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The Prevalence of High Risk Sexually Transmitted Disease Behaviors Among Homosexual College Students

by

Teofanes Q. Natavio, RN, BSN

Thesis

Submitted to the School of Nursing

College of Health and Human Services

Eastern Michigan University

In partial fulfillment of the requirements

For the degree of

MASTER OF SCIENCE

In

Nursing

Thesis Committee:

Lorraine M. Wilson, RN, PhD, Chair

Michael Williams, RN, MSN

April 17, 2007

Ypsilanti, Michigan

Dedication

This thesis is dedicated to my mother, an influential role model and nurse, who had taught me the beauty and power of knowledge. If it were not for her encouragement, my goal to pursue an advanced degree would not have continued. I want to thank my father; my brother, Eduardo; and his wife, Allycia, who all have been a source of support and strength to carry out this endeavor. A special thanks goes to my little sister, Melissa, for her unwavering wit that helped my stress level during this journey.

Acknowledgements

I would like to extend my gratitude to the gay and lesbian community who had volunteered to participate in this study. The difficult lesson to learn in life for a gay and lesbian youth is that adversity fuels dreams and hopes for freedom from intolerance. Hopefully, this study will be an inspiration for the gay and lesbian community to advocate understanding by alleviating discrimination in society through education and accepting differences. A special thank you goes to all the Gay, Lesbian, Bisexual, and Transgender Organizations of all college campuses in the United States that are committed to providing resources for coping and understanding social obscurity.

I would like to give special recognition and thanks to my thesis chair, Dr. Lorraine Wilson, and Michael Williams for their belief in this study and in me. They both have brought valuable information and ideas into this study. Dr. Lorraine Wilson is an accomplished professor of nursing, and her achievements have been a source of inspiration during this thesis formation. Michael Williams, MSN, RN, is an excellent resource and provided me the necessary tools to complete this long, arduous journey. He is truly an admirable, solid individual who helped me through the completion of this thesis.

Abstract

The purpose of this study was to examine the prevalence of high-risk sexually transmitted disease behaviors among homosexual college students between the ages of 19 and 25 years (N=57) in a southeastern Michigan college campus, as well as to examine the relationships among demographic factors and high risk-behavior variables. The Behavioral Risk Factor Surveillance Survey (BRFSS), which is based on the theoretical framework of the Health Belief Model and developed by the Center for Disease Control, was used to measure multiple sexual partners, condom use, and STD/HIV screening in the sample being studied.

The results showed that a large part of the sample failed to use condoms and comply with STD/HIV screening despite their level of education and knowledge. Interestingly, there was minimal incidence of STDs and/or HIV infections. The sample showed that multiple sexual partners were significant but did not contribute to any findings of STD/HIV incidences in this sample. Therefore, further studies are needed to better understand behaviors of homosexual students for implementing effective means of mitigating high-risk sexual behaviors.

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Chapter I: Introduction

Sexually transmitted diseases (STD) are increasing among adults less than 25 years of age (Miller, Boyer, & Cotton, 2004). Approximately 12 million cases are confirmed, costing more than 10 billion dollars in health care in the United States annually. Government and state funding is responsible for sexual education for the prevention of STDs through public literature, television media, schools and universities, and health departments, yet the National Institute of Allergy and Infectious Diseases (1997) describes STDs as "the most pervasive, destructive, and costly communicable disease problem" (p. 243) in the United States. Young adults, particularly college students, between the ages of 19 and 25 years are vulnerable in transmitting STDs through high-risk behaviors. A recent study indicated that 71% of college students are sexually experienced; 95% of the students report that their experiences have been exclusively with opposite-sex partners, and 5% report sexual experiences with members of their own sex (Eisenberg, 2001). However, 30% of STD cases reported are from same-sex or homosexual contacts. Although a plethora of literature focuses on opposite sex transmission, current studies are suggesting that same-sex exposure rates are increasing among this young adult age group.

Sexually transmitted disease is defined as an infection spread through sexual contact, where there is an exchange of bodily fluids. Sexual contact may be oral, anal, and vaginal penetration, or sharing of sex toys. These sexual acts or conducts have the potential to spread bodily fluids from one person to another. Bodily fluids refer to semen, vaginal secretions, saliva, blood, and even breast milk. Unprotected sexual contact with bodily fluids that may contain either a virus or bacteria may cause a disease process to occur.

Bacterial STDs such as chlamydia, gonorrhea, and syphilis are treatable and curable with appropriate antibiotics and early detection and treatment. The non-curable STD types are viral in nature and include Hepatitis A and B (common types), cytomegalovirus (CMV), human papilloma virus (HPV), and human immunodeficiency virus (HIV). Currently there are no vaccines for CMV, HPV, and HIV.

Empirical evidence suggests that high-risk behaviors for STDs are increasing among the young adult population. Researchers are determined to find causative behaviors or social factors that will eliminate dangerous sexual practices. Current statistics virtually ignore same sex cases, yet there is evidence of greater incidences of same-sex or homosexual STD transmission. Homosexuality is stigmatized for being unacceptable in the mainstream population, influencing sample or population figures in regard to STD incidences. Investigating cases of STDs in gay and lesbian populations in relation to high-risk behavior practices is warranted as an understudied population. Even with the proliferation of education towards sexually transmitted disease prevention in schools, sexual experiences remain high for opposite sex groups and more so with same-sex groups. Prevention programs have rarely been tailored to the specific sexual experiences of the audience (Miller, Beyer, and Cotton, 2004), which may cause gays and lesbians to feel isolated because primary issues on heterosexuality are the focus in sexual education programs. As a result, further study into homosexual behaviors in college students would be beneficial to enrich current effects of collegiate instituted STD prevention programs.

Problem Statement

The prevalence of STD cases, reported annually by the CDC, is increasing among young college students between the ages of 19 and 25 years (Centers for Disease Control, 2004).

Despite strenuous efforts into disease prevention with sexual education programs, few if any of these programs have included gay and lesbian college students. Because same sex contact is very personal, failure to report same-sex behaviors tends to bias results (Eisenberg, 2001). This study examined the prevalence of high-risk sexually transmitted disease behaviors through the following research questions:

1) What are the sexual behaviors among college homosexual students?
2) What are the STD prevention activities among college homosexual students?

Purpose of the Study

The purpose of this study was to examine the prevalence of three high-risk sexual behaviors, namely, multiple sexual partners, STD non-testing, and condom non-use among homosexual college students between the ages of 19-25 years. This study increased knowledge on this understudied population, providing insight into their sexual practices with the hope of improving outreach, educational programs in college communities.

Chapter II: Literature Review

College campuses across the nation are seeing an increased frequency of high-risk sexual behaviors, leading to an endemic of STD incidences in students between the ages of 19 and 25 years. According to Eisenberg (2001), college is a time of sexual activity, which puts students at risk for sexually transmitted diseases. Eighty to 90% of college students report being sexually active with one partner, with the majority reporting having more than one sexual partner. The CDC (2004) recently reported that each year an estimated 15 million new STD infections occur in the United States. Approximately eight to twelve percent of the cases involve young adults entering college. Even though current statistics have shown a dramatic increase of STD incidences in the nation, the interest lies in the prevalence of STDs among homosexual college youth. Previous studies fail to address gay and lesbian issues regarding sexual practices and behaviors and were not under the same scrutiny as the heterosexual mainstream. Homosexual behaviors were primarily incomprehensible; it was once considered a mental illness until the early 1970s. By the early 1980s a mysterious illness had fallen on the male homosexual community. Many homosexual males died of what was once unknown at the time and is now called acquired immune deficiency syndrome (AIDS) from the human immunodeficiency virus (HIV). The virus had disastrous consequences. However, HIV/AIDS has caused many people to seek understanding of gay and lesbian issues, placing them under more scrutiny. Today, many homosexual alliances are fighting for equal representation and to be recognized as a normal part of society in the United States.

Remafedi (1994) acknowledged that more prevention programs for gay and bisexual youth are vital, focusing goals toward prevention of unprotected anal intercourse,

communication with sexual partners, consistent condom use during oral and vaginal sex, low risk sexual practices, avoidance of substance use in sexual situations, and developmentally appropriate STD/HIV counseling and testing services. Remafedi's study pioneered the engineering of tailored intervention programs for gay, lesbian, and bisexual youth. Remafedi proposed that future empirical research is needed to ascertain useful models for homosexual behavior research and to assess the degree of high-risk STD occurrences in homosexuality.

Sieving et al. (1997) posited that risky sexual behaviors may not change once patterns are set. Among female heterosexuals, oral contraceptive use, ability to discuss STD prevention with partners, and alcohol use explained variability in risky behaviors. With male homosexuals, perceived risk of STD, negative opinion of condom use, and barriers to obtaining condoms explained variability in risky behaviors. The authors focused their intentions on gender discrepancies and incidences between female and male subjects. The perceptions obtained from the male and female heterosexual viewpoints regarding safe sex practices may parallel those in gay or lesbian relationships, but empirical research is lacking to support this hypothesis.

Johnston, de Wit, Janssen, and van Griensven (1999) compared sexual behavior between young homosexual men and older homosexual men. The authors noted that their results showed a reduction in high-risk sexual behavior across time; however, the fact remains that the results of this study show that younger gay men today are engaging in substantial levels of risky sexual behavior. Furthermore, the authors mentioned that more accurate predictions of behavior would produce more accurate theories of why high-risk behaviors are prevalent in these groups.

Adamski (2000) noted that the most commonly reported bacterial STDs in the U.S. are chlamydia and gonorrhea. Chlamydia has steadily increased from 196.8 cases per 100,000 persons in 1997 to 236.5 cases per 100,000 persons in 1998. Similarly, the national infection rate for gonorrhea rose nearly 9% in 1998. Young adults in the 15-24 age group represent the highest incidence of STDs. Multiple sexual partners, unprotected sexual activity, and sex with an infected partner contributed to the increase of STDs. However, the study did not explore the potential effects of sexual orientation on transmission incidences.

The CDC's Center for Health Statistics Report (2004) shows that chlamydia, gonorrhea, HIV/AIDS, syphilis, and hepatitis B are the five most frequent STDs. Furthermore, STDs disproportionately affect women, who suffer more frequent and more serious STD complications than men. The study established gender differences in STD prevalence rates but did not examine the effects of sexual orientation on these gender differences.

Ku et al. (2002) examined risk behaviors, medical care, and chlamydial infections among young men in the United States. The study showed that 23% of the men perceived their risk of contracting an STD as minimal. However, 4.3% of these same men were living asymptomatically with chlamydia. The reason for the perception of behavioral invulnerability may have been the lack of sudden chlamydial symptoms, following high-risk sexual behaviors. Even though the research contributed many perceptions as to why men, in heterosexual contacts engage in risky sexual behaviors, the same views or perceptions may or may not be shared in relation to homosexual persons.

Eisenberg (2001) proposed that high-risk sexual behaviors are more prevalent among same-sex partners than opposite-sex partners. Females with both-sex experience and males with both-sex or only same sex experiences were more likely to report recent multiple sexual

partners than those with only opposite-sex partners. Eisenberg's data also revealed that consistent condom use remains low among college students, a risk factor associated with increased STD transmission. This study suggested that personal assessment of sexual orientation and thus study results are based on experience rather than self-identification as gay, lesbian, or bisexual.

Miller, Boyer, and Cotton (2004) examined ethnic and racial differences in the rates of STDs. The study found that African Americans account for approximately 75% of the total reported cases of gonorrhea. It also showed that African American females are more susceptible to STDs than their male counterparts. The researchers also noted that more studies needed to be done on gay, lesbian, and bisexual populations within the African American community. The more prevalent issue among the African American denizens is that males who engage in men-to-men sex do not consider themselves homosexual. Although many of the subjects studied possessed adequate knowledge of sexual risk behavior as well as positive beliefs concerning the prevention of HIV/STD infection, they nonetheless reported high levels of unsafe behaviors.

Rietmeijer, Lansky, Anderson, and Fichtner (2001) examined HIV/STD-related behavioral surveillance activities in the United States. These authors discussed the need for more standardized approaches to HIV/STD behavioral surveillance to enhance the utility of these activities for public health practice. Recent efforts have been made at the CDC to develop such standards, discuss the methodology by which core data items are being developed, and summarize current drafts of these items regarding sexual behavior and drug use. The article also elaborated the use of two specific surveys, the Youth Risk Behavioral

Surveillance System and the Behavioral Risk Factor Surveillance System to study high-risk populations, specifically college age youths.

Zak-Place and Stern (2004) proposed the full Health Belief Model, including self-efficacy, with regard to STD and HIV preventive behavioral intentions in college students. Self-efficacy was identified as the primary predictor for each of the behavioral intentions (condom use, STD testing, and HIV testing), whereas response efficacy was only predictive of testing intentions. The Health Belief Model was used to examine behaviors that lead to high-risk sexual practices and determined the extent to which perceptions of danger modify behavior to take caution.

In summary, STD rates are increasing among U.S. college students. Studies have shown differences in sexual prevention behaviors between men and women of college age and between Caucasians and African-Americans. Sexual orientation, however, was not explored fully in any of these studies. Whether one self-identifies as gay, bisexual, heterosexual, or lesbian may affect STD prevention practices. This study explored these unknowns of homosexual STD prevention practices.

Chapter III: Conceptual Framework

The Health Belief Model (HBM) provides the framework for this study. This model is one of the most widely used conceptual frameworks for understanding health behavior. Developed in the early 1950s by social psychologists Godfrey Hochbaum, Irwin Rosenstock, and Stephen Kegels, the model has been used with great success to promote condom use, seat belt use, medical compliance, health screening, and other health-related behaviors. Eisen (1992) acknowledged that the HBM is based on the understanding that a person will take a health-related action if that person 1) feels that a negative health condition can be avoided; 2) has a positive expectation that by taking a recommended action, he/she will avoid a negative health condition; and 3) believes that he/she can successfully take a recommended health action.

According to Rosenstock (1974), the model was developed in response to the failure of a tuberculosis health-screening program. Mobile units visited neighborhoods, screening adults for the deadly disease free of charge. When few adults took advantage of the free screening program, organizers began investigating why. Hochbaum, however, began to study what motivated the few individuals who did participate. He quickly learned that the perceived risk of disease and the perceived benefits of action were crucial factors in their motivation.

The Health Belief Model at its inception had only four key concepts: perceived susceptibility, perceived severity, perceived benefits, and perceived barriers. The concept of cues for action later joined the first four to “stimulate behavior.” Finally, in 1988, to address the challenges of habitual unhealthy behaviors, self-efficacy became the sixth key concept of the HBM.

HIV infection is a negative health consequence, and the desire to avoid it may motivate sexually active homosexual college students to practice safe sex.

Definition of Terms

Conceptual definition of high-risk sexual behavior. High-risk sexual behavior is defined as an action that pertains to sex with a high susceptibility of transmitting or obtaining an STD. Examples of high risk sexual behaviors are unprotected intercourse (except in a long term monogamous relationship); unprotected mouth-to-genital contact (except in a long term monogamous relationship); sexual activity before age 18; multiple sexual partners; a high-risk partner (one who has multiple sex partners, and/or who has anal sex); having sex with a partner who uses intravenous drugs; and prostitution.

Operational definition of high-risk sexual behavior. The Behavioral Risk Factor Surveillance Survey (BRFSS) was used to measure high-risk sexual behavior by self-reported noncompliant use of condoms, having multiple sexual partners, and engaging in sexual activity with a known STD-infected partner or not screening oneself for STDs.

Conceptual definition of homosexuality. Homosexuality or same-sex attraction is defined as the sexual and emotional attraction to one's own sex. Words sometimes used to describe those who experience same-sex attraction include "homosexual people," " gay men," and "lesbian women."

Operational definition of homosexuality. The demographic section of the survey included the option of identifying one's sexual orientation as being gay or lesbian.

Conceptual definition of sexually transmitted disease (STD). An STD is defined as an infectious condition that is passed from one person to another during sexual activity, where bodily fluids are exchanged between partners. Vaginal intercourse carries the highest risk of

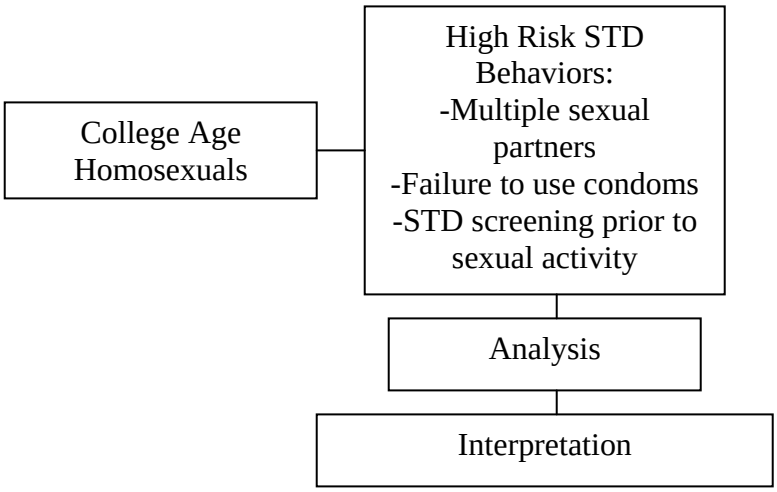
transmission while other activities, ranging from deep kissing to oral and anal sex, could spread infections as well. The common STDs are chlamydia, gonorrhea, syphilis, herpes, hepatitis-B, genital warts, and HIV/AIDS.

Operational definition of sexually transmitted disease. In this study, the self-reported incidence of having had a sexually transmitted disease was measured with the BRFSS.

Chapter IV: Methodology

Research Design

This study used a descriptive research design. Descriptive studies examine one or more characteristics of a specific population (Brink & Wood, 2001). The purpose of this research was to describe the prevalence of high-risk STD behaviors among homosexual college students between the ages of 19 and 25 years. A descriptive design's function is not to look for relationships among variables but rather to provide a descriptive database for the population (Brink & Wood, 2001). The following diagram illustrates the descriptive design that addressed the research questions proposed:



Strengths and Weaknesses of the Research Design

The strength of a descriptive design is that it is simple and easy to conduct. Descriptive studies help to generate hypotheses, as opposed to testing them. Generally, in a descriptive study the emphasis is on estimation rather than testing. This was an appropriate method for this study because no established prevention rate of gay/lesbian college age students exists.

The weakness of descriptive design is that it examines or describes only a single variable or a single population (Brink & Wood, 2001). Naturally, personal experiences may or may not impact the variable being examined, eliciting fabricated psychosocial intentions in the study. However, variable manipulation is not part of descriptive design. Therefore, reasons and causes of high risk STD behaviors may result in different data patterns or conclusions.

Sample Design

The target population sampled for this study consisted of 50 homosexual college students between the ages of 19 and 25 years. A convenience sample of 50 individuals was selected.

Strengths and Weaknesses of the Sampling Design

A convenience sample is feasible, user-friendly, and practical to obtain. The researcher obtained a convenience sample by contacting local Gay, Lesbian, Bisexual, and Transgender Centers (GLBT) and publishing the study through these centers and their email lists.

The major disadvantage of this technique is that the information obtained from the sample may not be a representative whole of the gay and lesbian population. Certain biases may influence the information. Students may have different experiences dealing with homosexuality. As a result, the use of convenience sampling may be considered a modest approach to collecting data because the information is limited to a narrow source. Selection bias, through these recruitment methods, may occur. Using multiple recruitment sites may actually offset selection bias and generate a sample more representative of the total college homosexual population.

Selection of Subjects

The target population was homosexual college students between the ages of 19 and 25 years from the Southeast Michigan area. This study attempted to survey 50 homosexual

college students. If the students agreed to participate in the study, a cover letter was provided with each questionnaire. (Appendix A).

Inclusion Criteria. Self-reported homosexual college students who were able to understand the English language. The students were between the ages of 19 and 25 years and, were able to identify themselves as homosexual (gay or lesbian) in the questionnaire.

Exclusion Criteria. Transgender, transsexual, bisexual, and heterosexual college students were excluded from this study. The psychological and psychosocial dynamics of this sub-population may be an extraneous variable that is difficult to predict. These transgender or transsexual students may be genetically female or male but emotionally and spiritually opposite from their physical gender. Bisexuality is a poorly understood concept at this time and was excluded in order to strengthen study results. Students younger than 19 or older than 25 were excluded in this study.

Instrument

The Behavioral Risk Factor Surveillance System (BRFSS; Appendix B) was developed by the CDC in the early 1980s to clearly show that personal health behaviors played a major role in premature morbidity and mortality. The BRFSS is used to gather enriching data on a national and state level to determine unhealthy risk practices and prevalence of disease. The BRFSS is the "largest continuous survey conducted in the world to monitor risk behaviors related to chronic diseases, injuries and death, and is an effective tool in preventing disease and promoting health" (Center for Disease Control, 2004).

The BRFSS questionnaire contains five sections: fixed core, rotating core, optional modules, emerging core, and state-added questions. However, the questionnaire was tailored to this specific study using questions from an emerging core section that focuses on sexual

behavior, STD/HIV prevention, and condom use. These core sections addressed the significance regarding the prevalence of high-risk STD behavior among homosexual college students. The survey attempted to extract the level of risky behavior by measuring preventative intentions for safer sex. The BRFSS was a qualitative survey approach with quantitative data analysis and results. Each question had a numerical weight that elicited data stratum on each specific survey core; this technique combines nominal and interval scale measurements, depending on questions asked. Permission to use questions from the BRFSS was obtained through the CDC website, which is public domain.

Reliability/Validity of Instrument

The BRFSS has been used since the early 1980s to determine the prevalence of disease processes and behavioral intentions over a variety of trending issues across the nation. The core questions regarding sexual practice, STD prevention, and condom use determined the level of significance in regard to the frequency of high-risk STD behaviors among gay and lesbian college students. The reliability factor for this survey instrument has remained moderate to high. The test re-test reliability (21 days) ranged from r= 0.45 to r= 0.89 with most coefficients above r= 0.70 (Remington, Smith, Williamson, Ando, Gentry, & Hogelin, 1988). The CDC has been instrumental in examining prevalence, behavior intentions, and health promotion in the United States and has placed a great deal of effort into teaching and discovering the latest health risk issues by pursuing quarterly and yearly surveys. The CDC has published results through the Internet or mail circulars, under strict scrutiny of professionals and experts, apprising national or state-by-state health departments for decades.

Rietmeijer, Lansky, Anderson, and Fichtner (2001), experts who developed core questionnaires for the CDC, suggest that a critical element in developing core questions is the

likelihood that they will yield valid and reliable results. For questions on actual behaviors, in contrast to psychological constructs, there is in principle a “true” versus a “false” answer: The behavior occurred or it did not. Deviations from the “truth,” particularly for sensitive questions, are influenced in large part by environmental factors, such as privacy, comfort level, and survey mode. Question-level factors influencing validity and reliability for these types of questions include the sensitive nature of the question content and the clarity of the questions, as well as their specificity and recall time frames. Reitmeijer, Lansky, Anderson, and Fichtner (2001) propose that the specificity of the question is also important to reliability and validity because it may influence answer bias and misconstrue true results regarding what is actually intended for the study.

This research incorporated three defining sections consisting of core questions to demonstrate the prevalence of high-risk STD behaviors among a sample of gay and lesbian college students. The three core sections assessed sexual practice, STD prevention, and condom use that determined the degree of behavioral intentions considered in that sub-community. According to the HBM, the reliability and validity of such constructs prove to be appropriately consistent with what is being assessed using Cronbach’s alpha. When a variable generated from a set of questions returns a stable response, then the variable is defined as reliable. Cronbach’s alpha is not a statistical test but a coefficient of reliability associated with the variation accounted for by the true score of the underlying construct. Alpha coefficients range from 0 to 1 and may be used to describe the reliability of factors extracted from dichotomous and/or multi-point formatted questionnaires or scales. The higher the score, the greater the reliability of the scale.

Response efficacy was determined by using the HBM, from which core questions for CDC were developed, with a Cronbach alpha= 0.66. This coefficient was obtained by using previous studies conducted by the CDC. The sexual practice construct was developed using STD vulnerability and Severity Scales, which showed a consistent reliability with internal validity with a heterosexual population. Utilizing this construct with gay and lesbian college students to examine the prevalence of STD risk behaviors may prove to be a threat to both validity and reliability for this study. Still, empirical literature suggests that larger samples of gay and lesbian youths are needed in studies to further predict correlations for reliability and validity.

Demographic data was obtained and included age, gender, race, sexual orientation, and years in college.

Procedure

The researcher contacted Eastern Michigan University's Gay Lesbian Bisexual Transgender organization to briefly discuss the research study and to leave packets of the cover letter and questionnaire to be distributed. The study subjects returned the questionnaires through the U.S. mail, electronic mail, or web survey format.

Data Analysis

The data were analyzed using descriptive statistics. Further statistical analysis was needed to examine the significance between data sets, which was determined by the researcher and research advisors.

Ethical Considerations

This research examined the prevalence of high-risk STD behaviors among homosexual college students. The cover letter explained the purpose, the voluntary nature of this study,

and strict protection of confidentiality. Subjects had the right to withdraw from the study by not returning the questionnaires. The subjects could call the academic advisor to express concerns, ask questions about the research study, or express distress over completing the survey. Subjects were referred to their university counseling center if distress levels warranted reference. After approval by the Human Subjects Review Committee, College of Health and Human Services at Eastern Michigan University, students were free to ask questions about their right as a research participant by calling 734-487-0077 for additional concerns or questions (see Appendix C).

Potential for physical and psychosocial harm. This research study had the potential to cause minimal psychosocial harm to participants. This study had the potential to cause undue psychological discomfort, inconvenience, or difficulty in filling out the questionnaire. The participants were advised to withdraw from the study should they experience psychological discomfort, inconvenience or difficulty in filling out the questionnaire, or seek counseling at their respective university counseling services. There was no anticipated physical harm to the participants.

Protection of confidentiality. The researcher protected the confidentiality of students' responses to questionnaires. The answered questionnaire was in the jurisdiction of the researcher. The researcher and the academic advisors were the only ones who had access to individual data. The questionnaires were kept in a locked file and shredded upon completion of the study.

Right to Fair Treatment. The participants of this research were enrolled college students at a program in Southeast Michigan. Student name, student number, or any other personal identification system did not identify the subjects, nor was their participation revealed

publicly. The results of this study were available to subjects when requested by them through email. All students who participated in the study were treated with dignity and equally regardless of age, race, education, socioeconomic level, or sexual orientation.

Research Benefits. The research study obtained data about the prevalence of high-risk sexual behaviors among homosexual college students. These data provided insight into behaviors that promote and/or prevent STDs in college students. This study bestowed a baseline for future comparisons and provided data to public health and GLBT centers from which to potentially alter their STD prevention programs to better meet the needs of homosexual clients.

Chapter V: Results

Data Analysis

The Statistical Package for the Social Sciences (SPSS) was used to analyze the demographic data and the survey instrument data. Descriptive statistics were used to analyze characteristics of the sample and study variables including sums, means, standard deviation, frequencies, and percentages. Chi-square was the primary statistical test used to determine conclusive relationships between the variables in the questionnaire. The alpha level of significance was set at $p<0.05$.

Demographic Data

Seventy-five questionnaires were obtained from two sources: the Gay Lesbian Bisexual Transgender Organization located in Eastern Michigan University and through standard mail. However, of the 75 questionnaires received, 18 had to be eliminated because 19% were heterosexual (n=14), and 5.3% reported "other" as their sexual orientation (n=4); thus, 57 questionnaires were used in this study. Of the questionnaires received, 54% were male (n=31) and 46% female (n=26). See Table 1 for a detailed explanation of age, gender, and sexual orientation distributions. The subjects years in college ranged from 1-5: 8.8% had 1 yr (n=5); 21% had 2 yrs (n=12); 8.5% had 3 yrs (n=5); 45.6% had 4 yrs (n=26); and 15.8% had 5 yrs (n=9). No subjects indicated more than 5 yrs of college (n=0). The living situation of the students showed that 52.6% of the sample population commuted to college (n=30) and 47.4% lived on campus (n=27). The ethnic background of the sample was predominantly white, 63% (n=36). The next largest ethnic group was Native Hawaiian or Other Pacific Islander, 17.5% (n=10). See Table 2 for a detailed explanation of ethnic diversity. Thirty-three percent of the sample (n=19) indicated they were in "excellent health"; 36.8% (n=21)

responded in “very good” health; 24.6% (n=14) were in “good” health; and 5.3% (n=3) were “fair health.” None of the samples indicated that their health status was “poor.” See Table 3 for more detailed information,

Table 1

Demographic Data Sheet of Sample (N=57)

Variables	Frequency (n)	Percentage (%)
Gender		
Male	31	54.3
Female	26	45.6
Total	57	100
Orientation		
Homosexual	57	100
Heterosexual (eliminated)	14	
Other (eliminated)	4	
Total	57	100
Ages (years)		
19	3	5.2
20	12	21
21	6	10.5
22	8	14
23	9	15.8
24	4	7
25	15	26.3
Total	57	100

Table 2

Ethnicity

Variables	Frequency (n)	Percentage (%)
American Indian or Alaska Native	2	3.5
Asian	10	17.5
Black/African American	6	10.5
Hispanic	0	0
Native Hawaiian/Pacific Isl.	3	5.3
White	36	6.3
Total	57	100

Table 3

Health Status

Variables	Frequency (n)	Percentage (%)
Health		
Excellent	19	33.3
Very Good	21	36.8
Good	14	24.6
Fair	3	5.3
Poor	0	0
Total	57	100

Research Question #1

The first research question for this study was "What are the sexual behaviors among college homosexual students?" In order to answer this research question, specific items of the BRFSS were examined. These items included information about multiple sexual partners, condom use, sex for money or/with drugs, and STD incidences and treatments. These multiple factors are considered high-risk actions, which may contribute to the prevalence of sexually transmitted disease behaviors.

Multiple Sexual Partners

Question 8 asked subjects to indicate how many sexual partners they had had in the past three months. Ten percent (n=6) indicated never having sexual intercourse, while 17.5 % had sexual intercourse but not during the past three months. Ten percent (n=6) also indicated having 2 sexual partners, and 47% reported only having 1 partner. Five percent (n=3) had 6 or more sexual partners during the past three months, and 8.7% (n=5) had 4 partners. Interestingly, no subjects reported having 3 or 5 sexual partners during the past three months. See Table 4 for more information.

Condom Use

Questions 9, 16(d), 18, and 19 focused on the actual use of condoms and general attitudes toward condom use among the sample of homosexual college students. Question 9 asked, "The last time you had sexual intercourse, did you or your partner use a condom?" Nine percent (n=5) reported never having had sexual intercourse; 31.6% (n=18) reported the use of condoms; and 59.7% (n=34) reported that condoms were not used. Question 16 (d) asked if subjects had anal sex without a condom during the past year. The results showed that 29.8% (n=17) reported that a condom was used, while 70.2% (n=40) indicated that no condom was

used with anal sex. Question 18 was posed to inquire the reason why a condom was used. Three subjects (5.3%) reported condoms were used to prevent pregnancy and 49.1% (n=28) to prevent diseases like syphilis, gonorrhea, and AIDS. Seventeen and one-half percent (n=10) used the condom for both reasons, and 28.1% (n=16) answered for some other reason. The last option specified that an answer was to be written if answered "other reason." All subjects indicated "no condom was used" or "didn't use a condom." Question 19 focused on the beliefs about effectiveness of condom use for prevention, which asked, "How effective do you think a properly used condom is for the prevention of HIV infection?" Sixty-one percent (n=35) indicated that they felt condoms were very effective if used correctly; 35.1% (n=20) indicated somewhat effective; and 3.5 % (n=2) indicated not at all effective.

Sex for Money or Sex for/with Drugs

Question 16 (a) and 16 (c) dealt with two specific risky behaviors that may contribute to incidences of STDs. Question 16 (a) asked whether "you have used intravenous drugs during the past year" and 16 (c) asked whether "you have given or received money or drugs in exchange for sex during the past year" One hundred percent (n=57) of the samples answered no to both questions.

Incidence and Treatment for STDs

Question 16 (b) specifically asked subjects whether they had been treated for a sexually transmitted or venereal disease within the past year. Ninety-six percent of subjects (n=55) replied no, while 3.5% (n=2) indicated yes to this question.

Table 4

Research Question 1: Sexual Behaviors Among Homosexual College Students (N=57)

Variables	Frequency (n)	Percentage (%)
Multiple Sexual Partners (Question 8)		
Never had sexual intercourse	6	10.5
I have had sexual intercourse, but not during the past 3 months	10	17.5
1 person	27	47
2 people	6	10.5
3 people	0	0
4 people	5	8.7
5 people	0	0
6 or more people	3	5.3
Condom Use (Question 9)		
I have never had sexual intercourse	5	8.8
Yes	18	31.6
No	34	59.7
Condom use with anal intercourse (Question 16 (d))		
Yes	17	29.8
No	40	70.2
Reason for condom use (Question 18)		
To prevent pregnancy	3	5.3
To prevent STDs	28	49.1
Both these reasons	10	17.5
For some other reason	16	28.1
Belief about effectives of condoms for prevention of HIV infection (Question 19)		
Very effective	35	61.4
Somewhat effective	20	35.1
Not at all effective	2	3.5

Sex for Money or Sex for/with Drugs (Question 16 (a))		
Yes	0	0
No	57	100
Use of IV drugs during the past year (Question 16 (c))		
Yes	0	0
No	57	100
Incidence and Treatment for STDs (Question 16 (b))		
Yes	2	3.5
No	55	96.5

Research Question #2

The second research question of this study was "What were the STD prevention activities among homosexual college students?" Items on the BRFSS used to answer this research question focused on STD prevention activities, STD education, and acquired knowledge of HIV/AIDS, and compliance of HIV prevention behaviors of the subjects.

HIV Testing (Items 12, 13, & 14)

In May of 2006, the Center for Disease Control (CDC) suggested a new recommendation: that every individual between the ages of 13-64 should be tested for HIV. This suggestion was proposed to determine the prevalence of HIV and to prevent further spread of the virus. This study examined the behaviors of homosexual college students between the ages of 19 and 25 years, a group who theoretically often ignores recommendations of experts. In this study, question 12 asked, "Have you ever been tested for HIV?" The results showed 71.9% (n=41) had been tested for HIV infection, while 28.1% (n=16) had not been tested. Furthermore, question 13 asked, "In the past 12 months, how many times have you been tested for HIV, including times you did not get your results?" Responses to this item showed that 43.9% had never had an HIV test; 42.1% had been tested one time; 12.3% two times; and 1.8% of the subjects had been tested three times for HIV. Question 14 examined reasons people would obtain an HIV test. Forty-nine percent selected the answer, "just wanted to find out whether you had HIV"; 19.2% answered, "thought you may have gotten HIV through sex or drug use."-14% reported that someone had "suggested they be tested"; 11% reported "it was required"; and 7%, unfortunately, did not respond to this item on the questionnaire.

HIV Knowledge/Education

Question 11 was designed to evaluate the subject's knowledge of HIV in general. Specifically, it asked whether subjects believed there were medical treatments available to help a person who is infected with HIV to live longer. Ninety-eight percent of the samples indicated "true," while only 1.8% indicated this was a false statement. Question 10 focused on whether the subject had been taught about AIDS or HIV in school, while 5.2% (n=3) indicated they had not been taught about this in school. More importantly for this study, question 17 asked whether a health professional (doctor, nurse, etc.) talked about preventing sexually transmitted diseases. Sixty-three percent of the subjects (n=36) responded "yes," while 36.8% (n=21) indicated that a health professional had not talked to them about STD prevention. Question 15 asked, "Where did you have your last HIV test?" Thirty percent of the sample reported that they had their last HIV test at a counseling/testing site; 28.1% at a private doctor's office; 17.5% at a clinic; 8.8% in a hospital; and 15.8% did not respond to the question.

Table 5

Research Question 2: STD Knowledge and Preventive Activities Among College Homosexual Students

Variable	Frequency (n)	Percentage (%)
HIV Testing		
Taught about AIDS or HIV infection in school (Question 10)		
Yes	54	94.7
No	3	5.3
Medical treatments available to help persons infected with HIV live longer (Question 11)		
True	56	98.2
False	1	1.8
Have ever been tested for HIV (Question 12)		
Yes	41	71.9
No	16	28.1
The times you have been tested for HIV in the past 12 months (Question 13)		
Never	25	43.9
1 time	24	42.1
2 times	7	12.2
3 times	1	1.8
Main reason for your last HIV test (Question 14)		
It was required	6	10.5
Someone suggested you should be tested	8	14
You thought you may have gotten HIV through sex/drugs	11	19.3
You just wanted to find out whether you had HIV	28	49.1
You were worried that you could give HIV to someone	0	0
No response	4	7

Has been talked to by a health care professional about STD prevention (Question 17)		
Yes	13	63.2
No	21	36.9

Chi-square analysis was used to further understand data from the questionnaire. Chi-square is a non-parametric statistic used to determine whether two independent variables are independent of one another. The level of significance was set at alpha level of 0.05, $p \leq 0.05$. Age and gender were used to determine if differences among subjects existed for condom use, multiple sexual behaviors, and knowledge of HIV/STD with prevention activities. Spearman's rho correlation was used to test to what degree the relationship of HIV/STD knowledge and prevention through HIV/STD testing exists. Spearman's rho correlation, a non-parametric statistic, is appropriate to evaluate the presence and degree of relationships between nominal and ratio level variables. It measures how well the predicted values from a forecast model "fit" with real-life data.

Gender and Condom Use

This study chose to determine if relationships existed between gender and condom use. Previous studies have suggested that homosexual males are less likely to use condoms during sexual intercourse. However, those studies were examining homosexual males of poor urban communities, specifically targeting African American and Hispanic ethnic groups. The sample obtained for this study was primarily homosexual college students located in a suburban, predominantly white, university setting. The results showed that 15 males and 3 females answered yes to using a condom during sexual intercourse. However, an alarming 30 males purported no condom use during sexual intercourse. The chi square result was 13.15 using 2 degrees of freedom (df). The chi-square value was significant at a p-value of 0.0014, suggesting that the gay males of this sample were less likely to use condoms. (See Table 6.)

Age and Condom Use

Further analysis was completed to determine relationships between the ages of college students and condom use. The CDC (2006) has suggested that younger males and females are less likely to use condoms, which may contribute to an increase of sexually transmitted diseases. However, specific research data on younger homosexual males and females were lacking. This study utilized college age homosexuals. The result of the chi-square calculation was 5.894 using a degree of freedom of 12; the p-value was 0.92 representing no statistical significance (see Table 7). In other words, there was no relationship between age and condom use for this sample.

Table 6

Chi-square for Gender and Condom Use

	Never had sex	Yes	No	Total
Male	1	15	30	46
Female	4	3	4	11
Total	5	18	34	57

Chi square=13.15, df= 2, p =0.0014

Table 7

Chi-square for Age and Condom Use

	Condom Use			
	Never had sex	Yes	No	Total
Age				
19	2	1	8	11
20	1	3	5	9
21	1	4	6	11
22	1	3	5	9
23	0	2	4	6
24	0	2	3	5
25	0	3	3	6
Total	5	18	34	57

Chi-square=5.894, df=12, p =0.9213

Gender and Multiple Sexual Partners

Unfortunately, the sample size of this study was inadequate to perform chi-square testing since there were only a small number of males and females who participated in having multiple sexual partners. An important criteria needed to perform a chi-square calculation was that the observed raw frequency cannot be zero. This sample size was obtained from a small suburban university and showed that students were not having multiple sexual partners. This study would benefit from multiple university settings, using even larger urban settings to gather a sample that would indicate students having had multiple sexual partners which may contribute to increase incidences of sexually transmitted diseases. The results of this study indicated that this small sample size did not determine if multiple sexual partners are a threat to suburban university settings.

Gender and HIV Test

The relationship between gender and HIV testing in this study was significant. Males in this study were not as likely as females to be tested for HIV. The chi-square value was 9.832, using a degree of freedom of 1, with a p-value of 0.0017, which is considered to be very statistically significant (see Table 8).

Table 8

Gender and HIV Testing

	HIV Test		
	Yes	No	Total
Gender			
Male	17	14	31
Female	24	2	26
Total	41	16	57

Chi-square=9.832, df=2, p=0.0017

Knowledge of HIV/STD and HIV/STD Prevention

The correlation coefficient was used to determine the relationship between the variable of HIV/STD knowledge and HIV/STD prevention activities. This study sought to examine if knowledge of HIV or STD would result in higher rates of HIV or STD testing. The results indicated a weak correlation coefficient of 0.377. A correlation coefficient is more significant the closer the value is to 1.0. In this study, the samples had a level of knowledge that indicated awareness of STD/HIV prevention. However, this sample did not include safer sex practices by the use of condoms and HIV/STD testing compliance.

Additional Findings

The Behavioral Risk Factor Surveillance Survey did not take into consideration homosexual behaviors. Thus, questions 22 and 23 were added to determine whether these samples were exclusive to only having same sex relationships or also having had opposite gender sex. These questions were indicated to determine if sexual transmitted diseases were also being transferred through opposite gender sex in the homosexual community and not restricted to same sex contact. Eighty-six percent (n=50) of the sample were exclusively homosexual and had never had opposite gender sex; 14% (n=7) responded as being homosexual but had had opposite gender sex. However, during the past three months, 11% (n=5) of the sample had had opposite gender sex and 89% (n=45) had not.

Chapter VI: Discussion

The aim of this study was to evaluate the prevalence of high-risk sexually transmitted disease behaviors among homosexual college-aged students. The questionnaire was designed to capture frequencies of certain variables, specifically condom use, multiple sexual partners, and STD prevention activities and testing, without looking into the reasons why behaviors were being done. The results of this study showed minimal incidences of high-risk sexually transmitted disease behaviors among this sample of homosexual college students. Even though certain limitations exist, such as the small sample size and suburban setting of this study, the results may be reflective of the current status of sexual education practices, which is imperative for health promotion and decreased STD incidences of homosexual college students.

Condom Use

Currently, condom use is synonymous with sexual health. It is an effective means to deter the spread of STDs and it is both cost-effective and a lifesaving measure. The data in this study showed that many homosexual college males do not engage in safe sex practices. In fact, sixty percent of the sample reported not using a condom with their last sexual partner. Seventy percent reported not using a condom for the past year, and yet 50% reported using a condom to prevent diseases like syphilis, gonorrhea, and AIDS. Despite the understanding of condom use by the subjects in this study, they still perceived their vulnerability to an STD as low. Again, the purpose of this study was to examine prevalence of specific sexual behaviors of college age homosexual students and did not seek to understand the psychosocial constructs for not using a condom. Data from recent literature have suggested that condom use is lacking among heterosexual sexual practices--especially between the ages of 14 and

24-- and it stands to reason this behavior transcends to the homosexual population as well. Johnston, de Wit, Janssen, and van Griensven (1999) posited that more young gay men are engaging in high-risk sexual behaviors and more research is needed to understand this phenomenon and to develop interventions in the future. In spite of this, none of the subjects in this sample engaged in sex for money or drugs, nor did any of the subjects have sex while on drugs, which is exceptional. Lastly, the relationships between age and condom use was statistically insignificant in this study; chi-square and p-values did not reflect positive correlations between the two independent variables (Table 7) which could simply be a result of a narrow age range between study subjects.

Multiple Sexual Partners

The results of this study revealed few subjects engaged in the high-risk activity of having multiple sexual partners; however, five percent did indicate having 6 or more partners in the past three months. Perhaps the subjects underreported their counts of sexual experiences. Correlation between age and multiple sexual partners was not significant. Recent empirical data suggest that males and females are engaging in sexual activity as early as 13 years of age and have 3 or more partners, which may contribute to the spread of STDs (Sieving et al. 1997). Interestingly, subjects who reported having 6 partners or more were males between the ages of 19 and 21. College age students older than 23 years reported having fewer sexual partners in this study. A larger sample size would benefit, including gathering samples from other university settings to predict that having multiple sexual partners leading to high incidences of STDs or HIV exists among homosexual college students. The findings in this study sample showed low (3.5%, n=2) incidences of STDs despite more than 50% of the males not using a condom with their sexual partners. Further studies are needed to determine

the relationship of college students' levels of multiple sexual partners to condom use and incidences of STD/HIV for early intervention and prevention programs focusing on this high-risk activity.

STD/HIV Prevention Activities

This study did illustrate that subjects in this study were quite knowledgeable about STD/HIV prevention activities. Sixty-one percent of the subjects indicated that a condom was very effective when properly used, and 98% knew that medical treatments are available to help a person infected with HIV live longer. However, this sample of college students engaged in sex without the use of a condom and did not obtain an HIV test in the past 12 months. The perceived vulnerability among the subjects to contract HIV/STD appears to be low. The actions taken by the subjects are arbitrary and dependent upon intangible variables, such as emotions within this study. Even with the knowledge these students possessed, their actual practice of safe sex activities and STD/HIV testing remained low. A possible explanation is that the BRFSS does not examine the psychosocial dynamics for the behaviors; the questionnaire was simply used to gather nominal frequencies of certain actions. Conceivably, a questionnaire other than the BRFSS could be utilized to obtain the psychological reasons for the behaviors. Another explanation, perhaps, is that developmentally, many students between the ages of 19 and 25 years feel "invincible" or "immortal," creating a false sense of security or denial.

Furthermore, the results of this study showed that health care professionals are doing their part to educate this population regarding safer sex practices. The study revealed that nearly 95% of the subjects indicated that they had received AIDS or HIV teaching in school, while 63% indicated they had received education through a health care professional (doctor,

nurse, etc.). Since the mid-1980s, with the discovery of AIDS, the media have been successful in spreading the message of HIV prevention. Studies in HIV and AIDS research were also important factors in helping health care professionals convey proper prevention, transmission, and treatment to public domains.

Chapter VII: Summary and Conclusions

Implications for Nursing Practice

In this study, two research questions were examined: 1) What are the sexual behaviors among college homosexual students? and 2) What are the STD prevention activities among college homosexual students? The results from this study indicate that homosexual college students between the ages of 19 and 25 years are in need of further education to promote consistent condom use and HIV/STD screening methods. This study showed that despite the high level of knowledge of STD and HIV prevention, many college students engage in sexual activity without condoms and fail to use STD/HIV testing for personal health promotion. The results of this study would indicate a need for developing screening programs aimed toward college students in order to improve condom use and promote HIV/STD screening. Furthermore, developing methods to evaluate the effectiveness of these programs needs to be considered.

A crucial concern of this study is whether homosexual college students have access to condoms and STD clinics for education and teaching. This study examined only the frequencies of specific variables and did not evaluate the psychosocial issues surrounding safe sex practices or lack thereof. Additional studies that examine what factors are perceived as barriers and those as facilitators of safe sex practices should be undertaken. What is important in this study is that the subjects in this sample are using condoms and checking on their HIV status; however, improving compliance in these areas could still be improved. Studies examining factors lending themselves to compliance need to be investigated.

To nurses, this study suggests that college age homosexuals have essential knowledge and that safe sexual health behaviors do exist among this group of students. Nurses should build

upon this information and acknowledge the positive behaviors of college age homosexual students. Nurses need to discuss high-risk sexual activities and methods to decrease STD incidences in a non-judgmental and sex positive manner. Nurses need to take into consideration the delicate psycho-sexual references of individuals, especially the younger generation of college age students, to develop techniques that are beneficial and effective.

Client education should emphasize the condom use and STD/HIV screening to college students. This study did find that students did engage in sexual activity without condoms and unacceptable compliance rates of checking on their HIV test results did exist.

Implications for Nursing Theory

The conceptual theory that directed this study to explain the behavioral patterns of homosexual college students was the Health Belief Model (HBM). The HBM explains or predicts health-protecting behaviors (Pender, 2002). Few, if any, studies have focused on the HBM with homosexual college students' activities into safer sex practices. This study examined the prevalence of high-risk STD behaviors utilizing the BRFSS, which was conceived through the HBM. A weakness of the BRFSS is that it does not take into consideration sexual orientation nor the unique psychosocial issues facing college age homosexual students. The data collected from this survey can provide clues for developing theories that are specific, focusing on same sex orientation. Theories of sexual behavior are prolific; by integrating the psychological aspects of homosexuality with the HBM, nurses will be able to implement interventions that are appropriate to preserve the health of future individuals. Further exploration of the HBM as a theoretical framework for future studies on sexual health practices of homosexual clients may be beneficial.

Implications for Nursing Research

A limitation of this study is the small sample size. It would be beneficial to have a larger sample of homosexual college students. In addition, a sample of homosexual college students from various university campuses would also be valuable. This study did, however, have a relatively balanced split in gender between lesbians and gay males. The findings in this study, because of its limited sample size and relative homogeneity of ethnicity, cannot be generalized to all homosexual college students. The questionnaire itself was another limitation to this study as it was self-administered and may have contributed to some of the inconsistencies or questions left unanswered. While the questionnaire used in this study had demonstrated reliability and validity from previous studies, further validity and reliability testing may be warranted. A measurement tool that is psycho-sexually sensitive may have captured quite different data. When considering replicating this study, the following suggestions should be kept in mind:

- a larger sample size may provide greater insight into sexual health behaviors of gay college students.
- utilizing multiple universities for data collection may be advised.
- using measurement tools that are psycho-sexually appropriate for same-sex orientation would provide greater depth of understanding to investigators.
- targeting greater ethnic diversity should be encouraged to better understand variations in sexual health practices.

In developing replication studies, investigators may want to examine theoretical models other than the HBM for sensitivity to homosexual sexual behaviors. Further examination of homosexual cultural beliefs on safe sex practices, as well as conceptual models of same-sex

sexuality development, may provide guidance for future studies. Evaluating conceptual models for use with bisexual and transgender subjects for study are also needed.

While this research showed that subjects indicated they have knowledge of safe sexual health practices, compliance continues to be a challenge. More research to evaluate the effectiveness of the impact of our educational programs on compliance of safe sex practices among homosexuals is warranted. As educators and nurses, advocates to community health, we need to assess the current state of the homosexual community as a whole and in particular college age students to improve the health of every individual holistically.

Conclusions

The homosexual college students in this study were aware of the importance of condom use and HIV/STD testing to prevent the spread of sexually transmitted diseases but were not consistently using those preventive measures. The subjects in this study were knowledgeable and did comprehend the seriousness of HIV and STDs yet did not consistently utilize this knowledge when engaging in sex. Thus, identifying perceived barriers to compliance with safe sex practices among homosexual college studies is important. Education is essential for nurses in order to provide information about safe sex practices, yet strategies for improving compliance with these practices are not well understood. Education programs that are designed for homosexual students are needed to increase the level of safe sex practices and mitigate the incidences of HIV and STDs on college campuses.

It is imperative that all health care providers are aware of the dynamic sexual practices and behaviors of homosexual individuals. Research evaluating knowledge of a health care provider's understanding of sexual health pratices of homosexual college students may be warranted. Additionally, studies examining the attitudes and beliefs of nurses toward gay

clients help us to understand whether patient education is biased toward these clients. Further research is needed to help college students with same-sex orientation promote healthy lifestyle practices and prevent unnecessary loss of life and physical turmoil from STD or HIV mortality.

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Appendix A

Cover Letter

Title of Study: The Prevalence of High Risk Sexually Transmitted Disease (STD) Behaviors Among Homosexual College Students

Principal Investigator: John Natavio, RN, BSN
Student, Eastern Michigan University
Tel: 248-318-1860
Email: tnatavio@emich.edu

Purpose

The purpose of this study is to examine the prevalence of high- risk sexual behaviors among homosexual college students. Annually, cases of sexually transmitted diseases (STD) are increasing on college campuses across the nation; however, research has not supported true evidence of prevalence in the homosexual college community. Empirical research suggests that customized health education programs targeting homosexual college students are needed, which are lacking in current preventative practice.

Procedures

You will be asked to fill out a questionnaire. It should take about 15 to 20 minutes to complete. The questions in the questionnaire pertain to your sexual experiences of the past and the present. After you complete the survey, you will put it into the pre-addressed envelope with postage provided, seal it and mail it back to the researcher's address.

Risks

The research study may cause minimal risk to you. Possible risks include psychological discomfort, inconvenience, and difficulty in filling out the forms. You should withdraw from the study should you experience any of the possible risks.

Benefits

There are no benefits to you from this study. However, there is a possibility that health care professionals will better understand the prevalence of high-risk sexual behaviors among homosexual college students and be able to modify preventative strategies in the future.

Confidentiality

Please ***DO NOT*** sign your name to any of the forms. All responses will be kept confidential. Questionnaires will be kept in a locked file, and shredded upon completion of the study. The researcher and the academic advisors will be the only ones who will have access to collected data. The results of the study will be written and presented to Eastern Michigan University

faculty. The results may also be published in a professional journal. If you wish to receive a copy of the research results, please email me at tnatavio@emich.edu.

Voluntary Participation

Your participation in this study is voluntary. You may decide not to participate at any time during the study without any negative consequences. The return of the questionnaire will mean that you consent to participate in the study.

This research project has been reviewed and approved by the University Human Subjects Review Committee (UHSRC). You may ask any questions about the study by calling my research advisors Dr. Lorraine Wilson, RN, Ph.D., Professor of Nursing, or Michael Williams, RN, M.S.N., Professor of Nursing, Eastern Michigan University at (734) 487-3274. You may ask questions about your rights as a research participant by contacting Human Subjects Review Committee, College of Health and Human Service, Eastern Michigan University, Ypsilanti, Michigan 48197 at (734) 487-0077.

IMPLIED INFORMED CONSENT

By completing and returning this questionnaire, you verify that:

- You have understood the purpose of this study
- You have voluntarily agreed to participate
- You are between the ages of 19 and 25

Please return your completed questionnaire in the attached envelope. Thank you for your time in contributing to this research study.

Appendix B

Behavioral Risk Factor Surveillance Survey

(adapted from the Center for Disease Control, 2004)

Demographic Section: (please circle or fill in the blank as indicated)

1. Male ☐ Female ☐
2. Homosexual ☐ Heterosexual ☐ Other ☐
3. Age: 19 ☐ 20 ☐ 21 ☐ 22 ☐ 23 ☐ 24 ☐ 25 ☐
4. Years in College:

   1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ >5 ☐
5. Commute to campus ☐ Live on campus ☐
6. How do you describe yourself? (Select one or more responses.)

   A. American Indian or Alaska Native

   B. Asian

   C. Black or African American

   D. Hispanic or Latino

   E. Native Hawaiian or Other Pacific Islander

   F. White
7. How do you describe your health in general?

   A. Excellent

   B. Very good

   C. Good

   D. Fair

   E. Poor

8. During the past 3 months, how many people did you have sexual intercourse?

   A. I have never had sexual intercourse

   B. I have had sexual intercourse, but not during the past 3 months

   C. 1 person

   D. 2 people

   E. 3 people

   F. 4 people

   G. 5 people

   H. 6 or more people

9. The last time you had sexual intercourse, did you or your partner use a condom?

   A. I have never had sexual intercourse

   B. Yes

   C. No

10. Have you ever been taught about AIDS or HIV infection in school?

   A. Yes

   B. No

The next few questions are about the national health problem of HIV, the virus that causes AIDS. Please remember that your answers are strictly confidential and that you don't have to answer every question if you don't want to. Although we will ask you about testing, we will not ask you about the results of any test you may have had. Read the two statements about HIV, the virus that causes AIDS. Please answer whether you think it is true or false, or if you don't know.

11. There are medical treatments available that are intended to help a person who is infected with HIV to live longer.

A. True

B. False

12. Have you ever been tested for HIV? Do not count tests you may have had as part of a blood donation. Include saliva tests.

A. Yes

B.No

13. In the past 12 months, how many times have you been tested for HIV, including times you did not get your results?

A. _ _ Times

B. None

14. The following is a list of reasons why some people have been tested for HIV. Not including blood donations, which of these would you say was the MAIN reason for your last HIV test? Please read:

A. It was required

B. Someone suggested you should be tested

C.You thought you may have gotten HIV through sex or drug use

D.You just wanted to find out whether you had HIV

E. You were worried that you could give HIV to someone

15. Where did you have your last HIV test?

A. Private doctor

B. Counseling and testing site

C. Hospital

D. Clinic

E. Jail or prison

F.Drug treatment facility

G. At home

16. Read the following list. Please, answer if any of the situations apply to you.

A. You have used intravenous drugs in the past year: Yes or No

B. You have been treated for a sexually transmitted or venereal disease in the past year:

Yes or No

C. You have given or received money or drugs in exchange for sex in the past year:

Yes or No

D. You had anal sex without a condom in the past year: Yes or No

17. The next question is about sexually transmitted diseases other than HIV, such as syphilis, gonorrhea, chlamydia, or genital herpes. In the past 12 months has a doctor, nurse, or other health professional talked to you about preventing sexually transmitted diseases through condom use?

A. Yes

B. No

18. The last time you had sexual intercourse, was the condom used:

A. To prevent pregnancy

B. To prevent diseases like syphilis, gonorrhea, and AIDS

C. For both of these reasons

D. For some other reason specify_____

19. Some people use condoms to keep from getting infected with HIV through sexual activity. How effective do you think a properly used condom is for this purpose?

A. Very effective

B. Somewhat effective

C. Not at all effective

20. In the past five years, have you been treated for a sexually transmitted or venereal disease?

A. Yes

B. No

21. Were you treated at a health department STD clinic?

A. Yes

B. No

22. Exclusively:

A. Homosexual; never had opposite gender sex.

B. Homosexual; but had opposite gender sex.

23. In the past 3 months, have you had opposite-gender sex?

A. Yes

B. No

Center for Disease Control. (2004). National Center for Chronic Disease Prevention and Health Promotion: Behavioral risk factor surveillance system, 2004.

Available from Center for Disease Control Prevention. Website, http://www.CDC.gov.

Appendix C

College of Health and Human Services Human Subject Review Committee Approval Letter