ABSTRACT

KNOWLEDGE OF HUMAN PAPILLOMAVIRUS AMONG MALE COLLEGE STUDENTS

By Jennifer R. Jackan

Human papillomavirus (HPV) infection of the genital tract is the most common sexually-transmitted infection (STI) in the U.S. Over one-half of sexually active men and women are infected with HPV at some point in their lives. The highest rate of HPV infection is found in the young, sexually-active population. Seventy-four percent of new infections occur in individuals 15 to 24 years of age. Each year 6.2 million people become newly infected with HPV (Centers for Disease Control and Prevention [CDC], 2007a). Human papillomavirus can lead to cancers of the cervix, vagina, rectum, anus and penis. Women who have abnormal pap smears routinely are screened for HPV; however, there is no routine exam to screen men for infection. There have been numerous studies done surrounding women's knowledge of HPV, yet there have been very few studies done on the knowledge base of males regarding HPV infection. The purpose of this study was to explore the knowledge of male college students ages 18 to 24 about HPV infection. This age group is being used based on the number of new infections occurring among 15 to 24 year olds.

The Health Belief Model (HBM) provided the framework for this study. The setting of this study was a student health center at a Midwestern university. The researcher used a convenience sample of 91 male college students. The researcher administered a modified 30-item questionnaire measuring the knowledge of HPV and other STIs, sexual practices, sexual behaviors and demographic information.

Data were analyzed using descriptive statistics to determine responses of male college students regarding their knowledge of HPV and other STIs. Results showed 33% of participants did not know that HPV is an STI. Only 26.4% of participants knew that HPV causes genital warts, and 42.9% were uncertain how HPV is transmitted. Seventy-three percent of participants were very or somewhat concerned about contracting an STI and 26% were not at all concerned. A majority of participants (63%) responded with uncertainty regarding the symptoms of HPV. A disturbing finding was that condoms were used every time by only 50% of the participants. These findings indicate that further education regarding HPV is necessary among male college students.

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by

Jennifer R. Jackan

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Roxann Hudson PhD Advisor

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PROVOST
AND VICE CHANCELLOR

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Gloria Splettgerber

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CHAPTER I

INTRODUCTION

This chapter contains an overview of human papillomavirus (HPV), statistics for infection, and significance of this study related to primary health care nursing. The problem statement, purpose, research questions, definitions of terms and assumptions are discussed.

Human papillomavirus infection is a sexually-transmitted infection (STI). According to the Centers for Disease Control and Prevention (CDC), approximately 20 million individuals are infected with HPV, with 6.2 million new cases of HPV infection each year (CDC, 2007a). At least 50% of sexually active men and women will become infected with HPV at some point in their lives. By the age of 50, approximately 80% of women will have been infected with HPV. Of the 100 types of HPVs, 30 are transmitted sexually, infecting the genital areas of men and women, including the penis, vulva, cervix, vagina, anus and rectum. Of those types that are transmitted sexually, some are considered high risk, such as types 16, 18, 31, 33, 35, 39, 45 and 51, since they can lead to cancer. Others are considered low risk, such as types 6, 11, 42, 43 and 44, which can lead to the development of genital warts (CDC, 2007a).

Most individuals who become infected with HPV will not have any signs or symptoms of the infection and it will generally clear on its own within two years. Human papillomavirus is detected in women through the use of further screening following a Pap smear with abnormal cervical cells. If a woman's Pap smear comes back with abnormal squamous cells of undetermined significance (ASCUS), HPV typing is subsequently done to determine if HPV is the cause of the abnormal cells and whether or not it is a

high-risk or low-risk infection. Treatment may be necessary to remove the infected cells present on the cervix. Human papillomavirus can have serious outcomes for women if not treated and if the virus does not clear. Human papillomavirus is known to be the leading cause of cervical cancer among women accounting for 70% of all cervical cancers (Yacobi, Tennant, Ferrante, Pal & Roetzheim, 1999). With the advent of the HPV vaccine, Gardasil, predictions are that up to 70% of cervical cancer cases may be prevented (CDC, 2007b).

Women have the advantage of screening tests like the Pap smear; however, there is no standard screening test for men (Mc Partland, Weaver, Lee & Koutsky, 2005). If men are not routinely screened for HPV and do not know that they are infected, they risk spreading HPV. The best protection from contracting HPV is abstinence from genital contact with another person, and yet sexual behaviors of young people today seem to show that abstinence is an unrealistic goal for many. Condoms offer some protection, but young adults need education and reinforcement, especially those young men in the college population. In order to prevent the contraction and transmission of HPV, education may be helpful (McPartland, Weaver, Lee & Koutsky, 2005).

Each year, millions of youth in the U.S. acquire sexually-transmitted infections (STIs). In 2000, there were nine million new cases of STIs diagnosed among young people ages 15 to 24, costing approximately $6.5 billion (Chesson, Blandford, Gift, Tao & Irwin, 2004). Viral STIs accounted for 94% and non-viral STIs accounted for 6% of the total monies spent on STIs. Human papillomavirus and human immunodeficiency virus (HIV) were the most costly, accounting for $5.9 billion of the $6.5 billion (Chesson et al., 2004).

Significance to Primary Health Care Nursing

As STIs continue to rise, primary health care providers will be seeing more diagnosis and treatment of infections, specifically HPV. Nurse practitioners, as health care providers, must routinely discuss the prevalence of HPV with their patients, especially the adolescent and young adult population. Health care providers need to educate about how the virus is spread, how one contracts the virus, the lack of signs and symptoms as well as complications. By providing factual, up-to-date information, practitioners can help dispel myths and reduce anxiety. Practitioners must be frank with their patients, emphasizing the importance of safe sexual practices for themselves and their partners. Practitioners must also continue to routinely screen women for HPV to prevent the development of cervical cancer.

Problem Statement

Human papillomavirus infection of the genital tract is the most common STI in the U.S. Over one-half of sexually active men and women are infected with HPV at some point in their lives. The highest rate of HPV infection is found in the young, sexually active population. Seventy-four percent of new infections occur in individuals 15 to 24 years of age (CDC, 2007a). Each year 6.2 million people become newly infected with HPV (CDC, 2007a). HPV can lead to cancers of the cervix, vagina, rectum, anus and penis. Women are routinely screened for abnormal cells through pap smears, when abnormal cells are found, HPV typing is done; however, there is no routine exam to screen men for infection. There have been numerous studies done surrounding women's knowledge of HPV, yet there have been very few studies done on the knowledge base of males regarding HPV infection. Human papillomavirus is

understudied and prevalent in males, and some high-risk types can lead to cancer, thus making research among the male population and their knowledge of HPV very important.

Purpose of the Study

The purpose of this study was to explore male college students' knowledge of HPV infection. The study utilized a university student health center.

Research Question

What is male college students' knowledge of HPV infection?

Definitions of Terms

Conceptual Definitions

Knowledge: The fact or condition of knowing something with familiarity gained through experience or association (*Merriam Webster*, 2007). "Information leading to understanding or for taking informed action" (Glanz, Rimer & Lewis, 2002, p. 370).

HPV: The most common STI in the U.S. that infects the skin and mucous membranes. Human papillomavirus is a group of viruses that includes at least 100 different strains or types. Human papillomavirus is spread via genital contact, infecting the genital areas of men and women including the skin of the penis, vulva or anus and lining of the vagina, cervix or rectum. Some of the viruses are called "high-risk" types and may cause abnormal Pap tests; these may also lead to cancers of the cervix, vulva, vagina, penis or anus. Others are called "low-risk" types and they may cause genital warts (CDC, 2007c).

Male college student: A male individual attending a university in order to advance his education and obtain a degree.

Operational Definitions

Knowledge: The overall responses to the HPV Knowledge Questionnaire completed by male college students recorded as either correct or incorrect.

HPV: The most common STI in the U.S. caused by a viral infection spread via sexual contact. Human papillomavirus infection may predispose individuals to cancer of the cervix, vagina, anus or penis and may also cause genital warts.

Male college student: Male individuals ages 18 to 24, who are currently enrolled in a Midwestern university working toward a college degree and who seek care at the student health center.

Assumptions

1. Participants were honest with their responses to the questionnaire.
2. Male college students choosing to participate could read and write English.
3. Male college students have varying levels of sexual activity and sexual behavior.

CHAPTER II

THEORETICAL FRAMEWORK AND LITERATURE REVIEW

Introduction

In this chapter, the researcher discusses the use and relevance of the Health Belief Model (HBM) as the theoretical framework for this study. This chapter also provides a review of literature containing research pertinent to HPV.

Theoretical Framework

The Health Belief Model (HBM) (Figure 1) is the theoretical framework that will be used for this study. The HBM was initially developed in the 1950s by a group of social psychologists in order to determine why there was failure of people to participate in programs in order to prevent and predict disease (Glanz, Rimer, & Lewis, 2002). In 1974, the model was modified by Becker and divided into four core constructs in order to explain how individuals perceive health beliefs and their specific health behaviors. The four core constructs included: perceived susceptibility, perceived severity, perceived benefits and perceived barriers (Glanz et al., 2002).

Perceived susceptibility is the subjective perceived risk of contracting a health condition. If individuals feel they may be at risk or susceptible to contracting a health condition they may alter their health behavior. In this study, if college males know that they have a risk of developing HPV does that mean they will take precautions with regards to sexual partners and practices?

Health Belief Model

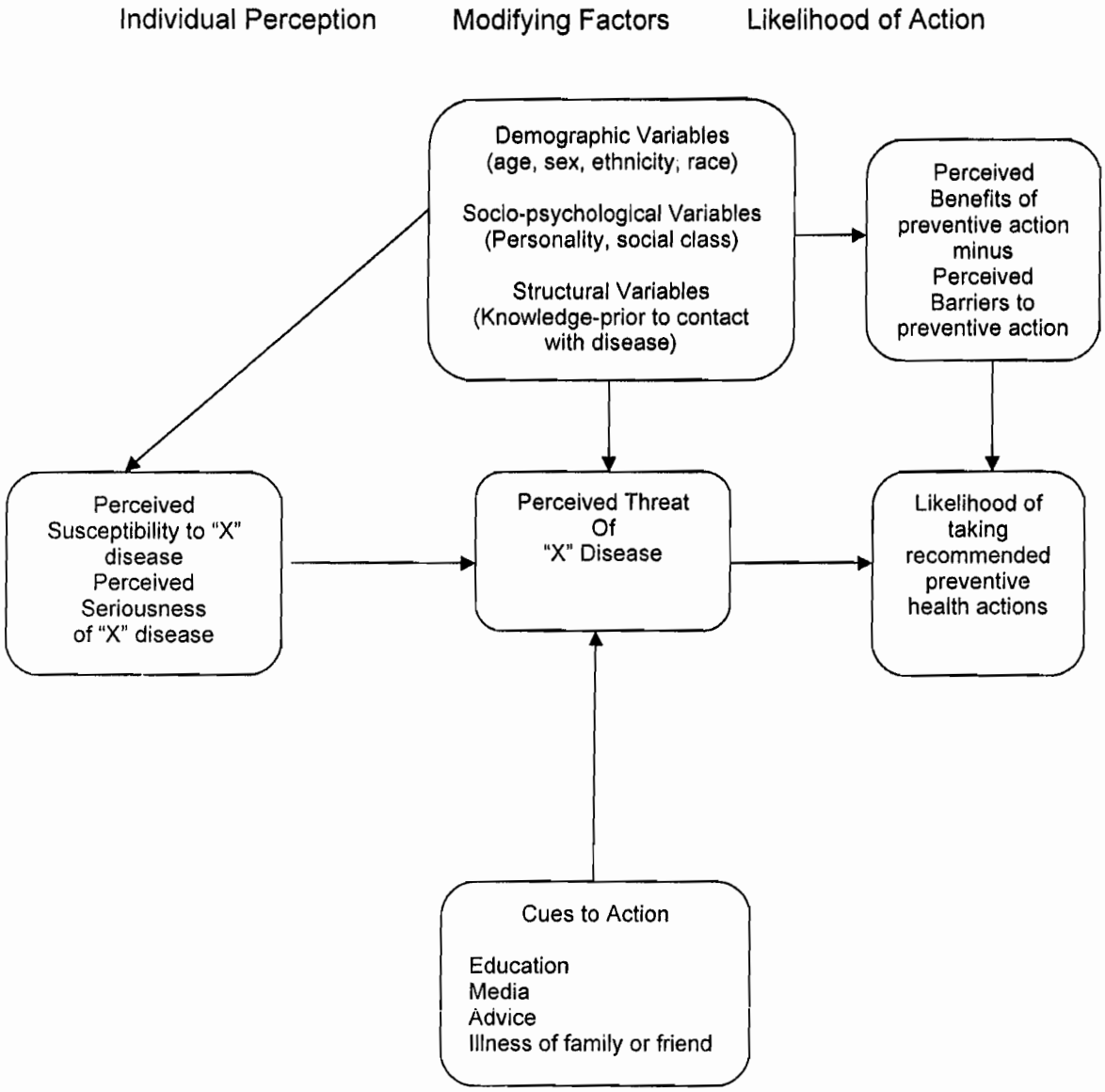

Figure 1. Health Belief Model (Glanz, Rimer, & Lewis, 2002; Pender, Murdaugh, & Parsons, 2006).

Perceived severity refers to how serious the disease or a particular health condition seems. If individuals view a condition to be serious enough, then they may change their behavior in order to prevent acquiring the condition. Does the seriousness of contracting an STI alter their sexual practices? In this study, males will be asked how concerned they are with contracting an STI? Do the males who answered very concerned feel that contracting an STI is serious? Are males who think HPV is serious more likely to use condoms or have fewer sexual partners?

The third core construct is that of perceived benefits. If individuals can see the positive outcomes of taking action against contracting a specific health condition, they may be more likely to initiate and maintain that behavior. In this study if a male college student realizes that they too, can help prevent HPV and its complications, will they be more likely to use condoms with sexual intercourse?

Perceived barriers include factors that may prevent an individual from making a behavior change. Barriers can include cost, lack of knowledge pertaining to the topic, inconvenience, risk/danger or unpleasant outcomes of the behavior modification as well as the adolescent thinking that it will not happen to them, that it only happens to other people. In this study would college males who did not know that they could contract and transmit HPV use condoms less than those who knew that they could transmit and contract HPV? Many individuals may also believe that contracting HPV will not happen to them and that it only happens to others. Having this attitude is also a barrier, meaning that there is a lack of knowledge regarding the fact that HPV can happen to any sexually active individual.

Cues to Action

Cues to action entail all variables or cues that persuade a person to change their behavior and take action. Cues to action can be internal or external. Cues to action among college males may include education or information they have received in the media or at their health care provider's office, or information from friends. They may also have a significant other or someone close to them who has been diagnosed with HPV or cervical cancer and is undergoing testing and treatment. College males may respond to these cues by changing their sexual behavior to prevent spreading or contracting HPV.

Self-Efficacy

In order for the HBM to be successful an individual must possess self-efficacy, the ability of the individual to have confidence in him or herself to successfully carry out a desired action. In this study, the ability to decrease transmission and contracting HPV infection by using protection during intercourse, displays self-efficacy.

In summary, if individuals perceive themselves to be at risk for an illness, feel threatened by the severity of the illness, overcome barriers, and believe in the benefits of taking part in protective measures to avoid contracting the disease or illness, they may be more likely to take action to alter the behavior that puts them at risk for contracting a certain health condition. If college males realize that the sexual behaviors they are currently practicing place them or their partner at risk for contracting or spreading HPV, then they may be more likely to overcome the barriers and initiate safe sexual practices.

Case Study

SK is a 21-year-old male college student attending a Midwestern university who has been dating his girlfriend, LM, for 8 months. Both claim to be monogamous in their relationship. Prior to becoming involved both had multiple sexual partners—SK had 10 previous partners and LM had 8 partners. During their previous relationships, neither used condoms on a consistent basis. SK stated, "I usually relied on her to be on the pill." Currently SK and LM are using birth control pills for contraception.

LM had an appointment for her yearly exam last week and recently received a phone call from her nurse practitioner notifying her that she had some "abnormal cells" on her Pap smear and subsequent testing showed she was infected with HPV. LM is quite upset about the diagnosis and told SK. Upon telling SK ,they argued back and forth about who gave it to whom, and who is cheating on whom. SK made a comment stating, "Only chicks can get HPV; I am clean." Upon doing some research on the internet they realized that they both can be carriers of HPV and that either one of them could have contracted HPV from a previous sexual partner. SK accompanied LM to her follow-up appointments where they were given educational materials regarding HPV. SK was made aware of the procedures LM has to go through, such as colposcopy, biopsy and loop electrosurgical excision procedure (LEEP). SK realized the pain these procedures caused, and the risk for cervical cancer a woman with HPV faces. After much discussion, they both realized that condom use, although not 100% effective, can greatly decrease the transmission of HPV among sexual partners. SK and LM have decided to help educate others about HPV and how the STI is transmitted and contracted.

Literature Review

General HPV Information

Research studies focus on HPV, women and cervical cancer, and knowledge that women have about HPV. There are very few studies about the knowledge base of HPV among the male population or of the effects that HPV has on men. The studies that have been done on the male population are discussed in this section.

According to the CDC (2007a), approximately 20 million individuals are infected with HPV, with 6.2 million new cases of HPV infection each year. At least 50% of sexually active men and women will become infected with HPV at some point in their lives. Of the 100 types of HPVs, 30 are transmitted sexually, infecting the genital areas of men and women, including the penis, vulva, cervix, vagina, anus and rectum. Of those types that are transmitted sexually, some are considered high-risk such as types 16, 18, 31, 33, 35, 39, 45 and 51, since they can lead to cancer. Others are considered low-risk such as types 6, 11, 42, 43 and 44, which can lead to the development of genital warts (CDC, 2007a). Most individuals who become infected with HPV will not have any signs or symptoms of the infection and it will generally clear on its own within two years.

Knowledge of HPV

McPartland et al. (2005) studied men's perceptions and knowledge of HPV and cervical cancer. The study included male university students ages 1 to 25. Results showed that most men did not perceive HPV to be a severe disease for themselves. In fact, they considered it to be the least severe of other STIs including: chlamydia, gonorrhea, HIV, syphilis and genital herpes. However, men surveyed considered HPV to be a severe disease for their female partners, but they did not consider their current or recent partners to be at risk for HPV. In this same study, researchers found that 54.9%

had never heard of HPV prior to receiving the informational letter from the researchers. Only 9.9% of men knew that those with HPV might not have any visible signs and symptoms. Knowledge of HPV and sexual history was not significantly associated with the intention to reduce their number of sexual partners. The researchers stated that their findings were, "similar to earlier studies that found men do not perceive themselves to be susceptible to HPV" (McPartland et al., p. 229).

In another unpublished study, Baseley (2004) examined the knowledge of HPV among 105 young adults, both male and female. Findings from her study showed that 70.8% of males expressed uncertainty about what HPV was, compared with 42.6% of females. With the advent of the HVP vaccine it would be interesting to note whether male's knowledge of HPV has increased.

Cullen (2007) conducted a study, using the modified Baseley research tool, and assessed the knowledge of HPV among females ages 18 to 24 at a Midwestern women's health clinic. Cullen's findings showed that 70% of participants recognized HPV as an STI, yet only 30% recognized HPV as the cause of genital warts.

Mays, Zimet, Winston, Kee, Dickes and Su (2000) conducted a qualitative study exploring the knowledge of HPV, genital warts, cervical cancer and Pap smears among females. Mays found that only 7 of the 40 participants had heard of HPV, while 35 of the participants had heard of genital warts. Five of the participants confused genital warts with herpes. Participants also had little understanding of the symptoms of genital warts. None of the participant's associated HPV infection with Pap smears. Overall, they found that there is limited knowledge regarding HPV, genital warts, cervical cancer and Pap smears. Mays et al. recommended that health care providers proactively incorporate sexual health counseling into their health care encounters.

Disclosure to Partner

Keller, von Sadovsky, Pankratz, and Hermsen (2000) conducted a study focusing on how the knowledge of HPV transmission, and beliefs about obligations to report, affected the self disclosure of HPV to sexual partners. Via questionnaires, the researchers asked 63 women and 29 men, ages 18 and older, who were attending a Midwestern, urban STI clinic about disclosure. Many individuals felt they would be stigmatized and experience a loss of intimacy if they disclosed to their partners their infection with HPV. Researchers found that 54% of participants did not feel the need to disclose their HPV infection to their sexual partner if they had no obvious recurrence in the past six months. That number rose to 70% if there had been no recurrence for two years. Overall the study showed that there was no relationship between the knowledge of transmission and perceived obligation to disclose the presence of HPV.

Knowledge of STIs

In June 2003, a report from the House of Commons Health Committee declared Britain on the brink of a public health crisis due to the increasing number of STIs. During the years 1996 to 2001, England saw a 500% rise in the number of syphilis cases among men. There was also an increase of 86%, 108% and 12% in gonorrhea, chlamydia and herpes respectively (House of Commons Health Committee, 2003).

Mason (2005) conducted a study on men's awareness of STIs in the Northwest region of England. Mason found that despite the high rates of STIs in England, 15% of men did not know that syphilis and herpes were STIs, 10% did not know that gonorrhea was an STI and 20% did not know that chlamydia was an STI. Mason noted that while studies have been carried out to investigate the awareness, the majority have been

undertaken on women or young people, while men to some extent have been ignored. Hence, little is known about the male population in relation to their knowledge of STIs.

Transmission of HPV

Human papillomavirus is related to having sex with multiple partners or to having unprotected sexual intercourse with an infected partner. Ferenczy and Franco (2007) suggest that there may be a high prevalence of HPV among sexually active individuals who do not use protection, since it only takes one encounter with an infected partner to transmit HPV. The high transmissibility rate of the virus explains the high prevalence of infection. Computer simulation studies on university students show the median per-act transmissibility rate is 40% per coital act. However, the transmissibility rate of male to female transmission alarmingly reaches 100% with 11 sexual encounters (Burchell, Richardson, Mahmud, Trottler, Tellier, Hanley, Coutlée & Franco 2006). These same simulation studies have also shown that HPV prevalence among male partners to be at least as high as that of women. According to Ferenczy and Franco (2007), the annual incidence of HPV cases is equal to the combined incidence of infections by trichomoniasis, chlamydia, gonorrhea, syphilis, herpes simplex type two, HIV and hepatitis B.

Human Papillomavirus in Men

Although men are not routinely tested for HPV infection, there are procedures available. These include a penile probe or swab that can be done to test for HPV positive DNA, which can be detected on the glans, corona, prepuce and shaft of the penis, with belief that the prepuce is the best site for DNA collection. Most studies have shown a slight increase in the prevalence of HPV among uncircumcised men. However, one study that found a significant difference among HPV prevalence did not account for

characteristics of the population such as sexual behaviors and cultural differences (Dunne, Nielson, Stone, Markowitz & Giuliano, 2006).

Human Papillomavirus Education

How much is HPV being discussed in middle and high schools? Beatty, O'Connell, Ashikaga and Cooper (2003) conducted a study among 108 middle and high school students in Vermont. The researchers wanted to know if enough education is being provided about HPV. Vermont has a higher incidence rate of cervical cancer at 9.2/100,000 compared to the rest of the U.S. at 7.0/100,000. Surveys were sent to middle school nurses and teachers as well as high school nurses and teachers. Results showed that 62% of respondents indicated that insufficient time was spent teaching about HPV, with 81% of nurses and 47% of teachers in the high school responding this way. There was no significant difference between middle school nurses and teachers. There was a significant difference noted between the high school (86%) and middle schools (57%) regarding the importance of teaching about HPV and the perception of HPV as a serious health problem relative to HIV/AIDS and other STIs. Although teachers and nurses found it important to teach young people about HPV, only 13% reported that they had the resources necessary for teaching. This study made note of the 2001 Vermont Youth Risk Behavior Survey (YRBS) and found that 34% of students in grades 8 to 12 are sexually active, yet the percentage of sexually active 12th graders is 59%. The researchers stress that the first step in prevention of HPV is knowledge, and that knowledge among this age group is limited; more education needs to be given consistently to adolescents in order to decrease the spread of HPV.

Influences on Sexual Behavior

Mexico City was the setting for a study about the influence friends and partners have on the sexual behaviors of young, unmarried heterosexual men, ages 15 to 25. Marston, Juarez and Izazola (2004) found that men who were having sex with a "friend" were more likely to use a condom than if they were having sex with their girlfriend. Additionally, men were three times more likely to use a condom if they were having sexual relations with someone who was not a friend or girlfriend. They found, however, that knowledge of STIs, in particular HIV, had no measurable effect on condom use.

Gullette and Lyons (2006) conducted a correlational study about the relationship of sexual sensation seeking behaviors, self–esteem and unprotected sex in college students. They believe that the escalating rate of STIs among adolescents and young adults is related directly to unprotected sexual intercourse, yet they question what it is that motivates college students to take risks that make them vulnerable to contract an STI. They found that college students who partake in sensation seeking behaviors, such as drugs and alcohol, usually do not use condoms during sexual intercourse thus leading to the spread of STIs.

Prevention

Since June 2006, females ages 9 to 26 may receive the HPV quadrivalent vaccine recombinant (*Gardasil*), as protection from types 6, 11, 16 and 18 (CDC, 2007c). Some health care providers encourage parents of girls ages 11 to 12 to consider having their daughters vaccinated at this time. Trials continue to be underway to evaluate the duration of immune response as well as efficacy among men and women ages 27 and older (Mahoney, 2006). Gardasil needs to be used in combination with yearly Pap smears as well as practicing safe sexual behaviors. Through the use of the vaccination,

the female population may obtain a higher level of coverage, which in turn may result in reduced transmission among men.

Although HPV vaccine is currently approved for use in females ages 9 to 26, there are studies underway looking at the use in men (CDC, 2007b). Merck, the manufacturer is sponsoring a clinical trial of HPV vaccine in 4,000 men, including 500 self-identified gay men. The purpose of the trial is to evaluate the efficacy of the vaccine in preventing genital warts and anal carcinoma. Initial results are expected toward the end of 2008 (*Contraceptive Technology*, 2007).

Cervarix is a new HPV vaccine introduced to the Food and Drug Administration (FDA) by GlaxoSmithKline in March 2007. If the vaccine becomes licensed, it will be indicated for the prevention of cervical cancer and precancerous lesions associated with the most common cancer causing HPV types. Cervarix is designed to boost the immune response and increase the length of protection compared to Gardasil. Cervarix has been approved in Australia for use in females ages 10 to 45 (Glaxo Smith Kline [GSK], 2008).

Summary

In this chapter the theoretical framework for the study as well as a literature review is provided. The HBM was explained with HPV as an example citing how one's sexual behaviors could change, thus lessening the risk for contracting HPV depending on: (a) perceived susceptibility, (b) perceived severity, (c) perceived benefits, (d) perceived barriers, (e) cues to action, and (f) self-efficacy.

Literature and research studies pertaining to HPV were reviewed. Topics reviewed included knowledge of HPV, knowledge of STIs, HPV education, social influences on sexual behavior, and transmissibility of HPV.

The review of literature indicates a need for more research to determine what exactly males know about HPV. Since HPV is detected routinely in women, many men may think it is an STI that affects women only.

CHAPTER III

METHODOLOGY

Study Design

A descriptive research design was used in this study to determine the knowledge of HPV among college males. With permission from the author, Baseley (2004), a modified questionnaire was used. The questionnaires were distributed to male students seeking care at a Midwestern U.S. university student health center. The questions inquired about knowledge of HPV as well as other STIs, sexual practices and sexual preferences, as well as demographic information.

Population, Sampling and Setting

The sample for this study consisted of male college students ages 18 to 24 who sought care from a student health center at a Midwestern U.S. university. Following policies and procedures, university Institutional Review Board (IRB) approval (Appendix A) and permission from the student health center were obtained. Participants were given the questionnaire to complete while they were waiting to be seen. Excluded from the study were those who were not male, those who were not college students and those who did not fall within the appropriate age range, as well as those who did not speak English.

Data Collection Instruments

A researcher-modified questionnaire was used with permission from the author (Appendix B). The original tool consisted of 41 questions; however, not all questions

met the needs of this study. Therefore, the modified questionnaire contained 30 questions (Appendix C) measuring knowledge of HPV and other STIs, information regarding sexual practices and preferences, and demographic information. The original tool consisted of questions pertaining to both males and females; since the focus of this study was male college students, questions pertaining to the female population were excluded.

A pilot test was conducted among five male volunteers ages 19, 19, 21, 22, 23. This allowed the researcher to identify any areas/questions of concern as well as to determine the length of time needed to complete the questionnaire.

Ethical Considerations

The researcher obtained approval to conduct this study by submitting a proposal to the university IRB. Participants were assured anonymity; they were instructed not to write their name anywhere on the questionnaire. Participants were aware of the purpose of the study prior to completing the questionnaire from an information sheet with the researcher's contact information as well as contact information for the IRB should they have any questions (Appendix D). Informed consent was implied once the questionnaire was completed.

Data Collection Procedures

Participants for this study were obtained through convenience sampling by distributing questionnaires to male college students who sought care at the student health center. The researcher contacted the director of the student health services center in order to gain permission to conduct research at the clinic. The researcher

spoke with office staff, which included licensed practical nurses and receptionists at the health center and asked them to distribute the questionnaires to all male patients who checked in for appointments. The office staff instructed the male students to complete the questionnaire while waiting for their appointment. Participation was completely voluntary. Upon completion of the questionnaire the participants placed the form in a locked box to which only the researcher had access. Data collection took place from October 31, 2007 until November 23, 2007.

Data Analysis

Upon completion of the data collection, the researcher used the Statistical Package for the Social Sciences (SPSS) to analyze the data. Descriptive statistics were used to describe characteristics of male college students' knowledge of HPV. The researcher calculated the means, frequencies and responses to each question.

Limitations

Limitations for this study included:

1. Some participants did not fill out the questionnaire completely.
2. Sample size was 91, which may be too small to generalize.
3. Data were obtained from only one setting and geographical area.

Summary

In order to explore their knowledge of the STI, HPV, a 30 item questionnaire was given to all male students checking in for an appointment at a university student health center. Answers to the questions provided information regarding which infections males

think are sexually transmitted, can males contract/transmit HPV, how concerned males are about contracting an STI, use of condoms, number of sexual partners, how HPV is contracted/transmitted and demographic information.

CHAPTER IV

FINDINGS AND DISCUSSION

The purpose of this study was to describe the knowledge of HPV among male college students. A non-experimental, descriptive survey was used.

Data were collected during November 2007. A total of 115 surveys were left at the student health center. Of the 115 surveys, 105 were completed and analyzed for an overall response rate of 91%. Fourteen surveys were disregarded due to being outside the 18- to 24-year age range, thus there were 91 completed surveys. This chapter describes findings of the survey and the use of the theoretical framework to help explain the findings.

Demographic Data

The 91 person convenience sample was made up of male college student's aged 18-24 who were seeking care at the university student health center. The majority of participants (85.8%) were ages 18 to 22, with 7.7% being ages 23 and 24 and 6.6% of participants not responding. Eighty of the 91(88%) participants were of White, non-Hispanic origin, six individuals chose not to answer the question, two answered "other" but failed to specify, one was Asian or Pacific Islander and two participants were of Black, non-Hispanic origin. Age and race of students is listed in Table 1 and Table 2.

Table 1

Ages of Participants

Age	Frequency	Percentage
18	17	19%
19	19	21%
20	13	14%
21	17	19%
22	12	13%
23	4	4%
24	3	3%
Missing data	6	7%
n=91		

Table 2

Racial and Ethnic Background

Race/Ethnicity	Frequency	Percentage
American Indian	0	0
Asian or Pacific Islander	1	1%
Black (non-Hispanic)	2	2%
Hispanic or Latino	0	0
White (non-Hispanic)	80	88%
Other	2	2%
Missing data	6	7%
n=91		

Concerning the participants' marital status, 89% of participants were single, 3.3% were living with their partner and 7.7% left the question blank (Table 3). Thirty-five participants live on campus in the dorms with a roommate while thirty-four participants live off campus with a roommate(s). Ten lived on campus alone and four lived off campus alone, while two respondents lived with parents or other family and commuted to school. Six individuals left the question blank (Table 4).

Table 3

Marital Status

Status	Frequency	Percentage
Single	81	89.0%
Married	0	0
Separated	0	0
Divorced	0	0
Widowed	0	0
Living with Partner	3	3%
Missing data	7	8%

n=91

Table 4

Living Situation

Living Situation	Frequency	Percentage
On campus (dorms with roommate)	35	39%
On campus (dorms alone)	10	11.0%
Off campus (with roommates)	34	37%
Off campus (alone)	4	4%
With parents or other family in Oshkosh	0	0
With spouse and/or children in Oshkosh	0	0
With parents or other family outside Oshkosh (commuter)	2	2%
With spouse and/or children outside Oshkosh (commuter)	0	0
Missing data	6	7%
n=91		

Participants were asked about their sexual preference, 73 (80.2%) of the students prefer females, nine (9.9%) prefer males, two (2.2%) chose both males and females; one individual chose "other" but failed to state what other was and six (6.6%) individuals did not answer the question.

Tables 5 and 6 show the participant's year in school along with major they are studying. There were 23 freshman and 23 seniors completing the questionnaire along with 21 sophomores, 18 juniors, and 6 individuals who did not answer the question. Letters and science was the most identified area of study followed by business, education, and nursing. Eight individuals responded undecided, six answered "other" but failed to specify what "other" was, and seven failed to answer the question.

Table 5

Year in School

(n=91) Class	Frequency	Percent
Freshman	23	25%
Sophomore	21	23%
Junior	18	20%
Senior	23	25%
Missing data	7	8%

n = 91

Table 6

Major Area of Study

Major	Frequency	Percent
Business	24	26%
Education	10	11%
Letters & Science	35	39%
Nursing	1	1%
Undecided	8	9%
Other	6	7%
Missing data	7	8%

n=91

Participants were asked about sex activity. Eighty-one (89%) of participants have participated in oral sex. Sixty (65.9%) of the participants were currently sexually active; however, 89% had had sexual intercourse in the past, although they are not currently sexually active. The average age of individuals when they had intercourse for

the first time was 17 (Table 7). Average number of sexual partners in the past year was 2.68 (Table 8), and average number of lifetime partners was 5.61 (Table 9).

Table 7

Age of Sexual Intercourse for the First time

Age	Frequency	Percent
9	1	1%
12	1	1%
13	1	1%
14	1	1%
15	8	9%
16	15	17%
17	22	24%
18	20	22%
19	7	8%
20	3	3%
21	2	2%
Missing data	10	11%
n=91		

Table 8

Number of Partners in the Past Year

Number	Frequency	Percent
0	4	4%
1	38	42%
2	20	22
3	7	7%
4	5	6%
5	3	3%
6	2	2%
7	2	2%
8	1	1%
9	1	1%
48	1	1%
Missing data	7	8%
n=91		

Table 9

Number of Lifetime Partners

Number of Partners	Frequency	Percent
0	1	1%
1	17	19%
2	14	15%
3	10	11%
4	7	8%
5	10	11%
6	2	2%
7	7	8%
8	2	2%
9	3	3%
10	2	2%
13	1	1%
14	1	1%
16	1	1%
18	1	1%
19	1	1%
20	3	3%
54	1	1%
Missing data	7	8%
n=91		

Knowledge of STIs

Do male students know which diseases are STIs? To help answer this question individuals were asked to identify from a list, which diseases were STIs. They were also asked if they had ever been diagnosed with an STI or if they knew anyone who had been diagnosed with an STI. This information shown in Tables 10, 11, and 12 was compared to the data Baseley found in 2004. Baseley researched the knowledge of HPV among young adults both male and female using the same questions at the same university. In 2004, 60% of male participants recognized HPV as an STI while 67% of males in the current study recognized HPV as an STI. Recognizing genital warts as an

STI among males stayed similar with 84% in 2004 and 82% in 2007. When participants were asked if they knew someone diagnosed with an STI, the statistics decreased among some STIs while increasing three- and four-fold in others. In 2004 only 4% of participants knew someone diagnosed with HPV compared with 8% in the current study.

Table 10

Diseases Recognized by Participants as STIs

Disease	2007 (Jackan) (n=91)	2004 (Baseley) (n=25)
Chlamydia	75 (82%)	23 (92%)
Genital Herpes	75 (82%)	21 (84%)
Genital Warts	75 (82%)	21 (84%)
Gonorrhea	75 (82%)	21 (84%)
Hepatitis B	52 (57%)	12 (48%)
HIV	70 (77%)	18 (72%)
HPV	61 (67%)	15 (60%)
Syphilis	73 (80%)	24 (96%)
Trichomonas	26 (29%)	11 (44%)

Table 11

History of STI Diagnosis

Disease	2007 (Jackan) (n=91)	2004 (Baseley) (n=25)
Chlamydia	2 (2%)	1 (4%)
Genital Herpes	1 (1%)	0
Genital Warts	0	0
Gonorrhea	0	0
Hepatitis B	0	0
HIV	0	0
HPV	0	0
Syphilis	0	0
Trichomonas	0	0

Table 12

Know Someone With History of an STI

Disease	2007 (Jackan) (n=91)	2004 (Baseley) (n=25)
Chlamydia	11 (12%)	7 (28%)
Genital Herpes	14 (15%)	1 (4%)
Genital Warts	6 (7%)	3 (12%)
Gonorrhea	5 (5%)	1 (4%)
Hepatitis B	1 (1%)	0
HIV	4 (4%)	1 (4%)
HPV	7 (8%)	1 (4%)
Syphilis	2 (2%)	0
Trichomonas	1 (1%)	0

Individuals were also asked how concerned they were with contracting an STI. Of the 91 participants 20 responded that they were very concerned, 46 were somewhat concerned and 24 were not at all concerned and one individual failed to answer the question. These findings are relatively the same as those found by Baseley (2004), although her data did not discern males from females.

Participants were questioned as to who can contract HPV; men, women or both. A majority (74.7%) responded that both men and women can contract HPV, while 15.4% thought only women and 9.9% thought only men could contract the disease. Participants were also asked if once treated can HPV recur. More than half (54.9%) responded that they were uncertain as to the recurrence of HPV, while 44% responded "yes" HPV can recur once treated, one person failed to answer the question

How HPV is transmitted was asked of the participants. In the current study, two separate questions were asked, one pertaining to the transmission of HPV, and the other pertaining to the transmission of genital warts. The majority (48; 52.7%) answered that HPV is transmitted by the exchange of bodily fluids. Thirty-nine participants (42.9%) were uncertain how HPV was transmitted. There was less uncertainty with the transmission of genital warts, 65 (71.4%). Sixty-five participants (71.4%) believed that genital warts are spread by skin to skin contact. Tables 13 and 14 depict knowledge of the modes of transmission for HPV and genital warts compared to data collected in 2004.

Table 13

Human Papillomavirus Transmission Beliefs

Transmission	2007 (n=91)	2004 (n=25)
Kissing	8 (9%)	3 (12%)
Skin to Skin Contact	27 (30%)	2 (8%)
Oral sex	31 (34%)	7 (28%)
Anal intercourse	34 (37%)	5 (20%)
Exchange of bodily fluids	48 (53%)	8 (32%)
Toilet seats	3 (3%)	0
Uncertain	39 (43%)	16 (64%)

Table 14

Genital Wart Transmission Beliefs

Transmission	2007 (n=91)	2004 (n=25)
Kissing	6 (7%)	1 (4%)
Skin to Skin Contact	65 (71%)	12 (52%)
Oral sex	48 (53%)	7 (30%)
Anal intercourse	49 (54%)	8 (35%)
Exchange of bodily fluids	40 (44%)	7 (30%)
Toilet Seats	18 (20%)	1 (4%)
Uncertain	16 (18%)	8 (35%)

Participants were asked what HPV is from a listing of choices and could check all that apply. It was found that 53.8% believed that HPV was a viral infection and 45.1%

believed it was an STI. In 2004, 12.5% believed HPV was a viral infection and 25% believed HPV was an STI. Although better than 2004, yet still low, 15.4% believed HPV is related to genital warts. Uncertainty about the perception of HPV is 31.9% in this study compared to 70.8% in 2004 (Table 15).

Table 15

Perceptions of HPV

	2007 (n=91)	2004 (n=25)
Viral Infection	49 (54%)	3 (13%)
STI	41 (45%)	6 (25%)
Bacterial Infection	13 (14%)	1 (4%)
Genital Warts	14 (15%)	1 (4%)
Genital Herpes	8 (9%)	0
Uncertain	29 (32%)	17 (70%)

HPV may present in different ways; however, HPV most frequently lies dormant in the body without any signs or symptoms or it presents as genital warts. Participants were asked to check all that apply from a list of HPV signs and symptoms. Seventeen participants (18.7%) believed that there are not any symptoms associated with HPV. Twenty (22%) believed that HPV may present as flat round bumps, while 57 (62%) were uncertain as to how HPV infections presents. One individual answered "other" but failed to specify what "other" meant (Table 16).

Table 16

Human Papillomavirus Symptoms

Symptom	Frequency	Percent
Pain with urination	19	21%
Abdominal pain	8	9%
Abnormal bleeding	9	10%
Flat round bumps	20	22%
Open sores	14	15%
No symptoms	17	19%
Uncertain	57	63%
Other	1	1%

n = 91

Prevention of HPV

Participants were asked how often they used a condom with intercourse and half (50.5%) answered that they always or every time used a condom, while seven persons (8%) responded that they rarely or never use a condom and nine individuals did not answer the question. In Baseley's (2004) study she found that only 28 % of participants use a condom every time. Table 17 depicts the responses to condom use.

Table 17

Condom Use

Frequency of Use	2007 (n=91)	2004 (n=25)
Always	46 (51%)	5 (28%)
Most of the time	19 (21%)	2 (11%)
Sometimes	10 (11%)	2 (11%)
Rarely	5 (6%)	2 (11%)
Never	2 (2%)	N/A
Missing data	9 (10%)	7 (39%)

Have young males noticed the advertisement for Gardasil, the HPV vaccine and wondered what Gardasil or HPV is? Participants were asked if they have seen any advertisements for HPV or the HPV vaccine Gardasil. Only 35 (38.5%) participants have seen advertisements regarding HPV or Gardasil. Five individuals (5.5%) chose not to respond to the question.

Summary

Knowledge of STIs, HPV, genital warts and demographic information showed that male college students have limited knowledge necessary to protect themselves and their partners from contracting HPV. Multiple questions focused on the knowledge of HPV among males age 18-24. Many participants' answers displayed little knowledge of HPV and the fact that it causes genital warts as well as how HPV presents. Roughly two-thirds (63%) of participants were uncertain regarding the symptoms of HPV. When compared to similar studies by Baseley (2004) and Cullen (2007, these findings seem to be consistent.

Data regarding the sexual practices of male college students were provided. Most participants were heterosexual however 10% preferred male partners. Concern over contracting an STI as well as condom use showed that 8% of participants rarely or never use a condom and approximately one-fourth of participants were not at all concerned about contracting an STI.

CHAPTER V

SUMMARY, CONCLUSIONS, LIMITATIONS, IMPLICATIONS AND RECOMMENDATIONS

Summary

This study's purpose was to explore and describe the knowledge of HPV among male college students. The study used a convenience sample of 91 male college students ages 18 to 24 who were seeking care at a Midwestern university student health center. Students volunteered for the study after being provided with an information sheet regarding informed consent and the purpose for the study. The student health center staff administered a modified 30-item questionnaire measuring the knowledge of HPV and other STIs, sexual practices, sexual behaviors and demographic information. The sample included 91 participants who completed questionnaires. Data were analyzed using descriptive statistics to determine the percentages, frequencies and other responses regarding their knowledge of HPV.

This study used the HBM as framework. The HBM is made up of four core constructs: perceived susceptibility, perceived severity, perceived benefits and perceived barriers. When participants were asked if they were very concerned, somewhat concerned or not at all concerned about contracting an STI, the researcher was looking to examine the participants' perceived severity and perceived susceptibility. According to the results of this study, 65.9% of the participants were currently sexually active and approximately three-fourths of the participants were either very or somewhat concerned about contracting an STI. One-fourth of participants responded that they were not at all concerned. This could mean that they did not feel they were at risk because they were

not sexually active, they were mostly monogamous, or they did not think they could contract the disease in their particular situation. In order to evaluate perceived benefits and perceived barriers, participants were asked if they use a condom with intercourse, and if so, how often. The choices were always (every time), most of the time (at least 3 out of 4 times), sometimes (about half of the time), rarely (now and then) or never. Of those participants who have had sexual intercourse, 51% reported always using a condom, while 6% and 2% respectively used a condom rarely or never.

Conclusions

There are some conclusions from analyzing the data that can be made:

1. Since no STI was identified correctly by all participants, this sample of young college males was not knowledgeable about different types of STIs.
2. Eighty-two percent of the paticipants recognized chlamydia, genital herpes, genital warts and gonorrhea as STIs. Fifty-seven percent believed hepatitis B to be an STI. Seventy-seven percent believed that HIV is an STI, while 80.2% believed that syphilis is an STI.
3. Half of the participants used a condom every time they had intercourse.
4. Half of the participants were only somewhat concerned about contracting an STI.
5. Human papillomavirus is not a familiar STI to most young men. Only 67% of the participants recognized HPV as an STI.
6. Sixty-three percent of participants were unaware of how HPV is transmitted.
7. Eighty-nine percent of the participants have had sexual intercourse.

8. Sixty-six percent of the participants were currently sexually active.
9. Eighty-nine percent of the participants have had oral sex.

Limitations of the Study

Many factors influenced the generalizability of the study. A convenience sample was used which may not accurately represent the target population. The sample was comprised of only males ages 18-24. The majority were White and single, which limits the generalizability. Not all participants completed the survey completely. Some participants may not have been completely honest with their answers even though they were told the questionnaires were anonymous. Some participants may have felt pressured to complete the surveys because they were given the surveys when they checked in for appointments.

Implications for Nursing Practice

Although there have been studies done on the knowledge of HPV among women, there have been very few studies done on just the male population, making this study significant to nursing practice. The results of this study demonstrate that males ages 18 to 24 need education regarding HPV, especially since new infections are most prevalent in this age group. Although HPV education is needed, so is education regarding other STIs. Information should be available and provided to individuals at office visits with their health care providers. Talking about STIs should not be taboo; this topic should be brought up frequently. Health care providers need to ask appropriate questions in order to ascertain their patient's knowledge regarding STIs and, more specifically, HPV.

If the knowledge and awareness about HPV increases among the male population then they can take the proper precautions to not only protect themselves but also their partners. However, individuals need to realize the seriousness of HPV infection. Even though they may have knowledge regarding HPV, use condoms with intercourse, and feel that it will not happen to them, HPV *can* happen to them and the risk of transmitting and contracting HPV increases with each sexual encounter. Males need to be made aware of this.

Surprisingly, only 38.5% of participants had responded that they had seen advertisements for HPV or Gardasil. This response rate needs to increase. Young individuals need to be aware of what HPV is, how it is spread, the signs and symptoms, and how they can protect themselves and their partner/s. Young people need to know that they are at risk each time they decide to have sexual intercourse. With education it is hoped that men will realize that HPV is a very prevalent disease and either they or their partners can have the disease and not know, thus protection becomes extremely important.

Recommendations for Further Study

After analyzing the results of this study it is evident that there is a need for education regarding HPV and other STIs in the young adult male population. A study in which education was evaluated would be useful to determine if sexual practices and concern about contracting and STI would change after receiving education. This could be explored using a pre- and post-test form of evaluation. It would also be of interest to determine what the barriers are and why condoms are not being used all of the time. Is there a common barrier to condom use that could easily be remedied?

It would be interesting to compare the responses of this study with those responses of the same type of population from universities in other areas of the state, region and country to determine if knowledge is lacking all over or only in certain geographical areas; this would allow for greater generalizability.

It seems as though HPV vaccine has increased the awareness of HPV among females, but the vaccine is only recommended for females ages 9 to 25. If a vaccine were available for the male population, would the knowledge and awareness of HPV be increased? This would be an interesting topic to research in the future as there are studies being conducted at this time among males and HPV vaccine.

APPENDIX A

UW Oshkosh IRB Approval Letter

October 16, 2007

Ms. Jennifer Jackan
1630 Plum Tree Ct.
Kaukauna, WI 54130

Dear Ms. Jackan:

On behalf of the UW Oshkosh Institutional Review Board for Protection of Human Participants (IRB), I am pleased to inform you that your application has been approved for the following research: Knowledge of HPV Among Male College Students.

Your research has been categorized as EXEMPT. This means you will not be required to obtain signed consent. However, unless your research involves **only** the collection or study of existing data, documents, or records, you must provide each participant with a summary of your research that contains all of the elements of an Informed Consent document, as described in the IRB application material. Permitting the participant, or parent/legal representative, to make a fully informed decision to participate in a research activity avoids potentially inequitable or coercive conditions of human participation and assures the voluntary nature of participant involvement.

Please note that it is the principal investigator's responsibility to promptly report to the IRB Committee any changes in the research project, whether these changes occur prior to undertaking, or during the research. In addition, if harm or discomfort to anyone becomes apparent during the research, the principal investigator must contact the IRB Committee Chairperson. Harm or discomfort includes, but is not limited to, adverse reactions to psychology experiments, biologics, radioisotopes, labeled drugs, or to medical or other devices used. Please contact me if you have any questions (PH# 920/424-7172 or e-mail:rauscher@uwosh.edu).

Sincerely,

Dr. Frances Rauscher
IRB Chair

cc: Roxana Huebscher
1236

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APPENDIX B

Permission for Tool Use

----- Original Message -----
From: Theresa Baseley <baselt07@uwosh.edu>
Date: Monday, July 23, 2007 10:17 pm
Subject: Re: Research tool
To: Jennifer Jackan <jackaj41@uwosh.edu>

> Not a problem.
>
> I would love to have a synopsis of your findings. I must warn
> you, the tool was a bit tedious to analyze. It involved several
> tables, etc. None the less, it was quite informative.
>
> I adapted my tool from a prior study (cannot remember the author
> anymore, but it was listed in my paper if you need that as a resource)
>
> good luck! > If I can help in any manner, let me know.
>
> Tj Baseley
>
> ----- Original Message -----
> From: Jennifer Jackan <jackaj41@uwosh.edu>
> Date: Monday, July 23, 2007 10:27 am
> Subject: Research tool
> To: baselt07@uwosh.edu
>
> > Hi Theresa,
> >
> > My name is Jennifer Jackan and I was wondering if I could use
> > the tool you developed for your clinical research paper?
> > My paper will be answering the question: What is the
> > Knowledge of HPV Among College Males Age 18-24? I would
> be
> > happy to provide you with the results after completion of the
> > study. Please feel free to contact me with any questions
> > via email or phone.
> >
> > Thanks,
> >
> > Jennifer Jackan

APPENDIX C

Modified HPV Questionnaire

Male College Student's Knowledge of HPV

Please complete the following survey answering all the questions as best you can.
Please DO NOT write your name or any other identifying information on this form.

General sexually transmitted infection (STI) information

1. Which of the following are sexually transmitted infections (also called STI's)?
Check all that apply.

1.___Chlamydia
2.___Genital Herpes
3.___Genital Warts
4.___Gonorrhea
5.___Hepatitis B
6.___HIV (AIDS)
7.___Human Papillomavirus (HPV)
8.___Syphilis
9.___Trichomomans
10.___Other (please specify)

2. How concerned are you about contracting a STI?

1.___Very concerned
2.___Somewhat concerned
3.___Not at all concerned

3. Have you ever been diagnosed with: **Check all that apply.**

1.___Chlamydia
2.___Genital Herpes
3.___Genital Warts
4.___Gonorrhea
5.___Hepatitis B
6.___HIV (AIDS)
7.___Human Papillomavirus (HPV)
8.___Syphilis
9.___Trichomomans
10.___Other (please specify)

4. Do you know any other person who has been diagnosed with any of the following?
Check all that apply.

1.___Chlamydia
2.___Genital Herpes
3.___Genital Warts
4.___Gonorrhea
5.___Hepatitis B
6.___HIV (AIDS)
7.___Human Papillomavirus (HPV)
8.___Syphilis
9.___Trichomomans
10.___Other (please specify)

HPV Information

5. What is HPV? **Check all that apply.**

1.___A viral infection
2.___Sexually transmitted infection (STI)
3.___A bacterial infection
4.___Genital warts
5.___Genital herpes
6.___Uncertain or don't know

6. How is HPV transmitted? **Check all that apply.**
   1.___Kissing
   2.___Skin to skin contact during intercourse
   3.___Oral sex
   4.___Anal intercourse
   5.___Exchange of bodily fluids such as blood or semen
   6.___Community toilet seats
   7.___Uncertain
   8.___Other (please specify)

7. What are signs and symptoms of HPV? **Check all that apply.**
   1. ___Pain with urination
   2.___Abdominal pain
   3.___Abnormal bleeding from penis or vagina
   4.___Flat round bumps usually in groups
   5.___Open sores on the penis or vagina
   6.___No symptoms (can lay dormant)
   7.___Uncertain
   8.___Other (please specify)

8. Who can get HPV? **Check one only.**
   1.___Men
   2.___Women
   3.___Both men and women

9. Can HPV come back after being treated?
   1.___Yes, even though it has been treated, it can recur
   2.___No, once it has been treated it will never recur
   3.___Uncertain or don't know

10. To which of the following is HPV related? **Check all that apply.**
   1.___Cervical dysplasia (abnormal cells)
   2.___Genital warts
   3.___Penile dysplasia (abnormal cells)
   4.___Abnormal pap smears
   5.___None of the above

11. Can HPV increase the risk of cervical cancer?
   1.___Yes 2.___No

12. Can HPV increase the risk of rectal/anal cancer?
   1.___Yes 2.___No

13. Which of the following causes genital warts? **Check all that apply.**

1.___Chlamydia
2.___Gonorrhea
3.___Hepatitis B
4.___Herpes
5.___HIV (AIDS)
6.___Human Papillomavirus (HPV)
7.___Syphilis
8.___uncertain

14. How are genital warts transmitted? **Check all that apply.**

1.___kissing
2.___skin to skin contact during intercourse
3.___oral sex
4.___anal intercourse
5.___exchange of bodily fluids such as blood or semen
6.___community toilet seats
7.___uncertain

Sexual Practices Information

15. Sexual Preference

1.___Male
2.___Female
3.___Both
4.___Other

16. Have you ever had oral sex?

1.___Yes
2.___No

17. Have you ever had sexual intercourse?

1.___Yes
2.___No

18. If you have had sexual intercourse at what age did you first have sexual intercourse? _____

19. Are you currently sexually active (had intercourse within the past month)?

1.___Yes
2.___No

20. Total number of sexual partners in your lifetime? _____
21. Total number of sexual partners in the last year? _____
22. Do you use a condom with intercourse? _____

23. If you use STI protection (a condom), how often do you use it?
    1.___Always (every time)
    2.___Most of the time (at least 3 out of 4 times)
    3.___Sometimes (about half of the time)
    4.___Rarely (now and then)
    5.___Never

24. Have you seen any advertisements for HPV or the HPV vaccine (Gardasil)?
    1.___Yes
    2.___No

Demographic Information

25. Age:____

26. Marital Status
    1.___Single
    2.___Married
    3.___Separated
    4.___Divorced
    5.___Widowed
    6.___Living with partner

27. Living Situation
    1.___On campus (Dorms with roommate)
    2.___On campus (Dorms living alone)
    3.___Off campus housing (with roommates)
    4.___Off campus housing (live alone)
    5.___With parents or other family in Oshkosh
    6.___With spouse and/or children in Oshkosh
    7.___With parents or other family outside Oshkosh (commuter)
    8.___With spouse and/or children outside Oshkosh (commuter)

28. Which of the following best represents your racial and ethnic heritage?
    1.___American Indian
    2.___Asian or Pacific Islander
    3.___Black (non-Hispanic)
    4.___Hispanic or Latino
    5.___White (Non-Hispanic)
    6.___Other (please specify) _____

29. Please specify your class level
    1.___Freshman
    2.___Sophomore
    3.___Junior
    4.___Senior
    5.___Graduate
    6.___Other (please specify) _____

30. What is your major in college?
    1.___College of Business
    2.___College of Education
    3.___College of Letters and Science
    4.___College of Nursing
    5.___Undecided
    6.___Other (please specify) _____

Thank you for your time. Please drop the survey in the locked box located in the waiting area.

APPENDIX D

Informational Letter

University of Wisconsin Oshkosh Information Document

Male College Students' Knowledge of Human Papillomavirus Infection

I am a graduate student at the University of Wisconsin Oshkosh seeking a Master of Science in Nursing degree. I am conducting a study to explore the knowledge of Human Papillomavirus (HPV) infection among male college students ages 18-24. I would appreciate your participation in this study. Please fill out this questionnaire; it will take approximately 10-15 minutes of your time.

Your answers will remain anonymous and your identity cannot be linked to your answers in any way. **Please do not put your name or any other identifying information on the questionnaire.**

The information may assist me in making recommendations to health care providers for improving care and education of college males.

Participation is voluntary. There is no foreseeable risk to you other than the inconvenience of time required to complete the questionnaire. By completing this questionnaire it is understood that you have given consent to participate in this study. After completion of the study, I will be happy to make the overall results available to the Student Health Center. If you have any questions or concerns about this study please feel free to contact me:

Jennifer R. Jackan, BSN, RN jackaj41@uwosh.edu
or
College of Nursing Graduate Office (920) 424-2106

If you have any questions or complaints about your treatment as a participant in this study, please call or write:

Chair, Institutional Review Board for Protection of Human Participants
C/O Grants Office
UW Oshkosh
Oshkosh, WI 54901
(920) 424-1415

Thank you for your consideration.
Jennifer R. Jackan, BSN, RN

REFERENCES

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