their efforts to educate their particular clients. Implications from this study concerning the distribution of educational information suggest health care providers furnish HIV information to this particular population at each office visit, health fair, health seminar, and school registration.

To clarify inconsistencies of reporting the number of their sexual partners and their sexual experiences, studies must focus on the differences between males and females, their willingness to openly express their sexuality, their definitions of sexuality, the effect of cultural and religious values and beliefs upon sexuality, and the effect of the double standard. The findings of these studies will assist health care providers by identifying common beliefs of both males and females. The health care provider can then use this information as a base to begin educational efforts concerning sexuality. A final recommendation suggests uniform and rigorous testing of condom efficacy as prophylactics against all STDs.

Summary

This study identified that a fraternity and sorority population at UTK primarily used condoms to prevent potential pregnancies, not to prevent STDs, specifically HIV. Efforts to reinforce condom use as prophylactics needs to be enhanced considering the main route of transmission of HIV is via sexual contact. Until a specific antiviral agent or a cure for HIV is discovered, preventive measures must be taken to ensure survival. These preventive measures include but are not limited to wearing a condom during each sexual encounter and reducing the number of anonymous sexual partners. Both recommendations involve changes in an individual's behavior, a challenge for both the

individual and health care providers assisting in this change. At present, educational methods directed to the general public seem to be the most effective method to provide the necessary information to the greatest numbers of people. Williams (1986) states, "public knowledge and awareness is a positive, powerful response to this epidemic [AIDS], and receiving funding and support for this work is imperative" (p. 21). If research funds fail to be appropriated to promote the development of a vaccine or an antiviral agent to HIV infection, and if public health educational efforts are reduced or even eliminated due to a lack of sufficient funding, then we, the human race, have failed and life in the human form may become nonexistent.

LIST OF REFERENCES

LIST OF REFERENCES

- Alderman, M.K. (1980). Self-responsibility in health care / promotion: Motivational factors. Journal of School Health, 50 (1) 22-25.
- American College Health Association. (1987). Making sex safer. Rockville, MD.
- American Nurses' Association Cabinet on Human Rights. (1987). Federal activity on AIDS continues. Capital Update, 5 (7), pp. 4-5.
- Armstrong, D., Gold, J.W.M., Dryjanski, J., Whimbey, E., Polsky, B., Hawkins, C., Brown, A.E., Bernard, E., Kiehn, T. E. (1985). Treatment of infections in patients with the acquired immunodeficiency syndrome. Annals of Internal Medicine, 103, 738-743.
- Barlow, D. (1977). The condom and gonorrhoea. The Lancet, 2, 811-813.
- Barol, B., Hager, M., and Wingert, P. (1987, February). Koop and Bennett agree to disagree. Newsweek, p. 64.
- Becker, M. H. (Ed). (1974). The health belief model and personal health behavior. Thorofare, NJ: Charles B. Slack.
- Becker, M. H., Haefner, D. P., Kasl, S. V., Kirscht, J. P., Maiman, L. A., and Rosenstock, I. M. (1977). Selected psychosocial models and correlates of individual health-related behaviors. Medical Care, 15 (5), 27-46.
- Bennett, J.A. (1986). AIDS: What we know about AIDS. American Journal of Nursing, 86, 1016-1020.
- Berger, J.R. (1987). Neurologic complications of human immunodeficiency virus infection: What diagnostic features to look for. Postgraduate Medicine, 81, 72-77, 79.
- Blumberg, N. (1987). Transfusion-associated AIDS infection. Medical Aspects of Human Sexuality, 21 (4), 28A.
- Blunt talk about AIDS. (1987, February). Newsweek On Campus, p. 39.
- Boffey, P.M. (1987, February 26). Sources say Reagan to back 'responsible' AIDS campaign. Knoxville News-Sentinel, p. A-5.
- Carr, G.S., & Gee, G. (1986). AIDS and AIDS-related conditions: Screening for populations at risk. Nurse Practitioner, 11 (10), 25-26, 29-30, 33-34, 36, 41-42, 44, 46, 48.
- Cates, W. (1987). STDs and contraceptive choice. Medical Aspects of Human Sexuality, 21 (2), 52-53.

- Center for Infectious Disease. (1987, September 15). Reported AID cases: U.S. and Tennessee. Atlanta, GA: Centers for Disease Control.
- Conant, M., Hardy, D., Sernatinger, J., Spicer, D., & Levy, J.A. (1986). Condoms prevent transmission of AIDS-associated retrovirus. Journal of American Medical Association, 255, 1706.
- Conant, M., Spicer, D.W., & Smith, C. (1984). Herpes simplex virus transmission: Condom studies. Journal of Sexually Transmitted Diseases, 11, 94-95.
- Condelli, L. (1986). Social and attitudinal determinants of contraceptive choice: Using the health belief model. Journal of Sex Research, 22, 478-491.
- Condoms: A report based on laboratory tests and on detailed questionnaires filled out by nearly 1900 readers. (1979). Consumer Reports, 44, 583-589.
- Cox, S. (1976). Female psychology: The emerging self. Chicago: Science Research Associates.
- Curran, J.W., Morgan, W.M., Hardy, A.M., Jaffe, H.W., Darrow, W.W., & Dowdle, W.R. (1985). The Epidemiology of AIDS: Current status and future prospects. Science, 229, 1352-1357.
- Dedman, B. (1987, February 24). 'Condom-mania' stirs debate on ads, distribution. Knoxville News-Sentinel, pp. A-1, A-8.
- Definition of HTLV III/LAV infection. (1986). Morbidity and Mortality Weekly Report, 35, 335-339.
- Des Jarlais, D.C., Friedman, S.R., & Hopkins, W. (1985). Risk reduction for the acquired immunodeficiency syndrome among intravenous drug users. Annals of Internal Medicine, 103, 755-759.
- Dirubbo, N.E. (1987). The condom barrier. American Journal of Nursing, 87, 1306-1309.
- Drotman, D.P., & Peterman, T.A. (1987). Your patients need your help to prevent AIDS. Medical Aspects of Human Sexuality, 21 (4), 97, 100, 102.
- Education secretary releases AIDS guide downplaying condoms. (1987, October 7). Knoxville News-Sentinel, p. A-2.
- Eisen, M., Zellman, G.L., & McAlister, A.L. (1985). A health belief model approach to adolescents' fertility control: Some pilot program findings. Health Education Quarterly, 12 (2), 185-210.
- Evans, K.M. (1987). The females AIDS patient. Health Care for Women International, 8 (1) 1-7.
- Felman, Y.M. (1979). A plea for the condom, especially for teenagers. Journal of the American Medical Association, 241, 2517-2518.

- Fincham, J.E., & Wertheimer, A.I. (1985). Using the health belief model to predict initial drug therapy defaulting. Social Science Medicine, 20, 101-105.
- Fink, A.J. (1986). A possible explanation for heterosexual male infection with AIDS. New England Journal of Medicine, 315, 1167.
- Francis, D.P. & Chin, J. (1987). The prevention of acquired immunodeficiency syndrome in the United States: An objective strategy for medicine, public health, business, and the community. Journal of American Medical Association, 257, 1357-1366.
- Goedert, J.J. (1987). What is safe sex?: Suggested standards linked to testing for human immunodeficiency virus. New England Journal of Medicine, 316 1339-1342.
- Gong, V. (1987). Facts and fallacies: An AIDS overview. In V. Gong & N. Rudnick (Eds.), AIDS: Facts and issues (pp. 3-14). New Brunswick, NJ: Rutgers University Press.
- Gong, V., & Rudnick, N. (Eds.). (1987). AIDS: Facts and issues. New Brunswick, NJ: Rutgers University Press.
- Grieco, A. (1987). Cutting the risks for STDs. Medical Aspects of Human Sexuality, 21 (3), 70, 75-78, 83-84.
- Health and Public Policy Committee of the American College of Physicians and The Infectious Diseases Society of America. (1986). Acquired immunodeficiency syndrome. Annals of Internal Medicine, 104, 575-581.
- Hicks, D.R., Martin, L.S., Getchell, J.P., Heath, J.L., Francis, D.P., McDougal, J.S., Curran, J.W. & Voeller, B. (1985). Inactivation of HTLV-III / LAV- infected cultures of normal human lymphocytes by nonoxynol-9 in vitro. The Lancet, 2, 1422-1423.
- Janz, N.K., & Becker, M.H. (1984). The health belief model: A decade later. Health Education Quarterly, 11 (1), 1-47.
- Johnson, E.S., & Vieira, J. (1987). Causes of AIDS: Etiology. In V. Gong & N. Rudnick (Eds.), AIDS: Facts and issues, (pp. 25-36). New Brunswick, NJ: Rutgers University Press.
- Kaplan, H.S., Sager, C.J., & Schiavi, R.C. (1985). Editorial: AIDS and the sex therapist.. Journal of Sex and Marital Therapy, 11, 210-214.
- Katznelson, S., Drew, W.L., & Mintz, L. (1984). Efficacy of the condom as a barrier to the transmission of cytomegalovirus. Journal of Infectious Diseases, 150, 155-157.
- Kingsley, L.A., Kaslow, R., Rinaldo, C.R., Detre, K., Odaka, N., Van Raden, M., Detels, R., Chmiel, J., Kelsey, S.F., Ostrow, D., & Visscher, B. (1987). Risk factors for seroconversion to human immunodeficiency virus among male homosexuals. The Lancet, 1, 345-349.

- Koop, C.E., U.S. Surgeon General (1986). Surgeon General's report on acquired immune deficiency syndrome. U.S. Department of Health and Human Services, pp. 1-36.
- Lange, W.R., & Jaffe, J.H. (1987). AIDS in Haiti. New England Journal of Medicine, 316, 1409-1410.
- Masters, W.H., Johnson, V.E., & Kolodny, R.C. (1985). Human sexuality (2nd ed.). Boston: Little, Brown and Company.
- Nelson, L. (1987, October 2). Disappointing AIDS symposium attendance shows apathy. The Daily Beacon, p. 4.
- Oakley, A. (1976). Sexuality. In S. Cox (Ed.), Female psychology: The emerging self (pp. 264-277). Chicago: Science Research Associates.
- Olds, S.B., London, M.L., Ladewig, P.A., & Davidson, S.V. (1980). Obstetric nursing. Reading, MA: Addison-Wesley.
- Petty, R.E., Cacioppo, J.T., and Schumann, D. (1983). Central and peripheral routes to advertising effectiveness: The moderating role of involvement. Journal of Consumer Research, 10 (2), 135-146.
- Pierce, M.A.S. (1982). The influences of educational method, health beliefs and health behaviors on compliance with breast self-examination. Unpublished master's thesis, The University of Tennessee, Knoxville, TN.
- Potts, M., & Diggory, P. (1983). Textbook of contraceptive practice (2nd ed). New York: Cambridge University Press.
- Rosenstock, I.M. (1974). Historical origins of the health belief model. In M.H. Becker (Ed.), The health belief model and personal health behavior (pp. 1-8). Thorofare, NJ: Charles B. Slack.
- Rosenstock, I. M. (1966). Why people use health services. Milbank Memorial Fund Quarterly, 44 (3), 94-127.
- Scales, P. (1977). Males and morals: Teenage contraceptive behavior amid the double standard. Family Coordinator, 26, 211-221.
- Sensakovic, J.W., & Greer, B. (1987). Preventing AIDS. In V. Gong and N. Rudnick (Eds.), AIDS: Facts and issues (pp. 234-245). New Brunswick, NJ: Rutgers University Press.
- Shearin, R.B., and Morris, S.K. (1985). Contraception for the adolescent. Postgraduate Medicine, 78 (3), 209-212, 215-216.
- U.S. Department of Health and Human Services, and Public Health Services. (1986). Update: Acquired immunodeficiency syndrome — United States. Morbidity and Mortality Weekly Report, 35, 757-766.

- Vieira, J. (1987). The Haitian link. In V. Gong & N. Rudnick (Eds.), AIDS: Facts and issues (pp. 117-123). New Brunswick, NJ: Rutgers University Press.
- Voeller, B., & Potts, M. (1985). Has the condom any proved value in preventing the transmission of sexually transmitted viral disease — for example, acquired immune deficiency syndrome?. British Medical Journal, 291, 1196.
- Williams, A.B. (1986). Public implications of HIV infection. Nurse Practitioner, 11 (10), 8-10, 19-21, 24.
- San Francisco AIDS Foundation. (1986). Women and AIDS. San Francisco: Women's AIDS Network.
- Wong-Staal, F., and Gallo, R.C. (1985). The family of human T-lymphotropic leukemia viruses: HTLV-I as the cause of adult T cell leukemia and HTLV-III as the cause of acquired immunodeficiency syndrome. Journal of The American Society of Hematology, 65, 253-263.

APPENDIXES

APPENDIX A

LETTER OF APPROVAL - DIRECTOR OF SORORITY AFFAIRS

The University of Tennessee
College of Nursing
1200 Volunteer Boulevard
Knoxville, Tennessee 37996-4110
(615) 974-4151

Margaret Williams, Director of Sorority Affairs
Panhellenic Office
1531 Cumberland Avenue

Dear Ms. Williams,

Thank you for meeting with me on such a short notice Monday, May 4, 1987. I appreciate your interest and cooperation concerning my research. Enclosed is a letter of approval stating what we discussed Monday. Please sign this and return to the above address in care of Mildred Fenske. Of the presidents I have been able to contact, I must commend them on their politeness and professionalism. I will send you a copy of my final results.

Sincerely,

Maria Overstreet

Maria L. Overstreet, BSN, RN

Mildred Fenske, PhD, RN
Chair of Thesis Committee

Margaret Williams, Director of Sorority Affairs
Panhellenic Office
1531 Cumberland Avenue

Maria Overstreet / Mildred Fenske
U.T.K. College of Nursing
1200 Volunteer Boulevard

Dear Ms. Overstreet,

You have my permission to contact the presidents of the sororities we discussed in our meeting Monday, May 4, 1987. It is by the president's and member's choice whether or not they will participate in your research. I understand anonymity will be insured for each individual member and each participating sorority.

Sincerely,

Margaret Williams
Panhellenic Advisor

APPENDIX B

LETTER OF APPROVAL - DIRECTOR OF FRATERNITY AFFAIRS

The University of Tennessee
College of Nursing
1200 Volunteer Boulevard
Knoxville, Tennessee 37996-4110
(615) 974-4151

Ben Herrington, Director of Fraternity Affairs
Student Services Building--Room 413
Circle Park

Dear Mr. Herrington,

Thank you for meeting with me on such a short notice Monday, May 4, 1987. I appreciate your interest and cooperation concerning my research. Enclosed is a letter of approval stating what we discussed Monday. Please sign this and return to the above address in care of Mildred Fenske. Of the presidents I have been able to contact; I must commend them on their politeness and professionalism. I will send you a copy of my final results.

Sincerely,

Maria Overstreet

Maria L. Overstreet, BSN, RN

Mildred Fenske, PhD, RN
Chair of Thesis Committee

Ben Herrington, Director of Fraternity Affairs
Student Services Building--Room 413
Circle Park

Maria Overstreet / Mildred Fenske
U.T.K. College of Nursing
1200 Volunteer Boulevard

Dear Ms. Overstreet,

You have my permission to contact the presidents of the fraternities we discussed in our meeting Monday, May 4, 1987. It is by the president's and member's choice whether or not they will participate in your research. I understand anonymity will be insured for each individual member and each participating fraternity.

Sincerely, *Benjamin V. Herrington*

Ben Herrington, Director of Fraternity Affairs

APPENDIX C
INSTRUCTIONS FOR QUESTIONNAIRE

Universtiy of Tennessee, Knoxville
College of Nursing
1200 Volunteer Boulevard
Knoxville, Tennessee 37996-4110
(615) 974-4151

Thank you again for your participation in my research. Please inform your members that anonymity will be insured for each individual participant as well as for the parent organization (do not write name on questionnaire). Please stress the importance of this research and how honesty is of prime importance. I will be available upon request to explain research findings or to answer any questions that may arise from completing the questionnaire. Feel free to contact me through the above address or at my residence. Thank you again for your assistance.

Sincerely,

Maria Overstreet

Maria L. Overstreet, BSN, RN
5709 Lyons View Drive
Knoxville, Tennessee 37919
(615) 584-5031

APPENDIX D
QUESTIONNAIRE

**The University of Tennessee
College of Nursing**

Please check (X) the answer that applies most closely to you.

1. What is your age? _____ (Please specify)
2. What is your marital status? ☐ single ☐ engaged ☐ married
 ☐ separated ☐ divorced
3. What is your present school classification? ☐ freshman
 ☐ sophomore ☐ junior ☐ senior ☐ graduate
4. What is your major field of study? _____
5. Have you ever used condoms during a sexual encounter? ☐ Yes ☐ No
6. Of the following, which would be your **primary** reason for using condoms? (Choose only one please)
 ☐ protection against unwanted pregnancy
 ☐ protection against sexually transmitted diseases
7. Do you have difficulty obtaining condoms? ☐ Yes ☐ No
8. If you do have difficulty obtaining condoms, please list those obstacles or complications. _____

9. Do you use a condom each time you have a sexual encounter?
 ☐ Yes ☐ No
10. If you choose to use condoms to prevent the transmission of sexual diseases, which one disease would you be most concerned with preventing? (Choose only one please)
 ☐ acquired immune deficiency syndrome ☐ genital herpes
 ☐ genital warts ☐ gonorrhea ☐ syphilis
 ☐ other (Please specify) _____
11. Over the last six months, have you become more interested in learning about how to prevent the acquired immune deficiency syndrome (AIDS)?
 ☐ Yes ☐ No
12. Where have you received information concerning the transmission of the acquired immune deficiency syndrome (AIDS)?
 ☐ health facility/personnel (Please specify) _____
 ☐ health fair
 ☐ health related class (Please specify) _____
 ☐ magazines ☐ newspaper ☐ radio ☐ television
 ☐ none ☐ other (Please specify) _____
13. Does your partner insist condoms are used during each sexual encounter? ☐ Yes ☐ No
14. Does your partner provide the condoms? ☐ Yes ☐ No
15. Where do you or your partner obtain condoms?
 ☐ drug store ☐ grocery store ☐ health facility
 ☐ restroom dispenser ☐ other (Please specify) _____

2

16. Do you or your partner use any other device to prevent:
a. pregnancy ☐ No ☐ Yes (Please specify) _____
b. sexually transmitted diseases ☐ No ☐ Yes (Please specify) _____
17. Where have you received the most information concerning the acquired immune deficiency syndrome (AIDS)? _____
18. If you knew the acquired immune deficiency syndrome (AIDS) could be prevented by the consistent use of condoms during sexual encounters, would you use condoms for this purpose? ☐ Yes ☐ No
19. How many different partners have you participated in sexual practices with during this past year? _____ (Please specify)
20. Did you use condoms with each of these partners? ☐ Yes ☐ No
21. If you could prevent one of the sexually transmitted diseases by the use of condoms, which one would you choose to prevent? (Please specify) _____
22. Can you identify any obstacles you encounter that makes it difficult for you to obtain condoms? ☐ No ☐ Yes (Please specify) _____
23. If you use or were to use condoms, which would you be more concerned with? (Please choose only one)
☐ birth control
☐ sexually transmitted diseases
24. What body fluid(s) is the AIDS virus said to be transmitted through?
☐ blood ☐ saliva ☐ semen ☐ tears ☐ urine
☐ other (Please specify) _____
25. How is the AIDS virus spread?
☐ anal intercourse ☐ contaminated needles ☐ blood donation
☐ hugging ☐ kissing ☐ vaginal intercourse
☐ other (Please specify) _____
26. Who is at risk for contracting the AIDS virus? (Check all that apply)
☐ bisexual men ☐ bisexual women ☐ fetus ☐ hemophiliac
☐ heterosexual men ☐ heterosexual women
☐ homosexual men ☐ homosexual women
☐ intravenous drug user
☐ other (Please specify) _____

VITA

Maria Lynn Overstreet was born in Nashville, Tennessee on November 17, 1962. She attended elementary schools in Nashville and Cheatham County and graduated from Cheatham County High School in 1981. From September, 1981 through 1983, she attended Middle Tennessee State University where she studied pre-Nursing and participated in several campus events. In the summer of 1983, she was accepted by the nursing program at Austin Peay State University from which she received her Bachelor of Science degree in Nursing in 1985. While at APSU, she served as the local chapter President of the Student Nurses' Association.

Following graduation she accepted a staff nurse position at Metropolitan Nashville General Hospital and worked in the Surgical Intensive Care Unit. In the Summer of 1986, she entered The Graduate School of The University of Tennessee, Knoxville receiving her Master of Science degree in Nursing in December 1987.

Maria has presented the findings of this thesis at two research symposiums. She organized a wellness program for Fall 1987 registration at The University of Tennessee, Knoxville where she distributed educational pamphlets and condoms to the student body. Ms. Overstreet will travel to Australia for a six month stay following graduation and will return to the United States, to further her education in psychology.