Knowledge And Behaviors Related To Safe Sex In Young Adults

Paula DeCanter

Follow this and additional works at: https://athenacommons.muw.edu/msn-projects

Part of the Nursing Commons

Recommended Citation
DeCanter, Paula, "Knowledge And Behaviors Related To Safe Sex In Young Adults" (1999). MSN Research Projects. 223.
https://athenacommons.muw.edu/msn-projects/223

This Thesis is brought to you for free and open access by the MSN Research at ATHENA COMMONS. It has been accepted for inclusion in MSN Research Projects by an authorized administrator of ATHENA COMMONS. For more information, please contact acpowers@muw.edu.
KNOWLEDGE AND BEHAVIORS RELATED TO
SAFE SEX IN YOUNG ADULTS

by

PAULA DeCANTER

A Thesis
Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Science in Nursing
in the Division of Nursing
Mississippi University for Women

COLUMBUS, MISSISSIPPI

August 1999
Knowledge and Behaviors Related to Safe Sex in Young Adults

by

Paula DeCanter

Professor of Nursing
Director of Thesis

Assistant Professor of Nursing
Member of Committee

Associate Professor of Nursing
Member of Committee

Director of the Graduate School
Abstract

Young adults engage in sexual behaviors that increase the risk of contracting human immunodeficiency virus (HIV) and acquired immunodeficiency virus (AIDS), sexually transmitted diseases (STDs), and unwanted pregnancies. The focus of this descriptive study was knowledge and behaviors related to safe sex behaviors in young adults. Pender’s Health Promotion Model served as the theoretical framework for the study. The following research questions were answered: What are the knowledge level of young adults about safe sex and what effect does knowledge about safe sex have on sexual behaviors of young adults? The target population included young adults who answered questions via the World Wide Web. A sample of 63 completed the Safe Sex Behavior Questionnaire, Knowledge of Safer Sex Practices Questionnaire, and a demographic data form. Descriptive statistics including frequencies and percentages were used to analyze the data. The findings of the study indicated that young adults have knowledge of safe sex practices, but their behaviors confirm that they
do not always practice safe sex. Nurse practitioners need to keep an open attitude about untraditional sexual practices so they can talk openly to clients who participate in different sexual practices. The nurse practitioner should discuss sexual practices with clients and assess for unsafe sexual practices so that the client can be given information on the prevention of HIV/AIDS, STDs, and unwanted pregnancies. Recommendations for further research included further studies to determine factors that influence health-promoting behaviors, particularly safe sex behaviors.
Acknowledgments

This research and the past year’s success were made possible only through the significant roles many people played in my life. I could not have even attempted the endeavor without the love and help of these people. Words cannot convey the love and appreciation I feel for each and every one.

I would like to express to my husband, Mickey, my most heartfelt love and appreciation. I am so thankful for his love, support, and encouragement. Thank you, Mickey, I love you. I also would like to thank my daughter, Jennifer, son-in law, Brent, son, Michael, daughter-in-law, Pam, granddaughter, Jordan, and grandson, the newest arrival Michael III, for the patience they have given me during this trying time.

I am so very thankful for the assistance and advice of my research committee, Dr. Bonnie Lockard, Dr. Melinda Rush, and Dr. Donna Gullette. Without their assistance, this project would have never been completed.
I would like to take the time to thank Mr. Tommy Bozeman and Ms. Ida Jarrell, my bosses, for allowing me the time off work to further my education. Also, my dear friends, Sylvia, Della, Lori, Andrea, Janet, Rachael, and Rosemary, for the encouraging words they have given me over the past year.

Finally, I praise God for allowing each of these people to be a part of my life. I know that it is God who has given me the ability to reach my goals, and I am so grateful.
Table of Contents

Abstract .............................................. iii
Acknowledgments ....................................... v
List of Tables ........................................ ix

Chapter

I. The Research Problem ............................... 1
   Establishment of the Problem ................. 2
   Significance to Nursing ........................ 6
      Education .................................. 6
      Practice .................................. 7
      Research .................................. 7
   Theoretical Framework ........................ 8
   Statement of the Problem ..................... 11
   Research Questions ........................... 12
   Definition of Terms ........................... 12
   Assumptions .................................. 13

II. Review of the Literature ......................... 14

III. The Method ...................................... 36
   Design of the Study ........................... 36
   Setting, Population, and Sample ............. 37
   Instrumentation ................................ 37
   Data Collection ................................ 39
   Data Analysis ................................. 41
   Summary ...................................... 41
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demographic Characteristics of the Sample by Frequency and Percentage</td>
<td>43</td>
</tr>
<tr>
<td>2. Participant Responses (by Percentages) to Knowledge of Safer Sex Practices Questionnaire</td>
<td>47</td>
</tr>
<tr>
<td>3. Participants’ Responses by Percentages on Safe Sex Behavior Questionnaire</td>
<td>49</td>
</tr>
</tbody>
</table>
Chapter I

The Research Problem

According to the Centers for Disease Control (1996), an estimated 12 million new cases of sexually transmitted diseases (STDs) are reported in the United States each year, with two thirds of those infected with STDs younger than 25 years (Beitz, 1998). As of June 1997 there were 612,078 cases of acquired immunodeficiency syndrome (AIDS) in the United States with 86,972 infected with human immunodeficiency virus (HIV) (Prince & Bernard, 1998). AIDS has increased 77% between 1990 and 1992 in heterosexuals ages 13 to 24 years (Beitz, 1998). Women ages 18 to 24 years account for more than one third of all reported pregnancy terminations, substantial proportion of STDs, and increasing percentage of cases of AIDS (Kusseling & Wenger, 1995). HIV/AIDS has become the number one cause of death in young adults ages 25 to 44 years (Centers for Disease Control [CDC], 1996).

Most American adults are aware that HIV/AIDS and STDs are related to unsafe sexual behaviors. In addition, most
Americans know that AIDS is caused by a virus that can be transmitted through sexual intercourse and contaminated drug needles (CDC, 1996). Although young men and women are knowledgeable about AIDS and the practice of safer sex, this knowledge was not a predictor in the use of safer sex practices (DiIorio, Parsons, Lehr, Adame, & Carlone, 1993a).

Establishment of the Problem

National Statistics suggest a major sexual health crisis occurring in young adults related to increased sexual activity (Beitz, 1998); some young adults by age 18 have had as many as five sexual partners (Lewis & Goodhart, 1996) and were sexually active by the age of 14 (Wiley & Gay, 1997). Young adults are experimenting in high-risk sexual behaviors, such as unprotected sex, multiple sex partners, and exchanging sex for money or drugs (CDC, 1998).

The prevalence of STDs in young adults has escalated. An estimated 8 million newly infected STDs are reported each year in young adults less than 25 years of age. Most Americans are aware that the most deadly of the STDs is HIV/AIDS, with 64% of all people diagnosed with AIDS to date have died. But there are over 20 diseases that are
transmitted sexually. Some of the most common STDs include Chlamydia with 4 million new cases each year and gonorrhea 800,000 new cases each year. Ten to 40% of the women with chlamydia and gonorrhea, not adequately treated, develop an upper genital tract infection called pelvic inflammatory disease (PID). Thirty percent of the women with PID develop scarring leading to infertility, 9% have fatal ectopic pregnancies, and 18% have chronic pelvic pain. Ectopic pregnancy is the leading cause of first trimester pregnancy-related deaths in American women (CDC, 1996).

The most common STD in the United States is genital herpes with 30 million Americans infected and 200,000 to 500,000 new cases each year. Human papillomavirus (HPV) affects another one half to one million women each year. HPV was one of the single greatest risk factors for cervical cancer which led to 5,000 deaths in American women in 1995 (CDC, 1996).

Pregnant women who have untreated syphilis account for 40% of fetal or neonatal deaths. Infants infected by their mothers during gestation or birth with STDs have irreparable lifetime damage, including blindness, bone deformities, mental retardation, and death (CDC, 1996).
The cost of treatment for Chlamydia alone is $2 billion and another estimated $4 billion for PID. For every dollar spent on untreated Chlamydia and PID, $12 could be saved in complications with screening and treatment programs (CDC, 1997).

Despite two decades of research for an effective vaccine or definitive treatment for HIV, there is still no cure. The growing epidemic, 40,000 to 80,000 new cases of HIV each year, has not been alleviated (CDC, 1996). Concerns that AIDS will reach even greater proportions in young adults are fueled by factors already known about the unsafe sexual practices, including multi-sex partners, unprotected sex, and oral and anal sex (DiIorio et al., 1993a).

Education has been designated as a key intervention to change risk-associated sexual behavior and continues to be the primary intervention used to prevent the spread of HIV among young adults (DiIorio et al., 1993a). Therefore, knowledge has been considered important for changing behavior. In addition, accurate information encourages informed sexual decisions that will enable young adults to remain healthy (Feigenbaum & Weinstein, 1995).
Health education classes and messages in the media encourage the use of risk-reduction practices among young adults and have been the primary source for AIDS awareness (DiIorio et al., 1993a). Researchers reported that knowledge about STDs and AIDS increased after sex education courses (Feigenbaum & Weinstein, 1995). However, with massive public health programs, large numbers of young adults continue to engage in unhealthy lifestyles; for example, intercourse with numerous partners and intercourse without the use of condoms, including oral and anal intercourse (Beitz, 1992).

According to DiIorio, Parsons, Lehr, Adame, and Carlone (1992), published literature is sparse regarding the sexual behavior and changes in sexual practices among young adults since the AIDS epidemic. Researchers must continue to gather data that identify trends and measure the effectiveness of sex education. Knowing more about the sexual attitudes and behaviors of the young adult population will help educators plan courses for students in schools and colleges to receive accurate information (Feigenbaum & Weinstein, 1995). Therefore, the purpose of this study was to assess the knowledge and behaviors related to safe sex practices in young adults.
Significance to Nursing

This research study was conducted to determine the knowledge and behaviors related to safe sex in young adults. Understanding the definition and perceptions young adults have about safe sex may aid the nurse practitioner in integrating health-promoting behaviors into people's lifestyles. Findings from this study have significance for the nursing profession in the areas of education, practice, and research.

Education. Nurse practitioners are in a position to educate clients regarding contraceptive use and safer sexual practices. Since statistics indicate that young adults are having increased sexual activity with multiple partners the need to educate them is imperative. With the increasing number of STDs, including HIV/AIDS, the nurse practitioner needs to know that although young adults may be knowledgeable about safe sex practices, knowledge is not always a predictor of safe sex behaviors. By understanding the relationship between knowledge of safer sex practices and safer sex behaviors, HIV/AIDS and STD prevention methods targeted at young adults can be developed. Methods should include strategies to increase the young adult's knowledge of HIV/AIDS and STDs. In
addition, an understanding of which factors influence young adults to utilize safer sex behaviors can lead to effective and individualized counseling of this population. The knowledge gleaned from this research could be utilized to develop educational programs in the prevention of HIV and STDs for young adults.

Practice. Nurse practitioners in the primary care setting can utilize the findings of this research in the education and counseling of young adults. The nurse practitioner needs to be open-minded and nonjudgmental which will encourage an honest discussion in regard to sexual practices. Although many sexual practices may be considered unorthodox to the nurse practitioner, keeping an open dialogue with each client about sexual preference is of great importance. The nurse practitioner needs to provide factual information regarding HIV/AIDS and STDs, thus enabling behavior change to include health-promoting practices, particularly safer sex behaviors.

Research. The findings from this research will add to the understanding of the factors associated with safer sex practices of young adults. The nurse practitioner must identify what practices are safe and evaluate practices that can prevent disease which can be accomplished by
staying abreast of the latest statistics on the sexual practices of young adults. More research is needed to determine the knowledge and behaviors of young adults related to safe sex. Publication of nursing research will help nurse practitioners be more aware of various knowledge and behaviors of young adults regarding safe sex.

Theoretical Framework

Pender’s (1996) Health Promotion Model was selected as the theoretical framework to guide this research study. The Health Promotion Model served to validate and strengthen the concepts of the model. Pender (1996) stated the client’s definition and perception of health is how the individual defines health and what it means to them, from feeling well or ill to the absence of disease. According to the Health Promotion Model, in order for a person to prevent a disease or illness, the individual must be educated. By means of education, young adults have an increased knowledge about safe sex practices.

Pender’s Health Promotion Model focuses on an individual’s willingness to change specific behaviors in order to promote a healthier lifestyle. Pender’s Health Promotion Model is a conceptual model that integrates the
goal of health-promoting behaviors into lifestyles. The concepts of the Health Promotion Model include the cognitive-perceptual factors of how the client defines health, the perception of health, and perceived barriers to promoting health. Pender (1996) stresses that each individual’s definition of health is more important than a comprehensive statement regarding health. The client’s definition and perception of health are how the individual defines health and what it means to them, from feeling well or ill to the absence of disease.

Pender (1996) proposed that health is viewed as a positive state and that individuals are motivated to pursue health. The action of a person is determined by unique personal characteristics and experiences. The effects of the characteristics and experiences determine the outcome a person hopes to achieve. Thus, individuals who value health would seek information that would result in healthy behavior. Pender (1996) also subscribes to the belief that those who define health as a positive and stable state are more likely to participate in health-promoting behavior. If a person participates in healthy behaviors, he or she must believe that there are benefits
of their action and they will receive the benefit of health.

In addition to the individual's perceptions, Pender's Health Promotion Model identified modifying factors and variables that affect the likelihood of health-promoting actions. Modifying factors that influence behaviors include demographic variables, interpersonal variables, and situational variables. Demographic variables include sex, age, ethnicity, educational level, and income of the client. Interpersonal variables that influence healthy behavior include interactions and experiences with health professionals, family health history, and expectation of others. Previous experience with health professionals greatly impacts the health behavior of a person. Situational variables include choices of availability of health care, convenience, and willingness of the client to participate.

Based on the concepts of the Health Promotion Model, young adults place a high value on self well-being when provided with information on the risk factors of HIV/AIDS, and STDs. The young adult will then attempt to modify their lifestyle in order to reduce the risk of contracting a disease. If the young adult appreciates the consequences
of participating in actions to prevent HIV/AIDS and STDs, they are more likely to participate in preventive behaviors.

Pender (1996) identifies cognitive and personal factors, as well as behavioral factors, for health-promoting behavior. Pender (1996) states that each individual has a unique health behavior motivation based on individual characteristics and experience. The Health Promotion Model's objective is to incorporate lifestyle changes which promote optimal health and holistic human functioning. The objective of the current study was to educate young adults on the prevention of HIV/AIDS and STDs and, through education, safe sexual practices can prevent these diseases.

Statement of the Problem

With the increasing incidence of STDs and pregnancies, young adults are at great health risks. Education of young adults has been identified as an intervention for the risk of having unprotected sex. Young adults are engaging in sexual behaviors that increase their risk of becoming infected with STDs. In the present study, the knowledge and behaviors related to safe sex among young adults were examined.
Research Questions

Two research questions guided this study:

1. What is the knowledge level of young adults about safe sex?

2. What effect does knowledge about safe sex have on the sexual behaviors of young adults?

Definition of Terms

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

Knowledge of safer sex practices: Theoretical: familiarity with the basic information on measures recommended by the Surgeon General and Centers for Disease Control to reduce one’s risk to the exposure and transmission of HIV/AIDS or STDs through sexual practices. Operational: knowledge of safe sex practices was measured by the Knowledge of Safer Sex Practices Questionnaire (DiIorio et al., 1993a).

Safer sexual practices: Theoretical: engaging in activities that decrease health risks by utilizing accepted devices, methods, and rules when engaging in intercourse. Operational: Safe sexual practices was
measured by the Knowledge of Safer Sex Practices Questionnaire (DiIorio et al, 1993a).

**Young adults: Theoretical:** men and women between the ages of 18 and 29 years who are at the age to be sexually active. **Operational:** men and women between the ages of 18 and age 29 years who consent to participate and complete questionnaires on the World Wide Web.

**Assumptions**

The following underlying assumptions were made:

1. Young adults engage in sexual activities.
2. Young adults have access to computers connected to the World Wide Web.
3. Human beings are driven to seek health care if they believe they are susceptible to disease.
Chapter II
Review of the Literature

The purpose of the literature review was to determine the knowledge and the practice of safe sex among young adults. A review of the literature revealed that young adults engage in sexual behaviors that increase the risk of contracting HIV/AIDS, sexually transmitted diseases, and unwanted pregnancies.

Hale, Char, Nagy, and Stockert (1993) sought to determine the sexual and contraceptive practices of college-age men and women. Further, they desired to compare their findings to similar studies of 1974 and 1979. The setting for this study was the University of Hawaii, and the population included all students who registered for the spring semester of 1991. The sample was selected using a one in nine random selection process. Data were gathered using a mail-out survey technique. Potential subjects were asked to complete the questionnaire which had a cover letter explaining the project and ensuring confidentiality. Completed
questionnaires were to be returned either by mail or deposited at the Student Health Services Center. The questionnaire consisted of 37 questions: nine on demographics, four on health service availability, and 24 on sexual history. The final sample was N = 772, a 40.2% response rate.

CHIFT analysis was used to determine the representativeness of the selection sample obtained. Hale et al. (1993) found that the demographics were representative of the University of Hawaii student body, representation of women (45.4%). The majority of sample (84.2%) were sexually active with a mean age onset of 17.8 years. The researchers determined that the preferred methods of contraception for first sexual encounter were oral contraceptives (women, 14.5%; men, 18.3%) and condoms (women, 35.6%; men, 35.4%).

Additionally, Hale et al. (1993) compared the findings of 1991 with those of 1974 and 1979. The researchers determined a change in sexual and contraceptive practices. Sexual activity began at an earlier age in the 1991 study of college-aged subjects, decreased oral contraceptive use, and increased condom use. In 1974, 67.8% of women and 71.3% of men had been
sexually active. In 1991, 84.9% women and 83.4% of the men
had been sexually active. The 1991 preferred methods of
contraception were oral contraceptives (30%) and the
condom (28.4%). In 1974, 34.8% used oral contraception,
and in 1979 the number was 32.6%.

Hale et al. (1993) concluded that students on
university campuses are becoming more sexually active and
the vast majority are with heterosexual partners. The
findings of 1974 and 1979 compared to 1991 lead the
researchers to believe that sexual engagement occurs at a
younger age and contraceptive practices have diminished
among the student population. This study is relevant to
the nurse practitioner since young adults are more
sexually active and studies show the use of condoms and
oral contraceptives has decreased, which warrants the need
for further education.

A study by DiIorio et al. (1993a) sought to examine
the relationship between knowledge of acquired
immunodeficiency syndrome (AIDS), misconceptions about
AIDS, perceived susceptibility, knowledge of safer sex
practices, future time perspective, and the understanding
and use of safer sex practices by college freshmen. The
researchers used Bandura’s Social Cognitive Theory to
determine how cognitive, perceptual, and environmental factors influence behavior. DiIorio et al. (1993a) focused on selected personal factors as predictors of safer sex behavior.

The study setting included two metropolitan universities with a total population of 1,700 enrolled freshmen from middle- to upper-class households. A nonprobability sample was obtained from enrolled freshmen of both universities. The researchers obtained approval from the Institutional Review Board at the universities and from participating respondents. Questionnaire packets were given to participants who consented to be in the study and attended class on a designated day. The packet included a cover letter explaining the study, consent form, demographic sheet, Modified AIDS Information Survey, Knowledge of Safer Sex Practices Questionnaire, Heimbery Future Time Perspective Questionnaire, and Safe Sex Behavior Questionnaire.

DiIorio et al. (1993a) collected 602 completed questionnaires. The sample was composed of 580 single students with a mean age of 18.1 years. Seventy-five percent of respondents were males. Ethnic representation included Black (55.2%), White (38.1%), and other (6.4%).
The majority (97%) stated they were heterosexual. Because of inequality differences in race and gender, analysis was limited to black males, white males, and white females (n = 352). Sidestep multiple regression analysis was used to interpret the data.

DiIorio et al. (1993a) found a significant correlation between future time perspective and safer sex practices, $r = .22$, $p = .002$, and between misconceptions and safer sex practices for black males, $r = .12$, $p = .045$. Black male respondents who reported use of safer sex practices viewed the future as more predictable, controllable, and with fewer misconceptions about the transmission of HIV. No other significant relationships for other groups emerged. There were no significant relationships between knowledge of AIDS or knowledge of safer sex practices and use of safer sex practices, or between perceived susceptibility and use of safer sex practices. Future time perspective in white male and female respondents did not significantly correlate with reported use of safer sex practices.

In conclusion, DiIorio et al. (1993a) found future time perspective useful in explaining small variances in safer sex practices for black males, but other cognitive
perceptual variables were not strong predictors. In other groups, knowledge of AIDS and misconceptions about AIDS were not significant predictors of safer sex practices or safer sex behaviors. Also, perceived susceptibility to AIDS was not a predictor of the use of safer sex practices; however, the researchers found use of safer sex practices may reduce perceptions of susceptibility.

DiIorio et al. (1993a) stated with the complexity of variables and nonprobability sampling method regarding the role of variables in use of safer sex practices, more research was needed for use of safer sex practices among this population. The study was germane to the current research as the findings reflect knowledge of AIDS and knowledge of safer sex practices were relatively high, but contributed little to explaining the use of safer sex practices. Further studies need to be conducted to see if young adults with knowledge regarding STDs and HIV are practicing safe sex.

Prince and Bernard (1998) conducted a study on a nontraditional college campus to determine if unsafe sexual practices occur on nontraditional university campuses just as frequently as on more traditional campuses. Nontraditional was defined as a college in a
rural setting, fairly isolated from the nearest city, where the majority of students commute.

The setting was a midwestern commuter university. The population included all students who picked their books up at the textbook rental office the first week of class. A total of 2,525 students were asked to complete the survey at the textbook rental office with a 76% response rate, which was approximately 20% of all the students enrolled that semester. The questionnaire included demographics (age, gender, ethnic origin, marital status, and sexual orientation), sexual behaviors (frequency of sex, number of sexual partners, and rate of condom use), and safer sex practices (communicating with sexual partner about HIV, HIV testing and attitude regarding condom use and limiting the number of sexual partners).

A Likert-type scale was used with demographic characteristics, level of sexual activity and HIV/AIDS knowledge, and safer sex behaviors. Chi-square analyses were used to determine the association between sexual behaviors and safer sex practices and participants’ gender, using Cramer’s V and phi statistics to determine the strength of these associations.
The demographic composition of the university population consisted of 57% female, 81% White, 23% age 19 or under, 44% between 20 to 24, and 33% age 25 or older. Seventy-five percent were single, with approximately 20% divorced. Ninety-seven percent reported being heterosexual.

Forty percent of the sample reported having sex at least once a week, women more than men, with 20% reporting having sex less than once per month and 16% reported not having sex in the past year. The difference between men and women was statistically significant, \( \chi^2(4, N = 1,885) = .69, p = .0002, \) Cramer's \( V = .107. \) Just over 68% of the participants reported they practiced monogamy during the past year, with 20% reporting two partners and 15% three or more partners in the past year. Men were significantly more likely than women to have multiple sexual partners, \( \chi^2 (4, N = 1,609) = 47.81, p < .0001, \) Cramer’s \( V = .172. \) Fifty percent of the students reported never using condoms, with only 10.7% using condoms all the time. More men than women reported using condoms. The difference in the rates of condom use between men and women was statistically significant, \( \chi^2 (5, N = 1,609) = 22.00, p = .0005, \) Cramer’s \( V = .135. \)
When communicating with sexual partners about HIV/AIDS, women were more likely to indicate agreement to practice HIV/AIDS communication strategies than men; chi-square ranged from 28.61 to 123.47, all at p < .0001; and phi coefficients ranged from .129 to .269. Twenty-five percent men and 55% women agreed that a person should be tested for HIV prior to starting a new relationship, but only 60% men and less than 50% women reported ever being tested for HIV. There was no significant difference between men and women on the attitude toward the use of condoms. Although the association between the rate of condom use and the number of sexual partners was significant, 50% of the participants who had three or more partners in the past year reported never using a condom.

Prince and Bernard (1998) recognized that nontraditional colleges are not immune to HIV related to unsafe sexual practices and that college students' sexual behaviors are not associated with the type of university they attend. Prince and Bernard (1998) concluded that although many students communicated with their partners about safer sex practices, their discussions did not evolve into adoption of safer practices. This study by Prince and Bernard (1998) was germane to the current
research as the findings concluded that students communicate about safe sex practices, but their discussions were not a predictor of practicing safe sex, which mandates future research.

In 1997, MacNair-Semands and Cody examined a multi-disciplinary, multi-media college course, the HIV Pandemic and AIDS, which focused on the knowledge, attitudes, and behaviors of students toward AIDS. The course content was devoted to enhancing HIV prevention behaviors and included the following content: pathophysiology of HIV, modes of transmission, correct condom use, cultural and gender related differences in negotiating safer sex behaviors, effects of alcohol and drugs on judgment, and risk of unsafe sex. Variables included HIV knowledge, current risk, perceived vulnerability, and behavioral changes. Knowledge scores were based on true and false statements about HIV virus, its contraction, testing, risk groups, and prevention. Risk scores were derived by assigning constant values to responses from a combination of the following items, forming a continuous scale: number of partners in the last year, how expected was the latest new sexual partner, type of contraception used in most recent encounter with new partner, and whether they had engaged
in any of the following within the past year without a condom: genital intercourse, anal intercourse, or oral intercourse. Perceived vulnerability scores were formed with four questions about whether the participant felt susceptible to contracting the virus and two items regarding being tested for HIV. Behavioral change scores were calculated by the sum of affirmative answers to the following: discussing safe sex with potential partner, becoming more selective about partners, beginning to use condoms for the first time, and learning more about HIV/AIDS.

The College Student Behavior Questionnaire was distributed on the first and last day of class to students in a mid-sized urban university in the Southeast. One hundred and thirty one volunteers participated in the study which included two control groups, students enrolled in health related classes, and a third pretest group. The College Student Behavior Questionnaire assesses HIV/AIDS knowledge, attitudes, and specific risk behaviors, with a focus on relationship status, condom use, and substance use.

A quasi-experimental design was implemented to examine the effects of the HIV course on the mentioned
dependent variables. Pretesting was implemented on the control and experimental groups.

A multi-variate analysis of variance (MANOVA) was performed on the measures acquired from the pretested groups to ensure that participants were not different on the measured variables prior to the course. The MANOVA on the dependent variable scales was not statistically significant, \( F(8, 188) = 1.01, p = 0.43, \) Wilks = 0.92, indicating that persons in the pretest groups were not different in knowledge or attitudes prior to participation in their respective courses. A second MANOVA was conducted on posttesting dependent variables to examine possible influence of the HIV course on students. The overall univariate analysis indicated that differences in control and HIV course groups were significant for perceived vulnerability to HIV, \( F(1, 75) = 4.72, p = 0.03, \) and behavioral change score, \( F(1, 75) = 23.85, p = 0.000. \) Students in the HIV course reported more behavioral changes at posttest and felt less vulnerable to contracting HIV than the control group at posttest.

MacNair-Semands and Cody (1997) concluded that HIV courses on a college campus may increase preventative behaviors, help students talk about safer sex with
potential partners, increase the tendency to become more selective of sexual partners, and increase learning about HIV/AIDS. MacNair-Semands and Cody’s (1997) research is germane to the current researcher’s endeavor as their finding reflects that education is beneficial in the prevention of HIV/AIDS and other STDs.

Earlier O’Leary, Goodhart, Jemmott, and Boccher-Lattimore (1992) conducted a study to explore the utility of variables from social cognitive theory in predicting safer sexual practices among college students in New Jersey. Conceptual factors assessed were knowledge, perceived potential risks, negative outcome expectancies of condom use, perceived social norms, self-efficacy to discuss a partner’s sexual history, and self-efficacy to perform safer sexual behaviors. Demographic information included age, sex, student status, race, religious orientation, and annual income.

Participants were chosen randomly from registration records of four New Jersey colleges. Questionnaires were mailed to 2,400 students, with 923 surveys returned. Respondents were instructed to respond anonymously.

O’Leary et al. (1992) predicted the use of condoms more frequently during intercourse would be associated
with (a) more knowledge concerning AIDS, (b) greater perceived potential risk, (c) perceptions of more positive social norms for safer behavior, (d) fewer negative expected outcomes of condom use, (e) stronger perceived self-efficacy to discuss history and to perform safer behavior, and (f) less frequent use of alcohol and other drugs in combination with sex.

Results of the study with unmarried, sexually active students reflected men expected more negative outcomes of condom use, \( t(395) = 3.73, p < .01 \). Women reported higher perceived self-efficacy both for history taking, \( t(389) = 2.05, p < .05 \), and for achieving safer behavior, \( t(389) = 2.02, p < .05 \). Men were more likely to have sex under the influence, \( t(392) = 2.31, p < .05 \). Three differences between students related to academic status were obtained. Undergraduate students had marginally less knowledge about AIDS than graduate students, \( t(389) = 1.83, p < .07 \); perceived themselves to be less vulnerable, \( t(387) = 2.11, p < .05 \); and reported stronger perceived social norms for safer sex, \( t(390) = 2.18, p < .05 \).

Analysis of variance (ANOVA) indicated significant differences between racial groups for level of knowledge, \( F(3, 394) = 5.95, p < .01 \). Post hoc \( t \) tests indicated that
white students were significantly more knowledgeable than students from the Asian/Pacific Islands, $t = 2.83$, $p < .01$, and black students, $t = 2.82$, $p < .01$. A racial group difference for the tendency to have sex while under the influence of alcohol or other drugs was also significant, $F(3, 364) = 3.07$, $p < .05$, with white students reporting the use of alcohol or other drugs significantly more often than black students.

In conclusion, O’Leary et al. (1992) confirmed a difference in knowledge of AIDS in different racial groups as well as students in different academic levels. But knowledge or perceived susceptibility was not associated with safer sex practices. However, in the current study, knowledge was studied in relation to the use of safer sex practices.

In another study by Dilorio et al. (1993b) knowledge of AIDS and safer sex practices of college freshmen were assessed. Questionnaires were distributed at three private universities in a large southeastern metropolitan area. Six hundred eighty-nine college freshmen completed the Modified DiClemente AIDS Information Survey, and the Knowledge of Safe Sex Practices Questionnaire.
The Modified DeClemente AIDS Information Survey contains a 31-item questionnaire that assesses knowledge of, and misconception about, susceptibility to AIDS. Items are scored on a true-false format. Total scores for the knowledge and misconception subscales are found by summing correct responses. No points are given for wrong answers.

The Knowledge of Safe Sex Practices Questionnaire assesses level of knowledge about safer sexual practices. The Knowledge of Safe Sex Practices Questionnaire consists of 23 items, 14 related to safer sex practices and 9 unsafe practices. Respondents indicate an item either safe or unsafe. Total scores are found by summing correct responses.

Data were analyzed using frequencies and percentages. Chi-square tests were computed to compare answers of men and women, Blacks and Whites, and sexually active and non-sexually active students.

Results demonstrated respondents have a high level of knowledge regarding the cause, transmission, and seriousness of AIDS. On the average, 23 of 25 knowledge items were answered correctly, and 4.9 of 5 misconception items were answered correctly. However, the knowledge of the medical aspects of AIDS was lower. On the Knowledge of
Safe Sex Practices Questionnaire survey the majority of the respondents demonstrated high levels of knowledge. An average of 19 of 23 respondents answered correctly.

DiIorio et al. (1993b) concluded that participants knew the basic facts about the cause and transmission of AIDS but were less knowledgeable about the medical aspects of AIDS, and there was increased concern about knowledge of safer sex practices. Again, the respondents were knowledgeable about the basic information, but were less knowledgeable about specific practices. The relationship between knowledge of HIV/AIDS, or STDs, and knowledge of safer sex practices to the use of safer sex behavior was not revealed from this study; therefore, the present study addressed this question.

In a related study, Feigenbaum and Weinstein (1995) studied the sexual attitudes and behaviors of students to determine if sex education classes influenced the morality of young adults, and encouraged earlier sexual activity. Feigenbaum and Weinstein sought to affirm that courses offered by colleges were not a negative influence on the morals of the students. Feigenbaum and Weinstein (1995) hypothesized that "there would be no difference in attitudes about premarital sex, experiencing sexual
intercourse, participating in oral sex, and views about abortion among students before and after they took the human sexuality or the general health course” (p. 115).

The setting was a large northeastern community college; the population included students who registered for one of two classes, Human Sexuality or General Health. A cross-sectional study was used to compare pretest with posttest responses. The students responded anonymously so pairing of pretest and posttest responses was not possible. Eighteen hundred and twenty-five students participated in completing the pretest which was handed out in class 2 weeks after the beginning of class.

Feigenbaum and Weinstein (1995) tested their hypothesis by administering a pretest to 350 students on three separate occasions. In addition, they interviewed 75 students in the sample after the pretest to determine the readability of the questionnaire. Two weeks prior to the end of class, 80% of the sample (n = 1,456) completed the posttest. The posttest consisted of 76 questions which included 9 demographic, 3 on prior sexuality, 27 regarding sexual attitudes and beliefs, and 37 on a variety of sexual behaviors. Questionnaires were collected by the researcher and coded by course and instructor.
The contents of the health and human sexuality courses were different; therefore, these data were analyzed separately. If a significant overall chi-square was obtained, then standardized residuals greater than the absolute value of 2' (a confidence limit) were addressed.

The majority of the pre-course respondents were 18 to 20 years old (79.6%), gender representation included men (45.2%) and women (54.8%). Ethnic groups included White (84%), Black (8.6%), Hispanic (4.2%), and Asian (1.8%). Religious affiliations represented Catholic (65%), Jewish (11.5%), Protestant (9.6%), and other (13%).

Feigenbaum and Weinstein (1995) found that the respondents received their sexual education from friends (46.1%), school (20.5%), parents (12.4%), and books (6.7%), but 13.6% had not received any type of sex education. When comparing first sexual intercourse experience, 69.6% of men and 59.5% of women experienced sex by the age of 17 years with 88.1% having experienced sexual intercourse prior to attending the course. No significant difference was noted in pretest and posttest sample scores. Eighty-four percent of pretest and posttest respondents approved of premarital sexual intercourse for both men and women. Eighty-five percent of women and men
in the pretest and posttest samples had experienced oral sex, and 22% of the total sample had experienced anal sex. Approximately 83% of the pretest and posttest respondents from both courses believed that abortion should be legal.

Additionally, Feigenbaum and Weinstein (1995) found one significant difference in the pretest and posttest responses in the Human Sexuality classes, with high-risk sexual behaviors one of the components of the curriculum. Prior to the course 37.2% students used a method of birth control, and after the course 54.2% used some form of birth control.

Feigenbaum and Weinstein (1995) concluded that more than 80% of the students in the sample were sexually active prior to the course and found no significant differences in attitudes and behaviors after they took the courses. Ninety-four percent of the students reported that they would continue to be sexually active. Twenty-five percent men and 20% of the women reported having six or more partners. Attitudes regarding sex did not change after completion of the course. Twenty-two percent of the total sample had experienced anal sex, but only 1% of the sample was reported to be homosexual and another 1% bisexual. Thirteen percent of the Human Sexuality class
reported that they would use condoms and spermicide as a method to prevent sexually transmitted diseases and 23% to prevent pregnancy. Of the total sample, 82% held the pro-choice opinion on abortion issues pretest and posttest.

Feigenbaum and Weinstein's (1995) research was germane to the current study since their findings reflect that students are sexually active. The students who were sexually active were not as effective as they needed to be in using a method to prevent pregnancy or sexually transmitted diseases. They were misinformed and had misconceptions about gender-specific sexuality issues, and lacked effective sexual education. Feigenbaum and Weinstein (1995) recommended further research to determine if young adults with knowledge regarding STDs and HIV are practicing safe sex.

Although some HIV/AIDS research exist on young adults, the research is limited. This review of the literature revealed that young adults are having sexual intercourse at an earlier age and are generally knowledgeable about AIDS, but knowledge did not relate to the use of safer sexual behaviors (DiIorio et al., 1993a; Hale et al., 1993; O’Leary et al., 1992). Knowledge alone is insufficient to promote risk-reducing sexual practices.
Although advances in the treatment of HIV have been made, morbidity produced by HIV is still staggering (MacNair-Semand & Cody, 1997; Prince & Bernard, 1998). Education is the primary intervention used to prevent the spread of HIV/AIDS among young adults. Knowing more about the sexual attitudes and behaviors of young adults from this research is valuable in the development and implementation of HIV/AIDS preventive measures designed to reduce the risk of infection among young adults (Feigenbaum & Weinstein, 1995).
Chapter III

The Method

The purpose of this descriptive study was to identify the relationship between the knowledge and behaviors related to safe sex in young adults. This chapter will describe the research methods used to investigate the variables of interest. The method of data collection, the population, the sample, the setting, and the instrumentation will be discussed.

Design of the Study

A descriptive research approach was utilized for this study. Polit and Hungler (1995) define descriptive research as a study that has as its objective the accurate portrayal of the characteristics of individuals, situations, or groups and the frequency with which certain phenomena occur. Little is known about the knowledge of safe sex practices and behaviors of young adults regarding safe sex; therefore, a descriptive research design is considered appropriate. Knowledge of safe sex practices
and behaviors of young adults regarding safe sex were the
variables of interest in this descriptive study.

Setting, Population, and Sample

The setting for this study was the Internet connected
to the World Wide Web. Ten major universities were
contacted enlisting the use of the listservs for each of
these universities. A listserv is a program that
distributes e-mail to a large number of people who are
subscribers to the same list.

The target population for the study included
university students across the United States. The
participants were college students, ages 18 to 29 years.
The study utilized a nonprobability, convenience sample.
The sample size was determined by the number of
questionnaires returned via e-mail from March 17-April 30,
1999.

Instrumentation

Three measures were used for data collection. The
researcher-designed DeCanter Demographic Survey (see
Appendix A) was developed to provide information regarding
gender, age, marital status, ethnicity, education
background, religious affiliation, regional area, sexual
preferences, income, HIV status, and sexually transmitted disease status of the sample. Two questionnaires used to measure sexual practices and knowledge were the Knowledge of Safer Sex Practices Questionnaire and the Safe Sex Behavior Questionnaire. The Knowledge of Safer Sex Practices Questionnaire consists of nominal data and was designed by DiIorio et al. (1993a). The Knowledge of Safer Sex Practices Questionnaire was designed to assess the level of knowledge regarding general information on recommended safe sexual practices. The instrument contains 23 questions, 14 are safe sexual practices and 9 are unsafe sex practices (see Appendix B). Respondents could choose safe sex practice or unsafe sex practice. The total possible scores range from 0 to 23; no points were given for incorrect or “don’t know” responses. DiIorio et al. (1993a) computed the internal consistency using Kuder-Richardson’s coefficients on a sample of 352 college freshmen as .44. This low value attributed to lack of variance in subjects’ responses.

The Safe Sex Behavior Questionnaire was developed by DiIorio et al. (1992) to measure use of safe sex practices among adolescents. In this study, the Safe Sex Behavior Questionnaire measured the dependent variable of interest.
Initial reliability computed was .82 among 89 college freshmen. Construct validity was assessed by correlating the Safe Sex Behavior Questionnaire with measures of general assertiveness and general risk taking. The instrument is a 24-item, 4-point Likert scale (see Appendix C). Fifteen items are worded positively and 9 are worded negatively. Responses to each item range from never (1) to always (4). Total scores range from 24 to 96. The higher the score, the greater the frequency of use of safe sex practices.

Permission to use the Knowledge of Safer Sex Practices Questionnaire and the Safe Sex Behavior Questionnaire survey instruments was requested and granted (see Appendix D).

Data Collection

Prior to implementation of the study, approval from the Committee on Use of Human Subjects in Experimentation at Mississippi University for Women was granted (see Appendix E). The researcher enlisted a telecommunication service provider, EBI, to provide online service to the Internet. A home-page was posted on the World Wide Web introducing the researcher and the subject being researched. The surveys for data collection were compiled
in the following sequence: home-page on the World Wide Web, informed consent (see Appendix F), the DeCanter Demographic Survey, the Knowledge of Safer Sex Practices Questionnaire, and the Safe Sex Behavior Questionnaire.

The home-page explained why the research was being conducted and gave the reader the option to "leave" or "enter" the survey. The informed consent consisted of an explanation of the study, risks, confidentiality, withdrawal from the study, cost to subjects, payment for participation, and where the researcher could be contacted for answers to questions. At this time the participant had the option again to either continue the survey or leave, to continue gave automatic consent to participate in the study. The DeCanter Demographic Survey followed. Once completed the participant could either submit or leave the study. The Knowledge of Safer Sex Practices Questionnaire and the Safe Sex Behavior Questionnaire were designed to be submitted or the participant could exit the study. The study was strictly voluntary. The researcher's last page consisted of a thank you to all participants for taking the time to participate in the study.
Data Analysis

Descriptive statistics were utilized to describe the sample. Ages of participants, race, and gender are nominal data and were reported as frequencies and percentiles. Data were analyzed using the ANOVA. This statistical measure was used to determine the relationship between the independent variables and safer sex practices.

Summary

In summary, a descriptive research design was utilized to describe the sociodemographics, knowledge, and behaviors related to safe sex of young adults. The research was conducted to identify the knowledge and safe sexual behaviors of young adults. The setting, sample, and population for the study were defined, and the methods of data collection and analysis were related. A convenience sample design was utilized with 63 respondents via the Internet. The sample completed the Knowledge of Safer Sex Practices Questionnaire and the Safe Sex Behavior Questionnaire. Descriptive statistics including frequencies and percentages were used to analyze the data. In the subsequent chapters, the findings of the study are revealed and the implications of those findings are discussed.
Chapter IV

The Findings

The purpose of this study was to identify the knowledge and behaviors of safe sex practices of young adults. A descriptive study was conducted of young adults who responded to surveys posted on the Internet. The research sample was composed of 63 young adults between the ages of 18 to 29 years. Data for the study were obtained using surveys which were posted on the World Wide Web and returned via e-mail. The Knowledge of Safer Sex Practices Questionnaire, the Safe Sex Behavior Questionnaire, and the DeCanter Demographic Survey were utilized for data collection.

Characteristics of the Sample

The sample for this study was comprised of 63 young adults who had a computer and access to the World Wide Web. A total of 68 college students e-mailed a response to the questionnaires via the Internet. However, only 63 of the respondents met the sample criteria. The remaining 5
respondents answered only one or two of the surveys, therefore, were excluded from the sample (N = 63).

The respondents ranged in age from 18 to 29 years (M = 24.3 years). Sixty-nine percent were female, 84.1% were Caucasian, 4.8% were African American, 4.8% were Hispanic, 6.4% were of other ethnic groups. Descriptive information regarding demographic characteristics of the sample is depicted in Table 1.

Table 1

Demographic Characteristics of the Sample by Frequency and Percentage

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>f</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sex</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>19</td>
<td>30.2</td>
</tr>
<tr>
<td>Female</td>
<td>44</td>
<td>69.8</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 - 21</td>
<td>12</td>
<td>19.0</td>
</tr>
<tr>
<td>22 - 25</td>
<td>26</td>
<td>41.3</td>
</tr>
<tr>
<td>26 - 29</td>
<td>25</td>
<td>39.7</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single (never married)</td>
<td>39</td>
<td>61.9</td>
</tr>
<tr>
<td>Married (male/male)</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Married (male/female)</td>
<td>19</td>
<td>30.2</td>
</tr>
<tr>
<td>Married (female/female)</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Separated</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Divorced</td>
<td>3</td>
<td>4.8</td>
</tr>
<tr>
<td>Widowed</td>
<td>0</td>
<td>0.0</td>
</tr>
</tbody>
</table>

(table continues)
Table 1 (continued)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>( f^{*} )</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ethnic background</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>53</td>
<td>84.1</td>
</tr>
<tr>
<td>African American</td>
<td>3</td>
<td>4.8</td>
</tr>
<tr>
<td>Native American</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Hispanic</td>
<td>3</td>
<td>4.8</td>
</tr>
<tr>
<td>Asian</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dropped out of school</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>High school graduate</td>
<td>4</td>
<td>6.3</td>
</tr>
<tr>
<td>1 year college/vocational school</td>
<td>6</td>
<td>9.5</td>
</tr>
<tr>
<td>2 years college/vocational school</td>
<td>8</td>
<td>12.7</td>
</tr>
<tr>
<td>3 years college</td>
<td>12</td>
<td>19.0</td>
</tr>
<tr>
<td>4 years college</td>
<td>13</td>
<td>20.6</td>
</tr>
<tr>
<td>College graduate</td>
<td>17</td>
<td>27.0</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td><strong>Religious affiliation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protestant</td>
<td>22</td>
<td>34.9</td>
</tr>
<tr>
<td>Catholic</td>
<td>15</td>
<td>23.8</td>
</tr>
<tr>
<td>Jewish</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>12</td>
<td>19.0</td>
</tr>
<tr>
<td>None</td>
<td>14</td>
<td>22.2</td>
</tr>
<tr>
<td><strong>Region</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>North</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Northwest</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Northeast</td>
<td>5</td>
<td>7.9</td>
</tr>
<tr>
<td>South</td>
<td>13</td>
<td>20.6</td>
</tr>
<tr>
<td>Southeast</td>
<td>17</td>
<td>27.0</td>
</tr>
<tr>
<td>Southwest</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Central USA</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Outside USA</td>
<td>24</td>
<td>38.1</td>
</tr>
<tr>
<td><strong>Sexual preference</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>58</td>
<td>92.1</td>
</tr>
<tr>
<td>Bisexual</td>
<td>3</td>
<td>4.8</td>
</tr>
<tr>
<td>Homosexual</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Lesbian</td>
<td>1</td>
<td>1.6</td>
</tr>
</tbody>
</table>

(table continues)
Table 1 (continued)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>f²</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$10,000-25,000</td>
<td>28</td>
<td>44.4</td>
</tr>
<tr>
<td>$25,000-40,000</td>
<td>17</td>
<td>27.0</td>
</tr>
<tr>
<td>$40,000-55,000</td>
<td>13</td>
<td>20.6</td>
</tr>
<tr>
<td>$55,000-70,000</td>
<td>5</td>
<td>7.9</td>
</tr>
<tr>
<td>&gt; $70,000</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Tested HIV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>33</td>
<td>52.4</td>
</tr>
<tr>
<td>Yes</td>
<td>30</td>
<td>47.6</td>
</tr>
<tr>
<td>Treated for HIV</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>63</td>
<td>100.0</td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Treated for STDs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>57</td>
<td>90.5</td>
</tr>
<tr>
<td>Yes</td>
<td>6</td>
<td>9.5</td>
</tr>
<tr>
<td>What type STD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chlamydia</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Gonorrhea</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Herpes (genital)</td>
<td>1</td>
<td>1.6</td>
</tr>
<tr>
<td>Genital Warts</td>
<td>2</td>
<td>3.2</td>
</tr>
<tr>
<td>Syphilis</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>Other</td>
<td>0</td>
<td>0.0</td>
</tr>
<tr>
<td>None</td>
<td>57</td>
<td>90.5</td>
</tr>
</tbody>
</table>

*N = 63

Findings Related to the Research Questions

Two research questions guided this investigation. The questions are:

1. What is the knowledge level of young adults about safe sex?
2. What effect does knowledge about safe sex have on the sexual behaviors of young adults?

To answer the research question, what is the knowledge level of young adults about safe sex, the participants were asked 23 questions from the Knowledge of Safer Sex Practices Questionnaire. The participants could choose either safe sex or not safe sex. Over 95% of the participants agreed that abstaining from sexual intercourse, having intercourse with one faithful mate, masturbation, hugging, caressing, body massage, and the use of condoms during sexual intercourse are safe sex practices. Another 95% agreed that having anal sex, sex with someone you don’t know well, sex without the use of a condom, or sex with more than one partner were not safe sex practices. Listed in Table 2 are the participants’ responses to the questionnaire.
### Table 2

**Participant Responses (by Percentages) to the Knowledge of Safer Sex Practices Questionnaire**

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Safe Sex</th>
<th>Not safe sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having sexual intercourse with only one faithful uninfected partner.</td>
<td>95.2</td>
<td>4.8</td>
</tr>
<tr>
<td>2. Having oral sex without using a protective barrier (rubber, rubber dam).</td>
<td>11.1</td>
<td>88.9</td>
</tr>
<tr>
<td>3. Having sexual intercourse with a person who injects illegal drugs into his/her veins.</td>
<td>1.6</td>
<td>98.4</td>
</tr>
<tr>
<td>4. Having more than one sex partner.</td>
<td>3.8</td>
<td>96.8</td>
</tr>
<tr>
<td>5. Taking birth control pills.</td>
<td>27.0</td>
<td>73.0</td>
</tr>
<tr>
<td>6. Using a diaphragm during sexual intercourse.</td>
<td>22.2</td>
<td>77.8</td>
</tr>
<tr>
<td>7. Urinating after sexual intercourse.</td>
<td>17.5</td>
<td>82.5</td>
</tr>
<tr>
<td>8. Avoiding sexual activities that may cause bleeding of tissues of the vaginal or rectum.</td>
<td>95.5</td>
<td>9.5</td>
</tr>
<tr>
<td>9. Avoiding contact with semen, blood, or vaginal secretions of sexual partner.</td>
<td>95.2</td>
<td>4.8</td>
</tr>
<tr>
<td>10. Using condoms when engaging in oral sex.</td>
<td>98.4</td>
<td>1.6</td>
</tr>
<tr>
<td>11. Not having sexual intercourse with a partner who has other partners.</td>
<td>92.1</td>
<td>7.9</td>
</tr>
<tr>
<td>12. Having sex with someone you don’t know well.</td>
<td>1.6</td>
<td>98.4</td>
</tr>
<tr>
<td>13. Using a spermicide (an agent that kills sperm) containing nonoxynol-9.</td>
<td>47.6</td>
<td>52.4</td>
</tr>
</tbody>
</table>

*(table continues)*
Table 2 (continued)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Safe Sex</th>
<th>Not safe sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. Examining sexual partners for sores or abrasions in the genital area.</td>
<td>82.5</td>
<td>17.5</td>
</tr>
<tr>
<td>15. Mutual masturbation (stimulation).</td>
<td>93.7</td>
<td>6.3</td>
</tr>
<tr>
<td>16. Abstaining from sexual intercourse.</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>17. Having sexual intercourse without using a condom.</td>
<td>3.2</td>
<td>96.8</td>
</tr>
<tr>
<td>18. Masturbation (self-stimulation).</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>19. Having anal intercourse.</td>
<td>4.8</td>
<td>95.2</td>
</tr>
<tr>
<td>20. Hugging, caressing, body massage.</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>21. Using a condom (rubber) during sexual intercourse.</td>
<td>100.0</td>
<td>0.0</td>
</tr>
<tr>
<td>22. Using latex condoms or pieces of latex when engaging in oral sex.</td>
<td>95.2</td>
<td>4.8</td>
</tr>
<tr>
<td>23. Using a latex rather than a non-latex condom.</td>
<td>92.1</td>
<td>7.9</td>
</tr>
</tbody>
</table>

Note. Respondents were asked to select either safe sex or not safe sex.

To answer the research question, what effect does knowledge about safe sex have on the sexual behaviors of young adults, the 63 participants answered 27 questions from the Safe Sex Behavior Questionnaire. The participants answers consisted of never, sometimes, most of the time, or always. Fifty percent or more of the participants never
engaged in sexual intercourse on a first date, anal intercourse, or had sexual intercourse with someone they knew to be bisexual or gay. Over 40% of participants always insisted on the use of a condom for sexual intercourse, abstained when their partner’s sexual history was not known, avoided sex when they had genital sores or irritation, and avoided direct contact with their partner’s blood. The participants responses are depicted in percentages as shown in Table 3.

Table 3

Participants’ Responses by Percentages to the Safe Sex Behavior Questionnaire

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Never</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I insist on condom use when I have sexual intercourse.</td>
<td>17.5</td>
<td>17.5</td>
<td>22.2</td>
<td>42.9</td>
</tr>
<tr>
<td>2. I use cocaine or other drugs prior to or during sexual intercourse.</td>
<td>90.5</td>
<td>9.5</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>3. I stop foreplay long enough to put on a condom (or for my partner to put on a condom).</td>
<td>15.9</td>
<td>19.0</td>
<td>25.4</td>
<td>39.7</td>
</tr>
<tr>
<td>4. I ask potential sexual partners about their sexual histories.</td>
<td>11.1</td>
<td>22.2</td>
<td>34.9</td>
<td>31.0</td>
</tr>
</tbody>
</table>

(table continues)
Table 3 (continued)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Never</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. I avoid direct contact with my sexual partner's semen or vaginal secretions.</td>
<td>30.2</td>
<td>20.6</td>
<td>17.5</td>
<td>31.7</td>
</tr>
<tr>
<td>6. My partner and I use a spermicide as well as a condom with each act of sexual intercourse.</td>
<td>54.0</td>
<td>20.6</td>
<td>6.3</td>
<td>3.2</td>
</tr>
<tr>
<td>7. I have sexual intercourse with someone who injects drugs (IV drugs) into his/her veins.</td>
<td>90.5</td>
<td>9.5</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>8. I ask my potential sexual partners about a history of bisexual/homosexual practices.</td>
<td>27.0</td>
<td>27.0</td>
<td>22.2</td>
<td>23.8</td>
</tr>
<tr>
<td>9. I engage in sexual intercourse on a first date.</td>
<td>66.7</td>
<td>31.7</td>
<td>1.6</td>
<td>0.0</td>
</tr>
<tr>
<td>10. I abstain from sexual intercourse when I do not know my partner's sexual history.</td>
<td>7.9</td>
<td>20.6</td>
<td>23.8</td>
<td>44.4</td>
</tr>
<tr>
<td>11. I avoid sexual intercourse when I have sores or irritation in my genital area.</td>
<td>12.7</td>
<td>9.6</td>
<td>7.9</td>
<td>69.8</td>
</tr>
<tr>
<td>12. If I know my encounter may lead to sexual intercourse, I carry a condom with me.</td>
<td>22.2</td>
<td>22.2</td>
<td>23.8</td>
<td>31.7</td>
</tr>
<tr>
<td>13. I insist on examining my sexual partner for sores, cuts, or abrasions in the genital area.</td>
<td>47.6</td>
<td>20.6</td>
<td>15.9</td>
<td>15.9</td>
</tr>
</tbody>
</table>

(table continues)
<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Never</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>14. If I disagree with information that my partner presents on safe sex practices, I state my point of view.</td>
<td>6.3</td>
<td>12.7</td>
<td>36.5</td>
<td>44.4</td>
</tr>
<tr>
<td>15. I engage in oral sex without using protective barriers such as a condom or rubber dam.</td>
<td>27.0</td>
<td>27.0</td>
<td>17.5</td>
<td>28.6</td>
</tr>
<tr>
<td>16. I use rubber gloves for sexual foreplay when I have cuts or abrasions on my hands.</td>
<td>88.9</td>
<td>0.0</td>
<td>6.3</td>
<td>4.8</td>
</tr>
<tr>
<td>17. If swept away in the passion of the moment, I have sexual intercourse without using a condom.</td>
<td>33.3</td>
<td>55.6</td>
<td>1.6</td>
<td>9.5</td>
</tr>
<tr>
<td>18. I engage in anal intercourse.</td>
<td>76.2</td>
<td>17.5</td>
<td>3.2</td>
<td>3.2</td>
</tr>
<tr>
<td>19. I ask my potential sexual partner about a history of IV drug use.</td>
<td>33.3</td>
<td>14.3</td>
<td>23.8</td>
<td>1.6</td>
</tr>
<tr>
<td>20. If I know an encounter may lead to sexual intercourse, I have a mental plan to practice safe sex.</td>
<td>12.7</td>
<td>22.2</td>
<td>23.8</td>
<td>41.3</td>
</tr>
<tr>
<td>21. If my partner insists on sexual intercourse without a condom, I refuse to have sexual intercourse.</td>
<td>14.3</td>
<td>20.6</td>
<td>25.4</td>
<td>38.1</td>
</tr>
<tr>
<td>22. I avoid direct contact with my sexual partner's blood.</td>
<td>6.3</td>
<td>11.1</td>
<td>12.7</td>
<td>68.3</td>
</tr>
</tbody>
</table>

(table continues)
Table 3 (continued)

<table>
<thead>
<tr>
<th>Survey Item</th>
<th>Never</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
<tr>
<td>23. It is difficult for me to discuss sexual issues with my sexual partners.</td>
<td>39.7</td>
<td>46.0</td>
<td>14.3</td>
<td>0.0</td>
</tr>
<tr>
<td>24. I initiate the topic of safer sex with my potential sexual partners.</td>
<td>14.3</td>
<td>46.0</td>
<td>20.6</td>
<td>19.0</td>
</tr>
<tr>
<td>25. I have sexual intercourse with someone who I know is a bisexual or gay person.</td>
<td>81.0</td>
<td>9.5</td>
<td>4.8</td>
<td>4.8</td>
</tr>
<tr>
<td>26. I engage in anal intercourse without using a condom.</td>
<td>85.7</td>
<td>6.3</td>
<td>3.6</td>
<td>0.0</td>
</tr>
<tr>
<td>27. I drink alcoholic beverages prior to or during sexual intercourse.</td>
<td>23.8</td>
<td>69.8</td>
<td>6.3</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Note. Respondents were asked to answer never, sometimes, most of the time, or always.

Summary

The data collected and analyzed for this study have been presented in Chapter IV. Data analysis revealed that the majority of the respondents were white (84.1%), single (61.9%), female (69.8%) between the ages of 22 and 25 years (41.3%), and lived outside the United States (38.1%).
The participants demonstrated high levels of knowledge when it came to safe or not safe sexual practices. Over 95% knew that having sexual intercourse with only one partner, avoiding sexual activities that could cause bleeding of vaginal or rectal tissues, and using condoms during oral intercourse were safe sex practices. The participants also recognized unsafe sexual practices. Over 96% knew that having more than one sex partner, having intercourse with a person who injects illegal drugs into his or her veins, and having sex without the use of a condom were unsafe sexual practices.

Although these young adults were knowledgeable about safe sex, this knowledge is not reflected in their sexual behaviors. Only 42.9% of the participants insisted on the use of condoms, and over 69% drank alcohol prior to or during sexual intercourse.

This chapter presented the results of data analysis using descriptive statistics. Results of the data collection were reported in narrative and table format.
Chapter V

The Outcomes

Some young adults by the age of 18 years have had as many as five sexual partners. With young adults experimenting in high-risk sexual behaviors, unprotected sex, and multiple sexual partners, the prevalence of STDs has escalated. Thus, the purpose of this study was to identify the knowledge level about safe sex practices and the effect this knowledge has on the behaviors of young adults.

The research questions for this study were as follows: What is the knowledge level of young adults about safe sex and what effect does knowledge about safe sex have on the sexual behaviors of young adults? Pender’s Health Promotion Model served as the theoretical framework for this study.

The sample consisted of 63 young adults between the ages of 18 and 29 years who had access to a computer that was connected to the World Wide Web. The Knowledge of Safer Sex Practices Questionnaire, the Safe Sex Behavior
Questionnaire, and the DeCanter Demographic Survey were used to elicit the data needed for this research. Participants were asked to complete the survey and submit responses back to the researcher via e-mail.

Discussion of the Findings

Findings for the first research question, "What is the knowledge level of young adults about safe sex?" reflects that young adults are very knowledgeable. Ninety-five percent or more of the participants agreed that having only one faithful sexual partner, avoiding sexual activities that caused bleeding of tissues (95.5%), avoiding semen or vaginal secretions of sexual partner (95.2%), and abstaining from sexual intercourse (100%) were safe sex practices.

The participants also recognized sexual practices that were considered not safe sex, having sexual intercourse with a person who injects illegal drugs into his or her veins (98.4%), having more than one sex partner (96.8%), having sex with someone you don’t know well (98.4%), having sex without using a condom (96.8%), or having anal intercourse (95.2%).

The findings from this research resemble the findings in DiIorio’s (1993b) in which the participants
demonstrated a high level of knowledge about protection during sexual intercourse, answering 19 of 23 items correctly. Ninety-nine percent of participants indicated that the use of condoms was a safe sex practice, while 99.4% knew that having sexual intercourse with intravenous drug users, with more than one partner (99.1%), and with a person one does not know well (98.4%) are not safe sex practices. But having knowledge is not a predictor of safe sex practices, as reflected in the results to the second research question: What effect does knowledge about safe sex have on the sexual behaviors of young adults? Although young adults are knowledgeable, they are not using this knowledge when it comes to sexual behaviors. While 17.5% participants never insisted on the use of condoms when engaging in sexual intercourse, 30.2% did not avoid direct contact with their sexual partner’s semen or vaginal secretions, 55.6% of the participants, if swept away in the passion of the moment, sometimes had sexual intercourse without using a condom, 17.5% engaged in anal intercourse, and only 28.5% always used protective barrier such as condoms when engaging in oral intercourse.

This research is indicative of previous studies. In a study by Feigenbaum and Weinstein (1995), 22% of the
participants engaged in anal sex, 85% had experienced oral sex, 25% men and 20% women had six or more sexual partners, and only 13% reported the use of condoms. In Prince and Bernard’s (1998) study, 50% of the participants reported never using condoms. The results of this study continue to support the findings of previous research studies in which no relationship was found between the knowledge level of safe sex and the effect knowledge about safe sex has on the sexual behaviors of young adults.

As reflected in this study and in previous studies, young adults are experimenting in high-risk sexual behaviors. Even with the numerous health education classes and messages in the media that encourage the use of risk reduction sexual practices, young adults continue to engage in unhealthy lifestyles, such as multi-sex partners, intercourse without the use of condoms, and oral and anal intercourse. Although education has been designated as a key intervention to change risk-associated sexual behaviors and to prevent the spread of HIV and STDs, more effective means of motivating young adults to practice safe sex need to be considered. With the steady increase of new cases of sexually transmitted diseases, one must determine if the knowledge content being provided
for young adults is accurately based on their cognitive and developmental levels. Also, the perception of the benefits for practicing safe sex must be looked at from the young adult’s viewpoint, every person perceives all things in life differently. Until young adults perceive the magnitude of the outcome of having unsafe sexual practices, then these young adults will continue to experiment in high-risk sexual behaviors.

Conclusion

The findings of this research study indicated that young adults do not practice safe sex although young adults have a high level of knowledge regarding safe sex practices. Knowledge was not related to decreases in risky sexual behaviors in this sample of young adults. Knowledge is not associated with the sexual behaviors of this population of young adults. Knowledge has little effect on reducing unsafe sexual practices.

Limitations of the Study

In the process of conducting this study, there were additional problems encountered with the research design. The voluntary convenience sample may not have adequately
represented the characteristics of the population of young adults.

Additional limitations may have been associated with the use of the Internet. While 10 universities were contacted to post the researcher’s home-page on their liserv, only a relatively small sample size resulted. The generalization of the findings beyond the sample size is not possible due to the small sample size.

Subjects may have interpreted questions differently. Additionally, the accuracy of self-report is always dependent on the participants’ willingness to reveal personal issues.

**Implications for Nursing**

This research study was conducted to determine the knowledge of safe sex practices and the sexual behaviors of young adults. Having knowledge of the sexual behaviors and practices of young adults may aid the nurse practitioner in providing a more holistic approach to family practice. The nurse practitioner will need to keep an open mind about the sexual practices and preferences of his or her clients. Although the nurse practitioner may not agree with the client’s sexual practices or preferences, it is his or her responsibility to be able to
discuss all issues with the client. The nurse practitioner is responsible in insuring that the client receives information on methods to prevent HIV/STDs and other diseases. Findings from this study have implications for the nursing profession in the area of theory, education, nursing practice, and nursing research.

Nursing theory: Pender's Health Promotion Model has provided the theoretical framework for many studies. Use of the Health Promotion Model as a theoretical framework for research studies serves to validate and strengthen its concepts. Although the findings of this study did not support the findings of previous research that validated the concepts of the Health Promotion Model, where the perception of valued health would seek information that results in healthy behaviors, it may be assumed that the young adults did not perceive their sexual behaviors as high risk and felt there was no need to change their sexual behaviors. Since Pender bases her theory on cognitive/perceptual factors including importance of health, perceived control of health, perceived self-efficacy, definition of health, perceived health status, perceived barriers to health, and perceived benefits of
health, how young adults view these factors need to be taken into consideration.

**Nursing education:** Findings from this study indicate that young adults are not practicing safe sex behaviors, which can lead to an increase of sexually transmitted diseases, causing an escalation to health care costs. It is the responsibility of the nurse practitioner to assess how young adults perceive high-risk sexual behaviors, since these young adults may not consider their sexual behaviors to be risky for them.

Health care workers need to focus on continuing education classes that keep them abreast of all new ways to treat and prevent illnesses. Continuing education is the key to a successful practice.

**Nursing practice:** Nurse practitioners in the primary care setting can utilize the findings of this research in educating and counseling young adults. The findings of this research revealed that knowledge of safer sex practices was not related to safer sex behaviors. Therefore, reassessment of methods for educating young adults need to be addressed, taking the young adult’s perception of what is considered risky sexual behaviors. Nurse practitioners need to keep an open attitude about
clients' sexual preferences, keeping a port to communication with clients. Communication is the key to understanding the developmental stages of young adults and what motivates young adults in their sexual behavior.

Nursing research: This study sought to determine the knowledge of safe sex and the sexual behaviors of young adults. Findings from this study revealed that young adults are knowledgeable about safe sex practices, but their behaviors are not reflected in their sexual practices. Additional research is needed to explore what young adults consider are risky sexual behaviors. The nurse practitioner needs to be aware of the developmental or cognitive level that these young adults are functioning and understand what motivates them to change their behaviors. Publication of nursing research will help nurse practitioners become aware of young adults’ sexual behaviors and practices regarding sex.

Recommendation for Further Study

Based on the findings of this study, several recommendations for further study are made. Those recommendations are as follows:

1. Conduct studies to determine what motivates young adults to change risk-taking behaviors.
2. Conduct a qualitative study to explore the meaning of risky sexual behaviors to young adults.

3. Conduct studies to determine if the knowledge content being provided to young adults is accurate based on their cognitive and developmental level.
REFERENCES
References


Centers for Disease Control. (1996). The challenge of STD prevention in the United States. Division of STD Prevention. (Available from CDC National AIDS Clearinghouse, P. O. Box 6003, Rockville, MS 20849-6003)

Centers for Disease Control. (1997). Sexually Transmitted Diseases. (Available from Office of Women’s Health, CDC American Social Health Association, P. O. Box 13827, Research Triangle Park, NC 27709)


APPENDIX A

DeCANTER DEMOGRAPHIC SURVEY
Decanter Demographic Survey

1. Gender
   _____ Male
   _____ Female

2. Age
   _____ 18 to 21 years
   _____ 22 to 25 years
   _____ 26 to 29 years
   _____ > 30 years

3. Marital status
   _____ Single (never been married)
   _____ Married (male/male)
   _____ Married (female/female)
   _____ Separated
   _____ Divorced
   _____ Widowed

4. Ethnic background
   _____ Caucasian
   _____ African American
   _____ Native American
   _____ Hispanic
   _____ Asian
   _____ Other

5. Educational background
   _____ Dropped out of school
   _____ High school graduate
   _____ 1 year of college or vocational schooling
   _____ 2 years of college or vocational schooling
   _____ 3 years of college
   _____ 4 years of college
   _____ College graduate
   _____ Other

6. Religious affiliation
   _____ Protestant
   _____ Catholic
   _____ Jewish
   _____ Other
   _____ None

7. Regional area (USA)
   _____ North
   _____ Northwest
   _____ Northeast
8. Sexual Preferences
   _____ Heterosexual
   _____ Bisexual
   _____ Homosexual
   _____ Lesbian

9. Income
   _____ $10,000 - $25,000
   _____ $25,000 - $40,000
   _____ $40,000 - $55,000
   _____ $55,000 - $70,000
   _____ > $70,000

10. Ever been tested for HIV?
    _____ Yes
    _____ No

11. If yes to question 10, are you being treated for HIV?
    _____ Yes
    _____ No

12. Ever been treated for a sexually transmitted disease (STD)?
    _____ Yes
    _____ No

13. If yes to question 12, what type STD?
    _____ Chlamydia
    _____ Gonorrhea
    _____ Herpes (genital)
    _____ Genital warts
    _____ Syphilis
    _____ Other
APPENDIX B

KNOWLEDGE OF SAFER SEX PRACTICES QUESTIONNAIRE
**Knowledge of Safer Sex Practices Questionnaire**

**Directions:** Please read each item below and respond by indicating whether the practice is a Safer Sex Practice (SS) or is not a Safer Sex Practice (NSS). Check (☑) the appropriate letters. **Note:** Safer sex refers to practices that reduce your risk of getting AIDS.

<table>
<thead>
<tr>
<th>Item</th>
<th>Safer Sex</th>
<th>Not Safer Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Having sexual intercourse with only one faithful uninfected partner.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Having oral sex without using a protective barrier (rubber, rubber dam).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Having sexual intercourse with a person who injects illegal drugs into his/her veins.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Having more than one sex partner.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Taking birth control pills.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Using a diaphragm during sexual intercourse.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Urinating after sexual intercourse.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Avoiding sexual activities that may cause bleeding of tissues of the vaginal or rectum.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Avoiding contact with semen, blood, or vaginal secretions of sexual partner.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Using condoms when engaging in oral sex.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Not having sexual intercourse with a partner who has other partners.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Having sex with someone you don’t know well.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Examining sexual partners for sores or abrasions in the genital area.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Mutual masturbation (stimulation).</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Safer Sex</td>
<td>Not Safer Sex</td>
</tr>
<tr>
<td>---</td>
<td>-----------</td>
<td>--------------</td>
</tr>
<tr>
<td>16.</td>
<td>Abstaining from sexual intercourse.</td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Having sexual intercourse without using a condom.</td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Having anal intercourse.</td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Hugging, caressing, body massage</td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>Using a condom (rubber) during sexual intercourse.</td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>Using latex condoms or pieces of latex when engaging in oral sex.</td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Using a latex rather than a non-latex condom.</td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX C

SAFE SEX BEHAVIOR QUESTIONNAIRE
Safe Sex Behavior Questionnaire

Directions: Below is a list of sexual practices. Please read each statement and respond by indicating your degree of use of these practices.

1 = never
2 = sometimes
3 = Most of the time
4 = Always

1. I insist on condom use when I have sexual intercourse. 1 2 3 4

2. I use cocaine or other drugs prior to or during sexual intercourse. 1 2 3 4

3. I stop foreplay long enough to put on a condom (or for my partner to put on a condom). 1 2 3 4

4. I ask potential sexual partners about their sexual histories. 1 2 3 4

5. I avoid direct contact with my sexual partner's semen or vaginal secretions. 1 2 3 4

6. My partner and I use a spermicide as well as a condom with each act of sexual intercourse. 1 2 3 4

7. I have sexual intercourse with someone who injects drugs (IV drugs) into his/her veins. 1 2 3 4

8. I ask my potential sexual partners about a history of bisexual/homosexual practices. 1 2 3 4

9. I engage in sexual intercourse on a first date. 1 2 3 4

10. I abstain from sexual intercourse when I do not know my partner's sexual history. 1 2 3 4

11. I avoid sexual intercourse when I have sores or irritation in my genital area. 1 2 3 4

12. If I know my encounter may lead to sexual intercourse, I carry a condom with me. 1 2 3 4

13. I insist on examining my sexual partner for sores, cuts, or abrasions in the genital area. 1 2 3 4
14. If I disagree with information that my partner presents on safe sex practices, I state my point of view.

15. I engage in oral sex without using protective barriers such as a condom or rubber dam.

16. I use rubber gloves for sexual foreplay when I have cuts or abrasions on my hands.

17. If swept away in the passion of the moment, I have sexual intercourse without using a condom.

18. I engage in anal intercourse.

19. I ask my potential sexual partner about a history of IV drug use.

20. If I know an encounter may lead to sexual intercourse, I have a mental plan to practice safe sex.

21. If my partner insists on sexual intercourse without a condom, I refuse to have sexual intercourse.

22. I avoid direct contact with my sexual partner's blood.

23. It is difficult for me to discuss sexual issues with my sexual partners.

24. I initiate the topic of safer sex with my potential sexual partners.

25. I have sexual intercourse with someone who I know is a bisexual or gay person.

26. I engage in anal intercourse without using a condom.

27. I drink alcoholic beverages prior to or during sexual intercourse.
APPENDIX D

PERMISSION TO USE TOOLS
November 23, 1998

Paula DeCanter
1158 CR77
New Albany, Mississippi 38652

Dear Ms. DeCanter:

Thank you for your interest in the Knowledge of Safer Sex Practices and the Safe Sex Behavior Questionnaire. You have permission to use the questionnaires in your research. I would be interested in a copy of your results when they are available.

I wish you the best of luck. Please contact me if you have any questions. I can be reached at:

Rollins School of Public Health
Emory University
1518 Clifton Road
Rm 554
Atlanta, Georgia USA 30322

or by email at cdiiori@sph.emory.edu

Sincerely,

Colleen Dilorio, PhD, RN
Professor, Department of Behavioral Science and Health Education
APPENDIX E

APPROVAL OF THE COMMITTEE ON USE OF HUMAN SUBJECTS IN EXPERIMENTATION OF MISSISSIPPI UNIVERSITY FOR WOMEN
March 1, 1999

Ms. Paula DeCanter
C/O Graduate Program in Nursing
Campus

Dear Ms. DeCanter:

I am pleased to inform you that the members of the Committee on Human Subjects in Experimentation have approved your proposed research upon the condition that the consent form contain a statement that electronic transmission, such as E-mail or Internet transmission, is not secure and the participant is so advised.

I wish you much success in your research.

Sincerely,

Susan Kupisch, Ph.D.
Vice President
for Academic Affairs

SK:wr

cc: Mr. Jim Davidson
    Dr. Mary Pat Curtis
    Dr. Bonnie Lockard
APPENDIX F

INTRODUCTORY LETTER AND INFORMED CONSENT
Welcome to my home-page. My name is Paula DeCanter, RN, BSN. I am a graduate student at the Mississippi University for Women in Columbus, Mississippi. I am presently working on my thesis entitled Knowledge and Behaviors Related to Safe Sex in Young Adults. If you are a young adult ages 18 to 29 years, I am inviting you to participate in this study. Please read the following information for explanations and instructions.

This study contains a consent form and three questionnaires that will need to be completed. Please follow the directions in each section and answer the questions to the best of your ability.

Informed Consent

Explanation of Procedure
If you elect to participate, you will be asked to complete on questionnaire that includes demographic data, various questions on knowledge of safer sex practices, and a questionnaire on safe sex behaviors. The questionnaires will take approximately 15 minutes to complete. After completion of the questionnaires, you will submit your responses via E-mail by using the Submit button at the bottom of the questionnaire.

Risks
There are no physical risks associated with the completion of the questionnaires. Privacy of the completed questionnaires cannot be guaranteed during E-mail transmission over the Internet. Once the questionnaires are submitted, each will be assigned a code number determined by the participant, and the E-mail address will be deleted by the researcher. No other person will have access to the researcher’s password to view E-mail.

Confidentiality
The information gathered during this study will be kept confidential. After the data has been analyzed, all
findings of the study will be published for scientific purposes as group data, and your identity will not be revealed. The completed questionnaires will contain a code number, and at no time will your name appear on the completed questionnaires. Your code number will consist of your birth month, day, year, with a first and last initial and your telephone area code. You will be instructed on the questionnaires about how to fill in the blanks to create your code number. A list of code numbers will be kept separate to prevent duplication of questionnaires. All questionnaires will be kept secured until analysis of data is complete, and then they will be destroyed.

**Withdrawal from the Study**
You are free to withdraw your consent at any time and not participate in the study. If you choose not to participate, do not complete or send the questionnaires via E-mail. You are not required to answer every question.

**Cost to Subjects**
There will be no cost to you for participating in the study. Questionnaires may be found by linking to the researcher's home page (http://.cbicom.net/~paulad)

**Payment for Participation**
Sorry, you will not receive any payment for participating in the study, but the researcher sincerely thanks you.

**Questions**
If you have any questions about the research, Paula DeCanter will be glad to answer them. Paula's E-mail address is pgd@muw.edu or phone number (601) 534-3590.

Created signature for E-mail responses:
It is important to complete the following on each section:
Date of Birth (mm/dd/yy):__________ First Initial:_____
Last Initial____ USA Area Code:

To send by E-mail press the button below to continue the survey: