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The Knowledge of Sexually Transmitted Diseases Among College Students

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The Knowledge of Sexually Transmitted Diseases Among College Students

by

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Abstract

The purpose of this study was to address the perceived and actual knowledge levels of sexually transmitted diseases (STDS) among college students at a southern university. The sample consisted of 138 participants over the age of 18 enrolled as undergraduate students at the University of Southern Mississippi (USM). A questionnaire was distributed via email listserv to the undergraduate population at USM assessing the attitudes and knowledge surrounding sexually transmitted diseases. The survey included three sections for the assessment of each variable: 12 demographic questions, 20 statements assessing student attitudes regarding the quality of their previous sex education and perceived knowledge, and 20 true or false statements about the acquisition, transmission, and potential consequences of sexually transmitted diseases. Overall, the student participants perceived they had more knowledge about sexually transmitted diseases than the results from the knowledge section indicated. Continued education on the subject of sexually transmitted diseases is needed among this population.

Keywords: Sexually Transmitted Diseases, Knowledge, Attitudes, Education, College Students, South

Dedication

I would like to dedicate this thesis to my mom for all of her love and support she provided me growing up and through my college years as I pursued my dream of becoming a nurse. Although she won't be able to see me complete my research and graduate with honors, I know she will be smiling down from heaven with the same love she has given me since the very beginning.

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Finally, I would like to thank my dad. Thank you for being my rock, my shoulder to cry on, and my constant source of unending, unfailing love. Thank you for being everything I need and being strong for me in my weakest moments. These past four years have been some of the most rewarding, devastating, and uplifting years of my life and I know in my heart I would not be where I am today without you. I am so lucky to have the best dad in the world.

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List of Abbreviations

CDC Centers for Disease Control and Prevention

IRB Institutional Review Board

STD Sexually Transmitted Disease

USM University of Southern Mississippi

Chapter I: Introduction

The problem explored throughout this study involves the prevalence of sexually transmitted diseases (STDs) among college students. Furthermore, this study examines the knowledge college students have regarding sexually transmitted diseases. Over the past decade, the incidence of sexually transmitted diseases among young adults ages fifteen to twenty-four years old has increased considerably (Centers for Disease Control and Prevention, 2016a). This subsection of the population is responsible for over half of the twenty million new sexually transmitted disease (STD) cases diagnosed each year and over 16 billion dollars in health care expenditures annually (Centers for Disease Control and Prevention, 2016a). In 2015, the Centers for Disease Control and Prevention found there was a 6% increase in diagnosed Chlamydia cases and 13% increase in diagnosed Gonorrhea cases since 2014 (Centers for Disease Control and Prevention, 2016a).

High rates of diagnosed cases of sexually transmitted diseases can be attributed to many factors. The lack of continued sex education is a key issue contributing to the rise in diagnosed cases of sexually transmitted diseases and also lays the foundation for prevention if new standards were to be implemented. In a survey distributed to physicians it was noted that patients under the age of 18 were the least informed on the subject of sexually transmitted diseases yet continued to have sex despite the lack of knowledge (Stoskopf, 1999). Among sexually active college students, 50% of them do not wear condoms during sexual intercourse (Steinmetz, 2013). One contributing factor to negligent condom usage is insufficient knowledge regarding transmission of sexually transmitted diseases.

The provision of sex education in schools is a controversial topic stemming from the debate on whether it is the school's responsibility or the parent's responsibility to educate their children about the consequences of sexually transmitted diseases. Synovitz, Hebert, Kelley, and Carlson (2002) note that sexuality messages are first learned from an individual's parents who have the primary responsibility for providing their children with sex education, but they also argue that communities have an obligation to provide quality sex education programs for their youth. Community education on the subject of sex should enrich the foundational teaching set forth by parents, but recent studies have noted the appearance of an inverse relationship between sex education in high school and knowledge of sexually transmitted diseases among college students (Synovitz, Hebert, Kelly, & Carlson, 2002).

Potential causes for the inverse relationship between sex education provided before college and actual knowledge regarding sexually transmitted diseases once in college includes misinformation and the inability to retain knowledge from years past (Synovitz, et al., 2002, p. 171). Another possible variable to consider is the lack of motivation students have to continue learning about updated safe sex practices and new information on sexually transmitted diseases after receiving sex education in high school or middle school. The perception that a student is knowledgeable about sexually transmitted diseases after only having received information in high school on the subject of sexuality education has led to a large population of students who remain uneducated on STD transmission and measures to take in order to protect oneself from the harmful effects of acquiring an STD.

Conversely, knowledge about sexually transmitted diseases among students who had received sex education in college was much higher compared to those who had received sex education in high school (Synovitz et al., 2002). While continuing sex education in college plays an important role in giving students access to the most current information about sexually transmitted diseases and safe sex practices, only 43% of college students report having access to sexuality education in college (Synovitz et al., 2002). The provision of sex education should be of great importance on college campuses as sexual health knowledge is an indicator of sex communication and confidence in the ability to use condoms (Weinstein, Walsh, & Ward, 2008). The lack of sexuality education provided by higher education programs leaves young adults without the information they need to make safe and healthy lifestyle decisions once they arrive at college.

The lack of knowledge regarding sexually transmitted diseases among college students is a significant problem not only because this is the age group most at risk for acquiring an STD, but also because irreversible damage can be caused by sexually transmitted diseases if not treated immediately. Chlamydia and Gonorrhea are capable of causing pelvic inflammatory disease and fallopian tube infections, both of which are difficult to detect in the majority of cases. The permanent damage caused by scar tissue from pelvic inflammatory disease and other reproductive tract infections can ultimately lead to infertility if not treated early (Centers for Disease Control and Prevention, 2013b). Furthermore, the rates of sexually transmitted diseases among college-aged individuals in Mississippi are significantly higher than other regions of the country as Mississippi was recognized for being the fifth highest of the fifty states in diagnosed Chlamydia cases and

third highest of the fifty states in diagnosed Gonorrhea cases in 2015, which lends the University of Southern Mississippi college campus to be of particular interest for this study (Centers for Disease Control and Prevention, 2015).

Another reason this issue is significant is because not all sexually transmitted diseases can be treated. Sexually transmitted diseases fall into three categories. They are either classified as recurring, curable, or not curable (Stoskopf, 1999). Early detection and taking precautions once sexually active are two ways to prevent permanent damage; however, one must be educated on steps to take and specific preventative measure to abide by in order to successfully avoid the lifelong consequences of acquiring an STD. Preventative measures for women include regular pelvic exams and gynecological checkups, testing for HIV before having sexual intercourse with a new partner, asking sexual history of new partners, and using condoms during sexual activities (Stoskopf, 1999).

In addition to the type of sex education provided to college students prior to versus throughout their college experience, many research studies have found results supporting that college students often perceive to have more knowledge about sexually transmitted diseases than they actually do. One research study by Stoskopf in 1999 examined whether a student had received sex education since arriving at college, the student's perception of knowledge on the subject of sexually transmitted diseases, and the student's actual knowledge regarding basic information about sexually transmitted diseases. However, this is one of very few studies that analyze this topic and the study was conducted over 15 years ago at the University of Wisconsin. Other studies have researched the perception of knowledge compared to the actual knowledge concerning

sexually transmitted diseases as well as the provision of sex education in high school compared to current knowledge regarding sexually transmitted diseases, but very few have compared all three aspects. No studies have been found in Mississippi on the subject of knowledge among college students regarding sexually transmitted diseases. Considering that Mississippi has some of the highest rates of diagnosed STD cases in the nation, there appears to be a disconnect between sex education, perceived knowledge, and actual knowledge on the subject of sexually transmitted diseases, which can ultimately affect the students' reproductive health if safety measures are not taken while engaging in sexual intercourse.

The purpose of this study is to research the question: What are perceived and actual knowledge levels regarding sexually transmitted diseases among college students?

Chapter II: Literature Review

Education

One major key to prevention of sexually transmitted diseases among young adults is accurate and easily accessible sex education. However, many barriers exist regarding distribution of sexual health information to youth. This includes with whom the responsibility lies for teaching teenagers and young adults about sexual health and safe sex practices, as well as which approach is most appropriate to use when teaching youth about sexual intercourse.

One constant dispute faced by many communities in regard to sex education is whose responsibility it is to teach the youth about safe sex practices and sexually transmitted disease prevention. While students have credited many sources with providing adequate sex education prior to college, the most prevalent conflict is whether schools should provide sex education in their curriculum or if it is the family's obligation to provide their child with sexual health information. A study conducted by Wisnieski, Sieving, and Garwick (2015) in Oklahoma focused on the vital role parents play in reducing their child's risk for acquiring a sexually transmitted disease, as well as their role in promoting sexual health during adolescence. The study interviewed 28 women of African American, European, Latina, and American Indian descent ages 19 to 29 years old and explored early romantic decisions and the impact family input and communication had made on their sexual behavior and decisions (Wisnieski, Sieving, & Garwick, 2015). The study found that mothers were often the primary source of sexual information, followed by other close relatives of the same gender such as aunts and

grandmothers for females, and uncles, fathers, and grandfathers for males (Wisnieski et al., 2015).

Alternatively, even though most communities agree that parents have the primary responsibility for educating their children on the risks of unprotected sex and other factors contributing to sexual health, communities have also stressed the importance of implementing quality sex education programs in high schools to produce graduates that are well-informed on the dangers of unprotected sex and the repercussions of engaging in risky behaviors.

A study conducted by Synovitz, Hebert, Kelley and Carlson (2002), examined the adequacy of sex education programs provided to students prior to college in the South. They realized that sexuality education programs provided in high schools should reinforce the teachings provided by parents, so they created a survey that was distributed to 915 college students attending Louisiana universities that assessed the students' perceptions of provided sexual health information prior to college and then compared their perception ratings to the students' actual knowledge concerning sexually transmitted diseases and contraception (Synovitz, Hebert, Kelley, & Carlson, 2002). This study found that overall sexuality knowledge was lower in those who had not received sex education throughout their high school experience, which supports the importance of providing sex education in high school to expand on information provided by family figures (Synovitz et al., 2002). However, Synovitz et al. (2002) also found that while the students who had received sex education in high school did receive higher scores than those who did not attend a school that provided sex education in its curriculum, scores for those who had only received information on sexual health in high school alone were significantly lower

on the subject of sexually transmitted diseases than the scores of those who had received some variation of sexual education since attending college. This finding could be attributed to poor test-taking skills while taking the survey, misinformation, or inability to retain knowledge from years past (Synovitz et al., 2002).

Another theory for students' lack of actual knowledge regarding sexually transmitted diseases despite attending a high school that provided sexual education within their curriculum is the type of approach taken by the high school in teaching students about sexual health and safe sex practices. A study conducted by Weinstein, Walsh, and Ward (2008) used a questionnaire that examined which types of sex education messages are most effective in increasing student knowledge about sexual health. After passing the survey out to 347 undergraduate students ages 18 to 23, Weinstein et al. (2008) found that students who had received sex education covering mainstream reproductive health issues achieved higher knowledge scores than those students who had received abstinence-only sexual education prior to the survey.

In addition to the study conducted by Weinstein et al. (2008), a similar study conducted by Kirby (2007) evaluated over 100 different sex education programs in schools and other youth serving organizations across the United States and compared the programs that taught abstinence-only to those that took a more comprehensive approach. They found that programs teaching strict abstinence had little influence on sexual decisions, while programs that incorporated a more extensive approach, advocating for the use of condoms as well as abstinence resulted in delayed intercourse, reduced number of partners, and stimulated condom use among sexually active participants (Kirby, 2007). This study is important because it advocates for inclusion of both abstinence and

contraception, which confronts the rising rates of sexually transmitted diseases head-on and emphasizes that teaching promotion of abstinence and safe sex are compatible goals for sex education (Kirby, 2007).

Furthermore, a study by Walcott, Chenneville, and Tarquini (2011) also supports the implementation of a more comprehensive sex education program rather than focusing strictly on abstinence based on the knowledge scores acquired from their questionnaire. Their study surveyed 1,878 students attending colleges in the states of North Carolina and Florida and found that the highest scores for HIV knowledge belonged to the undergraduate students who reported having received comprehensive sex education in high school whereas those who had received abstinence-only sex education in high school scored significantly lower (Walcott, Chenneville, & Tarquini, 2011). This correlates with the CDC's statement that "HIV awareness and education should be universally integrated into all educational environments," which is in addition to their strong advocacy for abstinence being the only way to guarantee prevention of sexually transmitted diseases (Centers for Disease Control and Prevention, 2016d).

Despite research advocating for the effectiveness of a comprehensive approach in teaching sex education, there is still strong support for abstinence-only teaching. Howard-Barr, Moore, Weiss, and Jobli (2011) noted that out of the twenty-one states that require schools to teach sex education, only fifteen of those states include information on contraception. Although there is a variety of reasons to not include both contraception and abstinence teaching in high school sex education curriculum, one of the most common explanations schools use to support their decision to leave out contraception education is the misperception that the local community will not support contraception

teaching to their children and lead to controversy in the school system between parents and educators (Howard-Barr, Moore, Weiss, & Jobli, 2011). However, a study by Yarber, Milhausen, Crosby, and Torabi (2005) assessed the public's opinion in Indiana concerning condom related issues and found that the majority of participants strongly or somewhat approved of providing high school students with access to information on correct use of condoms and STD prevention.

Considering the heavily debated issue of whether to include sex education in high schools, which approach is most effective and appropriate, and that sex education, in general, can be a very touchy subject in the community, often this results in misinformed or uninformed students who continue to engage in sexually risky behaviors despite having been taught "sex education" in high school.

Knowledge

One of the main reasons for the current increase in sexually transmitted diseases among college students in the South is increased transmission as a result of risky and unsafe sexual behavior. Engagement in unsafe sexual behavior among this age group is often speculated to stem from lack of knowledge on the subject of sexually transmitted diseases.

Jones and Haynes (2006) created a survey that used true and false questions to assess students' basic knowledge about some of the most common sexually transmitted diseases. The study found that less than half of the students realized that a person could acquire an STD from intimate body contact with an infected person without having sexual intercourse (Jones & Haynes, 2006). Another study by Weinstein, Walsh, and Ward (2008) used a sample of 347 college students ranging in age from 18 to 23 and

found that the majority of college students displayed a lack of knowledge and understanding of sexual health issues, indicated by the low percent of correctly answered questions in the knowledge section of their survey. They also found that women appeared to be more knowledgeable than men, especially involving the subjects of contraception and STDs (Weinstein, Walsh, & Ward, 2008).

One explanation for this lack of knowledge is the misconception of having been given a comprehensive high school sex education that provided sufficient information about sexual health in addition to an attitude of indifference regarding the additional acquisition of updated information about STDs (Stoskopf, 1999). However, studies such as that conducted by Synovitz et al. (2002) portray an inverse relationship between students' perceptions of the quality of their prior sex education and their actual knowledge about STDs. Synovitz et al. (2002) found that the higher each student ranked the quality of their previous sex education, the lower their test results were for the survey. The sample in the study conducted by Synovitz was chosen systematically from four Louisiana universities, and the study surveyed fairly equal numbers of each gender, age, and race (Synovitz et al., 2002). The variables included perception of previous sex education and actual knowledge about sexuality-related topics (Synovitz et al., 2002). The instrumentation included a survey containing 27 multiple-choice knowledge-based questions on sexuality, 5 demographic questions, 4 questions determining if the student had received sex education before college, and 15 questions asking about the student's perception of the quality of previous sex education on a scale from 1 to 5 (Synovitz et al., 2002). The overall mean score of sexual knowledge was 55.39% (Synovitz et al., 2002).

A study by Stoskopf (1999) focused on actual knowledge versus perceived knowledge regarding sexually transmitted diseases among college students. Stoskopf (1999) created a survey consisting of four different sections including: demographics, attitudes about previous sex education and STDs, which was assessed using a Likert scale, likelihood that the student would go to a specified source for accurate information regarding STDs, which also used a Likert scale for evaluation, and a list of 21 true or false statements to test to the students' actual knowledge regarding sexually transmitted diseases. Participants included 103 college students currently attending the University of Wisconsin-Stout (Stoskopf, 1999). Stoskopf (1999) found that even though students indicated that teaching sex education in high school has the potential to encourage sex at a young age, they still believe it should be included in the curriculum. The participants also indicated that parents have a responsibility to teach their children about STDs (Stoskopf, 1999). In response to the most probable outlet sought for accurate sex information, the participants chose their friends as the most common source for information, followed by healthcare personnel, mothers, and books (Stoskopf, 1999). Out of 21 questions, the answers ranged from 10 to 20 correct choices (Stoskopf, 1999). Overall, Stoskopf (1999) found that the students believed they had more knowledge on the subject of STDs than the results from the survey indicated.

Students' tendency to overestimate their knowledge about STDs can be attributed to the variance in their sources of information. Most students search for information regarding sexually transmitted diseases from the Internet or their peers, both of which may be unreliable (Stoskopf, 1999). Furthermore, students often think their risk for contracting a sexually transmitted disease is low despite STD rates being higher than ever

for their age group (Stoskopf, 1999). Jones and Haynes (2006) found that students who were more aware of issues involving STDs were less likely to practice safer sex than those who had achieved lower knowledge scores on their questionnaire. Risky behavior has only increased with knowledge, which is supported by Weinstein, Walsh, and Ward (2008) who found that greater global knowledge involving STDs is correlated with less consistent condom use.

Behaviors

The number of college students who are deciding to engage in sexual intercourse before marriage is on the rise. Behaviors associated with increased risk for contracting a sexually transmitted disease include indiscriminate recruitment of partners, age at first intercourse, the frequency of sexual activity, increased experimentation with drugs and alcohol, and negligent condom use (Stoskopf, 1999). In their study of 996 participants from various university settings, Tung, Cook, and Lu (2011) found that the toughest situations to adhere to condom use are when alcohol and drugs are involved, a student's partner would rather forego condom use for increased pleasure, and the perception that the risk of acquiring an STD in the given situation is relatively low.

Negligent condom use among college students is an alarming trend that could contribute to the rising rates of STDs. In a study by Hickey and Cleland (2013) an online survey was distributed to 458 female college students ages 18 to 24. They found that while 81% of participants were sexually active, with over 75% of participants engaging in vaginal intercourse at least four times per week, condoms were only used by 57% of participants (Hickey & Cleland, 2013). They concluded that most females did not consider themselves at risk for acquiring an STD, despite inconsistent condom use

(Hickey & Cleland, 2013). Tung, Cook, and Lu (2011) found that of the participants from their study who were sexually active, only 31.4% reported the use of condoms consistently.

While condom use may seem like a simple solution for such a life-altering consequence, students continue to engage in risky behavior despite sex education in high schools and universities advocating against unprotected sex. King, Vidourek, and Singh (2014) noted that the three most common barriers to using condoms were embarrassment to be seen purchasing them, impaired judgment during intercourse related to alcohol consumption before the encounter, and feeling condoms reduced pleasure.

Although many research studies have identified the shortcomings in sex education programs and behaviors that place students at increased risk for contracting an STD, the continuous rise in STD rates across the country indicates there is a need for better education regarding sexual health. Despite having some of the highest rates of diagnosed STD cases among college students in the nation, very little research has been conducted at college universities in the state of Mississippi. My study will attempt to identify gaps in the sexual knowledge of college students in a southern state with a high prevalence of sexually transmitted diseases.

Chapter III: Methodology

Sample

The sample for this study included respondents who are currently enrolled as undergraduate students at the University of Southern Mississippi's Hattiesburg campus. The participants were required to be 18 years or older and able to read the English language. The sample consisted of both males and females. The convenience sample attempted to represent the student population at the University of Southern Mississippi, including fairly equal numbers of Caucasian and African American participants. The sample also included responses from the Hispanic, Asian, and Native American populations. The ideal size for the sample was estimated to be between 60 and 100 participants.

Once Institutional Review Board approval was granted, the participants were contacted using the USM Mailout and Honors College listservs. This system enabled contact with as many different populations of current undergraduate University of Southern Mississippi students as possible by using student email addresses. Students from the College of Nursing at the University of Southern Mississippi were also contacted via Facebook to participate in the study. The survey was made available through an email link to Qualtrics. The survey remained open for one month from November 9, 2017 to December 9, 2017, at which time the survey was closed to further participants and survey responses were collected to be analyzed.

Variables

This study examined the attitudes that college students have toward sex education and sexually transmitted diseases as well as the actual knowledge among college students

regarding sexually transmitted diseases. Attitudes were assessed by having the students rate how strongly they agree or disagree with certain statements made about sexual practices and previous sex education. Student knowledge was assessed by having the students answer true or false statements about the acquisition, transmission, and potential consequences of sexually transmitted diseases. Demographics were also factored into the data analysis, including age, gender, race, religion, college to which the student belongs, geographical location of the student's high school, attendance at a private versus public high school, family dynamics, and previous sex education.

Data

Data was collected on a Likert scale with responses ranked 1 through 5 for twenty statements assessing the attitudes of college students toward sex education and sexually transmitted diseases as well as true or false responses for twenty statements that assessed the knowledge of college students pertaining to sexually transmitted diseases. The data for demographics was in the form of select all that apply, numerical values, and yes or no questions.

Instruments and Procedures

The study was executed using a survey adapted from an original survey created by Angie Stoskopf (1999), a graduate student from the University of Wisconsin-Stout in Menomonie, Wisconsin. Stoskopf developed her survey in 1999 to be used in her research study titled, "College Students Knowledge of Sexually Transmitted Diseases." Her original survey contains four sections: demographics, attitudes, information regarding whom the student would turn to for accurate information about sexually transmitted diseases, and knowledge. My study uses an adapted version of Stoskopf's

instrument, incorporating three out of four of the sections from her original survey including: demographics, attitudes, and knowledge. Section III is omitted from Stoskopf's survey, which assesses whom the student would turn to for accurate information about sexually transmitted diseases. The knowledge section of my survey includes updated statements about the acquisition, transmission, and potential consequences of sexually transmitted diseases. The statements included in the knowledge section of my survey were updated by my advisor and myself primarily using information gathered from the CDC website and *The Sexually Transmitted Disease Knowledge Questionnaire* by Jaworski and Carey (2007).

The updated survey was distributed to undergraduate students attending the University of Southern Mississippi Hattiesburg campus using two email listservs. The survey used in my study includes three sections titled: demographics, attitudes, and knowledge. The first section included twelve questions on demographic information, including age, gender, race, religion, college to which the student belongs, geographical location of the student's high school, attendance at a private versus public high school, family dynamics, and previous sex education. The second section included 20 statements regarding attitudes toward sex education and sexually transmitted diseases where the student is asked to rank how strongly they agree or disagree with each statement by choosing a number 1 to 5 using a Likert scale, where the number 1 indicated the student strongly disagrees and the number 5 indicated the student strongly agrees. This section also examined the students' perceptions regarding the quality of their previous sex education and how much knowledge the students think they have regarding sexually transmitted diseases. The third and final section of the survey included 20 true or false

statements about the acquisition, transmission, and potential consequences of sexually transmitted diseases, where the students were expected to select either T, F, or DK indicating true, false, or don't know respectively. The survey included a cover letter indicating the voluntary nature of the survey as well as a statement of confidentiality that guarantees the privacy of their responses. The cover letter and survey can be found in Appendix A and Appendix B, respectively. The University of Southern Mississippi Institutional Review Board (IRB) approved this study. A copy of the IRB approval letter is included in Appendix C. After IRB approval was granted, emails were sent to USM students using the USM Mailout and Honors College listservs where a short paragraph explained the study and a link was included to access the survey. A link to the survey was also posted on Facebook for nursing students attending the University of Southern Mississippi. Consent was assumed with completion and subsequent submission of the survey in the Qualtrics database.

Data Analysis

After the responses from the survey were gathered, data correlated with each question was tabulated and analyzed using the Qualtrics system. The data from section I was analyzed using means and percentages. In section II and section III, averages were calculated for each question and compared using a data table. After analyzing each individual section, results were compared from the perceived and actual knowledge sections to the demographic variables noted in section I. Conclusions were drawn based on whether the student had received a formal sex education course in high school or since attending college.

Chapter 4: Results

Demographics

The survey to determine the knowledge of sexually transmitted diseases among college students was emailed to the entire undergraduate student population at the University of Southern Mississippi using the USM Mailout listserv. The online survey received 138 total responses, comprised of 19 males and 119 females. All of the correspondents were 18 years of age or older. Age distribution included 23 18-year-olds, 12 19-year-olds, 15 20-year-olds, 44 21-year-olds, 17 22-year-olds, and 27 participants over the age of 23. Of the participants, 15.22% were African American, 1.45% were Asian American, 72.46% were Caucasian American, and 5.80% were Hispanic American. The majority of respondents were Christian (76.09%) followed by 17.39% stating they have no religious affiliation. Students from numerous colleges on campus participated in the study including 28 from the College of Arts and Letters, 10 from the College of Business, 16 from the College of Education and Psychology, 15 from the College of Health, 34 from the College of Nursing, and 31 from the College of Science and Technology.

In regard to high school demographics, 30.43% of the students were from an urban area, 44.20% attended high school in the suburbs, and the remaining 25.36% attended high school in a rural area. The majority of students (74.64%) attended a public school, whereas only a quarter of the participants (25.36%) attended a private school.

Family demographics include 62.32% of participants living with both natural parents, 18.84% living with parents who are remarried, and 17.39% coming from a single parent home. There was a fairly equal distribution of youngest, oldest, and middle child

responses with only 10 respondents answering that he or she was an only child. Sibling distribution varied, with the majority of participants having 1 or 2 siblings, at 28.26% and 37.68% respectively.

As for sex education in college, only 14.49% of participants have taken a course in human sexuality. In contrast, close to half of participants (45.65%) confirm they have had at least one lecture on sexually transmitted diseases as part of their curriculum in a particular course.

Table 1. Demographic Data

Demographic	Categories	Student Response (%)
Age	18	16.67%
	19	8.70%
	20	10.87%
	21	31.88%
	22	12.32%
	23+	19.57%
Gender	Male	13.77%
	Female	86.23%
Race	African American	15.22%
	Asian American	1.45%
	Caucasian American	72.46%
	Hispanic American	5.80%
	Native American	0.72%
	Other	4.35%
Religion	No religion	17.39%
	Christian	76.09%
	Buddhist	0.00%
	Hindu	0.00%
	Jewish	0.00%
	Muslim	2.17%
	Other	4.35%
College	Arts and Letters	20.29%
	Business	7.25%
	Education and Psychology	11.59%

	Health	10.87%
	Nursing	24.64%
	Science and Technology	22.46%
	Other	2.90%
High School Location	City	30.43%
	Suburb	44.20%
	Rural	25.36%
Education Type	Public	74.64%
	Private	25.36%
	Home-schooled	0.00%
Family Structure	Single parent	17.39%
	Remarried	18.84%
	Both natural parents	62.32%
	Other	1.45%
Birth Order	Only child	7.25%
	Youngest	33.33%
	Middle	28.99%
	Oldest	30.43%
Number of Siblings	0	7.25%
	1	28.26%
	2	37.68%
	3	13.77%
	4+	13.77%
College Course	Yes	14.49%
	No	85.51%
College Lecture on STDs	Yes	45.65%
	No	54.35%

Attitudes

The second section of the survey inquired about students' attitudes toward sex education and sexually transmitted diseases. When asked whether the participants believed that teaching sex education in school encourages teens to have sex 44.88% strongly disagreed, 33.07% somewhat disagreed, 12.60% were neutral, 8.66% somewhat agreed, and only 0.79% strongly agreed. When asked if they feel that it is a parent's

responsibility to teach their children about sex 2.36% of students strongly disagreed, 7.87% somewhat disagreed, 11.81% were neutral, 42.52% somewhat agreed, and 35.43% strongly agreed. The students were strongly in favor of sex education being taught in school with 63.78% strongly agreeing, 25.98% somewhat agreeing, 4.72% remaining neutral, 3.94% somewhat disagreeing, and only 1.57% strongly disagreeing. Regarding whether students learned a lot about sexually transmitted diseases from sex education in high school, 11.02% strongly agreed that they did, 24.41% somewhat agreed, 8.66% were neutral, 18.90% somewhat disagreed, and 37.01% strongly disagreed with the statement. Similarly, when asked whether they think adolescents need more sex education, 56.69% of the students strongly agreed, 33.07% somewhat agreed, 7.09% were neutral, 1.57% somewhat disagreed, and 1.57% strongly disagreed. When the students were asked whether they believed their high school gave them an adequate sex education, 36.22% strongly disagreed, 22.83% somewhat disagreed, 7.87% neither agreed or disagreed, 22.83% somewhat agreed, and 10.24% strongly agreed. As for family interactions when it comes to talking with each other about sex, 40.16% strongly disagreed that it is easy to ask their parents about sex, 20.47% somewhat disagreed, 10.24% were neutral, 15.75% somewhat agreed, and only 13.39% believed it is easy to talk with parents about sex. When asked whether the students' parents have talked to them about sex and its implications, 21.26% strongly disagreed, 22.83% somewhat disagreed, 7.87% neither agreed or disagreed, 25.98% somewhat agreed, and 22.05% strongly agreed.

Obtaining information about sexually transmitted diseases and other sex related topics is important to gather from a reliable source. When the students were asked whether they knew where to go in order to obtain accurate information about sex related

issues 40.16% strongly agreed, 37.80% somewhat agreed, 5.51% neither agreed or disagreed, 11.02% somewhat disagreed, and 5.51% strongly disagreed. One common source of information for adolescents is their peers. So the questionnaire asked the students whether they believed their friends were knowledgeable about the biological aspects of sex, 27.56% strongly agreed, 41.73% somewhat agreed, 20.47% neither agreed or disagreed, 7.87% somewhat disagreed, and 2.36% strongly disagreed. Religion is another major influence on how sex is viewed growing up. When the students were asked if religious beliefs play a role in their views about premarital sex, 21.26% strongly disagreed, 7.09% somewhat disagreed, 14.17% were neutral, 21.26% somewhat agreed, and 36.22% strongly agreed. Furthermore, when the students were asked whether they planned on waiting until marriage to have sex 47.24% strongly disagreed, 10.24% somewhat disagreed, 18.90% were neutral, 4.72% somewhat agreed, and 18.90% strongly agreed. In response to whether the students are embarrassed to talk about sex, 36.22% strongly disagreed, 33.07% somewhat disagreed, 12.60% neither agreed or disagreed, 14.96% somewhat agreed, and 3.15% strongly agreed.

One of the goals for this study is to compare perceived versus actual knowledge about sexually transmitted diseases among college students. To gauge perceived knowledge the students were asked whether they thought that they were knowledgeable about sexually transmitted diseases 40.16% strongly agreed, 42.52% somewhat agreed, 4.72% remained neutral, 11.02% somewhat disagreed, and only 1.57% strongly disagreed. When asked whether they believe they have received enough information about sex to make healthy decisions 51.97% strongly agreed, 37.80% somewhat agreed, 2.36% neither agreed or disagreed, 4.72% somewhat disagreed, and 3.15% strongly

disagreed. The students were also asked whether they thought most teenagers are well informed about sexually transmitted diseases, to which 46.46% strongly disagreed, 38.58% somewhat disagreed, 6.30% were neutral, 7.87% somewhat agreed, and only 0.79% strongly agreed. When the students were asked whether they think they should have more knowledge about the many aspects of sex, 10.24% strongly disagreed, 15.75% somewhat disagreed, 19.69% were neutral, 38.58% somewhat agreed, and 15.75% strongly agreed.

Another important aspect of being knowledgeable about sex related issues is the provision and continuation of sex education in high school and college. The students were asked whether they would take a course about sex education in college if it were available, 16.54% strongly disagreed, 18.90% somewhat disagreed, 33.86% were neutral, 19.69% somewhat agreed, and only 11.02% of students in the survey strongly agreed that they would take a course on sex education if it were provided to them. The students were also asked whether they wished they had received more information about sex sooner in life, 11.02% strongly disagreed, 11.81% somewhat disagreed, 21.26% neither agreed or disagreed, 28.35% somewhat agreed, and 27.56% strongly agreed. Finally, when the students were asked whether they would attend a free class about sex if it were offered in the community only 7.87% strongly agreed that they would attend, 22.83% somewhat agreed, 23.62% were neutral, 25.98% somewhat disagreed, and 19.69% strongly disagreed.

Table 2. Attitudes Data

Statement	Strongly Disagree	Somewhat Disagree	Neither Agree or Disagree	Somewhat Agree	Strongly Agree

Teaching sex education in school encourages teens to have sex.	44.88%	33.07%	12.60%	8.66%	0.79%
I feel it is a parent's responsibility to teach their children about sex.	2.36%	7.87%	11.81%	42.52%	35.43%
I believe sex education should be taught in schools.	1.57%	3.94%	4.72%	25.98%	63.78%
My high school gave me an adequate sex education.	36.22%	22.83%	7.87%	22.83%	10.24%
I think adolescents need more sex education.	1.57%	1.57%	7.09%	33.07%	56.69%
It is easy for me to ask my parents about sex.	40.16%	20.47%	10.24%	15.75%	13.39%
I learned a lot about sexually transmitted diseases from sex education in high school.	37.01%	18.90%	8.66%	24.41%	11.02%
I know where I can go to get accurate information about sex related issues.	5.51%	11.02%	5.51%	37.80%	40.16%
My friends are knowledgeable about the biological aspects of sex.	2.36%	7.87%	20.47%	41.73%	27.56%
My religious beliefs play a role in my views about premarital sex.	21.26%	7.09%	14.17%	21.26%	36.22%
I am embarrassed to talk about sex.	36.22%	33.07%	12.60%	14.96%	3.15%
I think I have received enough information about sex to make healthy decisions.	3.15%	4.72%	2.36%	37.80%	51.97%
I am knowledgeable about sexually transmitted diseases.	1.57%	11.02%	4.72%	42.52%	40.16%
I wish I had received more information about sex sooner in life.	11.02%	11.81%	21.26%	28.35%	27.56%

I plan on waiting until I am married to have sex.	47.24%	10.24%	18.90%	4.72%	18.90%
I would take a course about sex education in college if one were available.	16.54%	18.90%	33.86%	19.69%	11.02%
Most teenagers are well informed about sexually transmitted diseases.	46.46%	38.58%	6.30%	7.87%	0.79%
If a free class about sex were offered in my community I would attend.	19.69%	25.98%	23.62%	22.83%	7.87%
I think I should have more knowledge about the many aspects of sex.	10.24%	15.75%	19.69%	38.58%	15.75%
My parents have talked to me about sex and its implications.	21.26%	22.83%	7.87%	25.98%	22.05%

Knowledge

The third and final section of the survey inquired about student knowledge concerning sexually transmitted diseases in the form of true or false questions. Only 32.79% of participants correctly identified that women are less likely than men to have symptoms of common STDs such as Chlamydia and Gonorrhea. In contrast, 76.23% of student participants correctly identified false for the statement that people who have had a sexually transmitted disease such as Chlamydia or Gonorrhea are immune to getting that type of sexually transmitted disease again. Of the participants, 54.10% correctly chose false for the statement that Genital Herpes is caused by the same virus as HIV. Furthermore, most of the students (83.61%) identified that cold sores and fever blisters are symptoms of herpes. The overwhelming majority of students (90.16%) knew that a person could have more than one type of STD at a time.

Pertaining to disease transmission, 77.05% of participants identified false for the possibility of contracting Gonorrhea and Syphilis by using dirty toilet seats in public bathrooms. In the study, 64.75% of students knew that washing one's genitals after sexual intercourse cannot prevent sexually transmitted diseases from occurring. Furthermore, 69.67% of students also knew that a person with a cold sore on the mouth could give his or her partner Genital Herpes during oral-genital contact. Additionally, 64.75% of students knew that a person with Genital Herpes is still contagious between active attacks. However, only 36.89% of participants realized if neither person has ever had a sexually transmitted disease, a monogamous couple could engage in oral-genital or anal sex without fear of getting AIDS. To further assess the knowledge of college students on STD transmission, they were given the statement that a woman with Genital Herpes can pass the infection to her baby during childbirth, to which 82.79% of participants correctly identified true.

When it comes to the treatment of STDs, it is very important to get treated early in order to prevent future complications. In response to the statement that Chlamydia and Gonorrhea can cause pelvic inflammatory disease and infertility if left untreated, 87.70% of students correctly identified true, while only 0.82% chose false. Additionally, 59.84% of students know there is a cure for Gonorrhea and Chlamydia. The majority of students (76.23%) knew that a person diagnosed with Gonorrhea could not assume it was safe to resume sexual activity until the treatment was completed. Of the participants, 86.89% correctly identified false for the statement that a person who has recently been sexually active and who has no symptoms does not have to worry about Gonorrhea or Chlamydia. Many times, women are asymptomatic with both Gonorrhea and Chlamydia (Centers for

Disease Control and Prevention, 2016b). When given the statement that most women do not show any symptoms in the early stages of Gonorrhea or Chlamydia, 63.11% chose true and 13.93% incorrectly chose false.

Prevention is one of the key areas of focus in decreasing the incidence of sexually transmitted diseases. In the study, 40.16% of students incorrectly believe that latex condoms eliminate the risk of acquiring sexually transmitted diseases. Annual Pap smears are great for early detection of cervical cancer, which is mainly caused by the herpes simplex virus. This statement was correctly identified as true by 74.59% of students in the survey. Identifying men and women who are most at risk can help in the prevention and spread of STDs among our most vulnerable populations. In the study, 72.95% correctly chose true for the statement that young African American gay and bisexual men are most affected by HIV. Finally, 61.48% of students realize that STDs are actually on the rise in the United States, indicating the need for further education and study on the issue.

Table 3. Knowledge Data

Statement	True	False	Don't Know	Correct Answer
Women are less likely to have symptoms of common STDs such as Chlamydia and Gonorrhea compared to men.	32.79%	49.18%	18.03%	True
People who have had a sexually transmitted disease such as Chlamydia or Gonorrhea are immune to getting that type of sexually transmitted disease again.	11.48%	76.23%	12.30%	False
Many cases of Gonorrhea and Syphilis are contracted by people using dirty toilet seats in public bathrooms.	6.56%	77.05%	16.39%	False

Genital Herpes is caused by the same virus as HIV.	24.59%	54.10%	21.31%	False
Chlamydia and Gonorrhea can cause pelvic inflammatory disease and infertility if left untreated.	87.70%	0.82%	11.48%	True
There is a cure for Gonorrhea and Chlamydia.	59.84%	23.77%	16.39%	True
A person with a cold sore on the mouth can give his or her partner Genital Herpes during oral-genital contact.	69.97%	13.11%	17.21%	True
If neither person has ever had a sexually transmitted disease, a monogamous couple can engage in oral-genital or anal sex without fear of getting AIDS.	36.89%	47.54%	15.57%	True
A person with Genital Herpes is generally not contagious between active attacks.	16.39%	64.75%	18.85%	False
A person diagnosed with Gonorrhea can assume that it is safe to resume sexual activity after beginning treatment.	9.02%	76.23%	14.75%	False
A person who has recently been sexually active and who has no symptoms does not have to worry about Gonorrhea or Chlamydia.	5.74%	86.89%	7.38%	False
Most women do not show symptoms in the early stages of Gonorrhea or Chlamydia.	63.11%	13.93%	22.95%	True
A person can only have one type of sexually transmitted disease at a time.	1.64%	90.16%	8.20%	False
A woman with Genital Herpes can pass the infection to her baby during childbirth.	82.79%	4.92%	12.30%	True
Cold sores and fever blisters are symptoms of herpes.	83.61%	8.20%	8.20%	True
Latex condoms eliminate the risk of acquiring sexually transmitted diseases.	40.16%	54.92%	4.92%	False
Because of penicillin and other drugs, sexually transmitted diseases are on the decline in the United States.	19.67%	61.48%	18.85%	False

HPV is the main cause of cervical cancer in women.	74.59%	6.56%	18.85%	True
Young African American gay and bisexual men are most affected by HIV.	72.95%	9.84%	17.21%	True
Washing your genitals after sexual intercourse can prevent sexually transmitted diseases.	19.67%	64.75%	15.57%	False

Chapter 5: Discussion

The purpose of this study aimed to address the perceived and actual knowledge levels among college students at a southern university on the issue of sexually transmitted diseases. Overall, the findings in the study explored the students' perceptions regarding the quality of their previous sex education and how much knowledge the students think they have on the topic of sexually transmitted diseases. Furthermore, the students' actual knowledge on the issue was assessed using true or false questions focusing on the acquisition, transmission, and potential consequences of sexually transmitted diseases. By focusing on the gaps in perceived and actual knowledge among college students, areas of weakness can be identified, and information can be provided to the subgroup of the population most at risk for acquiring sexually transmitted diseases. Accurate and comprehensive knowledge promotes healthy decision-making among college students who engage in sexual activity.

The research revealed 82.66% of students either somewhat or strongly agreed that they are knowledgeable about sexually transmitted diseases. Likewise, 89.77% of students somewhat or strongly agreed that they have received enough information about sex to make healthy decisions. However, despite confidence in their current knowledge on the topic of sexually transmitted diseases, only 33.07% of students agreed their high school gave them an adequate sex education.

In contrast to the study performed by Stoskopf (1999) who found that the majority of students indicated teaching sex education in high school has the potential to encourage sex at a young age, the researcher in the current study found that only 9.45% of the students surveyed believe that teaching sex education in high school encourages teens to

have sex. However, similar to Stoskopf (1999) the students in the current study believed that sex education should be taught in schools, with only 5.51% of participants disagreeing with this statement. Whereas former studies were conflicting in responses, the current study produced more cohesive responses in relation to the importance of providing sex education in high school to promote healthy decision making among students.

Another notable finding in the study is the gap between the students believing they did not receive an adequate sex education in high school but agreeing that they are knowledgeable on the topic of sexually transmitted diseases today. Demographic data shows that 14.49% of students in the study have taken a course in human sexuality while in college and 45.65% of the students have had a lecture on sexually transmitted diseases in one of their college courses. Additionally, 57.97% of the participants are from the College of Nursing, College of Health, or College of Science and Technology. All of these factors could contribute to the high level of perceived knowledge on the topic of sexually transmitted diseases despite inadequate sex education acquired in high school. Communication with peers is another explanation for the source of knowledge acquisition concerning sexually transmitted diseases. Only 10.23% of participants disagree that their friends are knowledgeable about the biological aspects of sex. These findings strongly correlate with the findings of Stoskopf (1999) who found that the most common place for students to turn for accurate information about sexually transmitted diseases were friends.

To assess whether the knowledge the students perceive they have is accurate, the results from the true or false questions were analyzed. The researcher found that almost

half of the students surveyed believe that condoms completely eliminate the risk of acquiring an STD. The findings also show that 30% of the respondents do not know that Genital Herpes can be transmitted during oral-genital contact with a person who has a cold sore, despite 83.61% of participants knowing that cold sores and fever blisters are signs of herpes. Other misconceptions about the transmission of sexually transmitted diseases also exist, such that only 64.75% of participants know that sexually transmitted diseases cannot be prevented by washing the genitals after sexual contact. Other questions were correctly answered by over 80% of participants including the transmission of genital herpes during childbirth, increased risk for infertility and pelvic inflammatory disease if treatment is delayed, the asymptomatic nature of Chlamydia and Gonorrhea, and that a person can have more than one STD at a time.

Overall, the students had adequate knowledge on the potential complications of sexually transmitted diseases and the need for immediate treatment, but could use more education on the acquisition, transmission, and prevention of sexually transmitted diseases between partners. The discrepancy between perceived and actual knowledge levels is less significant than previous studies, however, the need for further education is still crucial and the knowledge deficit in this age group needs to be addressed. While 89.77% of students in the survey agree they have enough information about STDs to make healthy decisions, only 5 questions were answered correctly by over 80% of respondents. It is essential that high school and college students understand how STDs are acquired and transmitted, as well as the importance of treating them as quickly as possible to prevent permanent biological damage.

Limitations

One limitation present in this study is the use of a convenience sample that may not accurately represent the demographics of the University of Southern Mississippi accurately. For example, 72.46% of respondents were Caucasian, 86.23% of the respondents were female, and 76.09% of the respondents self-identified as Christian. Another limitation for this study is the low number of participants. Although the number of participants surpassed my initial goal, a group of 138 students is a small percentage of the total population of 14,554 students enrolled at the University of Southern Mississippi. A third limitation that could alter the results of the knowledge portion of the survey is the number of participants from the College of Nursing and College of Science and Technology compared to the number of participants from the College of Business and College of Education and Psychology. The results in the knowledge portion of the survey could have been impacted by those who have recently attended a lecture on sexually transmitted diseases compared to students from majors that do not emphasize science. Finally, the statements in the true or false section of the survey were chosen by the student researcher and could be an insufficient indicator of comprehensive knowledge on the subject of sexually transmitted diseases.

Further Areas of Study

In this study, the researcher found there was a significant discrepancy between perceived knowledge and inadequate sex education prior to college. Further study could focus on where the students are acquiring accurate knowledge. Technology is present in every aspect of a student's life, so it would be important to focus on particular sources

that are reliable for the students to access for accurate information such as the Centers for Disease Control and Prevention.

Previous studies focused on the type of sex education the students received in high school. While the current study did not focus on this aspect of sex education, the results indicated the need for better education than that which is currently provided. Further study could focus on the type of sex education that is currently provided, which is not viewed as adequate and the type of sex education, whether abstinence-based or comprehensive, that the students would be most open and receptive to learning.

Since knowledge on the acquisition, transmission, and prevention of sexually transmitted diseases is insufficient, types of prevention methods such as birth control and proper condom use should be emphasized in future studies. Since the rates of transmission continue to increase among the young adult population in the South, it is essential to continue research on the discrepancies and misconceptions that exist among this vulnerable population.

References

American Academy of Pediatrics. (2017). Cold Sores in Children: About the Herpes Simplex Virus. Retrieved from https://www.healthychildren.org/English/health-issues/conditions/skin/Pages/Herpes-Simplex-Virus-Cold-Sores.aspx

Centers for Disease Control and Prevention. (2011). CDC FACT SHEET: 10 Ways STDs Impact Women Differently from Men. Retrieved from https://www.cdc.gov/std/health-disparities/stds-women-042011.pdf

Centers for Disease Control and Prevention. (2013a). Condom Fact Sheet in Brief. Retrieved from https://www.cdc.gov/condomeffectiveness/brief.html

Centers for Disease Control and Prevention. (2013b). STDs & Infertility. Retrieved from https://www.cdc.gov/std/infertility/

Centers for Disease Control and Prevention. (2014). Chlamydia: CDC Fact Sheet. Retrieved from https://www.cdc.gov/std/chlamydia/stdfact-chlamydia.htm

Centers for Disease Control and Prevention. (2015). Mississippi 2015 State Health Profile. Retrieved from https://www.cdc.gov/nchhstp/stateprofiles/pdf/mississippi_profile.pdf

Centers for Disease Control and Prevention. (2016a). CDC FACT SHEET: Reported STDs in the United States. Retrieved from https://www.cdc.gov/nchhstp/newsroom/docs/factsheets/std-trends-508.pdf

Centers for Disease Control and Prevention. (2016b). Gonorrhea: CDC Fact Sheet. Retrieved from https://www.cdc.gov/std/gonorrhea/stdfact-gonorrhea-detailed.htm

Centers for Disease Control and Prevention. (2016c). Reported STDs at Unprecedented High in the U.S. Retrieved from https://www.cdc.gov/nchhstp/newsroom/2016/std-surveillance-report-2015-press-release.html

Centers for Disease Control and Prevention. (2016d). Sexual Risk Behaviors: HIV, STD, & Teen Pregnancy Prevention. Retrieved from https://www.cdc.gov/healthyyouth/ sexualbehaviors/

Centers for Disease Control and Prevention. (2017). Genital Herpes: CDC Fact Sheet. Retrieved from https://www.cdc.gov/std/herpes/stdfact-herpes-detailed.htm

Center for Young Women's Health. (2017). Sexually Transmitted Infections (STIs): General Information. Retrieved from http://youngwomenshealth.org/2013/01/16/sti-information/

Hickey, M. T., & Cleland, C. (2013). Sexually transmitted infection risk perception among female college students. *Journal Of The American Association Of Nurse Practitioners*, *25*(7), 377-384. doi:10.1111/j.1745-7599.2012.00791.x

HIV.gov. (2017). U.S. Statistics: Fast Facts. Retrieved from https://www.hiv.gov/hiv-basics/overview/data-and-trends/statistics

Howard-Barr, E., Moore, M. J., Weiss, J. A., & Jobli, E. (2011). Public Opinion Toward Sexuality Education: Findings Among One South Florida County. *American Journal Of Sexuality Education*, *6*(2), 176-191. doi:10.1080/15546128.2011.571955

Jaworski, B. C., & Carey, M. P. (2007). Development and Psychometric Evaluation of a Self-administered Questionnaire to Measure Knowledge of Sexually Transmitted Diseases. AIDS and Behavior, 11, 557-574.

Jones, N. R., & Haynes, R. (2006). The association between young people's knowledge of sexually transmitted diseases and their behaviour: A mixed methods study. *Health, Risk & Society, 8*(3), 293-303. doi:10.1080/13698570600871851

King, K., Vidourek, R., & Singh, A. (2014). Condoms, Sex, and Sexually Transmitted Diseases: Exploring Sexual Health Issues Among Asian-Indian College Students. *Sexuality & Culture*, *18*(3), 649-663. doi:10.1007/s12119-013-9214-1

Kirby, D. (2007). Abstinence, Sex, and STD/HIV Education Programs for Teens: Their Impact on Sexual Behavior, Pregnancy, and Sexually Transmitted Disease. *Annual Review Of Sex Research*, *18*(1), 143-177.

Missouri Department of Health & Senior Services. (n.d.). Chlamydia. Retrieved from http://health.mo.gov/living/healthcondiseases/communicable/stds/chlamydia.php

Steinmetz, K. (2013). (No) condom culture: Why teens aren't practicing safe sex. Retrieved from http://healthland.time.com/2013/11/12/no-condom-culture-why-teens-arent-practicing-safe-sex/

Stoskopf, A.L. (1999). College students knowledge of sexually transmitted diseases. Retrieved from citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.391.598&rep1&type=pdf

Synovitz, R. L., Hebert, E., Kelley, R. M., & Carlson, G. (2002). Sexual knowledge of college students in a southern state: Relationship to sexuality education. *American Journal Of Health Studies*, *17*(4), 163.

Tung, W., Cook, D. M., & Lu, M. (2011). Sexual behavior, stages of condom use, and self-efficacy among college students in Taiwan. *AIDS Care*, *23*(1), 113-120. doi:10.1080/09540121.2010.498863

Walcott, C. M., Chenneville, T., & Tarquini, S. (2011). Relationship between recall of sex education and college students' sexual attitudes and behavior. *Psychology In The Schools*, *48*(8), 828-842. doi:10.1002/pits.20592

Weinstein, R. B., Walsh, J. L., & Ward, L. M. (2008). Testing a New Measure of Sexual Health Knowledge and Its Connections to Students' Sex Education, Communication, Confidence, and Condom Use. *International Journal Of Sexual Health*, *20*(3), 212-221. doi:10.1080/19317610802240279

Wisnieski, D., Sieving, R., & Garwick, A. (2015). Parent and family influences on young women's romantic and sexual decisions. *Sex Education*, *15*(2), 144-157. doi:10.1080/14681811.2014.986798

Yarber, W. L., Milhausen, R. R., Crosby, R. A., & Torabi, M. R. (2005). Public Opinion About Condoms for HIV and STD Prevention: A Midwestern State Telephone Survey. *Perspectives On Sexual & Reproductive Health*, *37*(3), 148-154.

Appendices

Appendix A: Cover Letter

Dear Sir or Madam,

My name is Annie Doster, and I am a senior Nursing Major at The University of Southern Mississippi. I am working towards graduating with honors and have begun the research for my honors thesis. My research is focused on the knowledge of sexually transmitted diseases among college students.

Thank you in advance for your interest in this study. By participating you are helping gain information about the relationship between perceived and actual knowledge levels regarding sexually transmitted diseases among college students. In order to be eligible for this study you must be older than 18 years of age, be able to read the English language, and be enrolled as an undergraduate student at the University of Southern Mississippi.

Your participation in this survey is anonymous and voluntary. Your identity will remain unknown to the researcher and for the purposes of this study your survey will be identified based on a randomly assigned ID number and will not be associated with you as an individual. Your email will not be linked to your responses.

All key personnel that have designed and will conduct this research have gone through education on human subjects research. There is no foreseeable risk to you during participation in this research study; however, even if you begin the survey you may withdraw from the study at any time prior to the actual submission of the survey. Completion of the survey indicates consent to participate in the study.

This research has been reviewed by the USM Institutional Review Board and ensures the research project follows federal regulation in regards to human subjects. For any questions regarding the rights as a participant contact the Chair of the Institutional Review Board at 601-266-5997. The IRB approval number for this study is 17091302.

Please answer the questions to the best of your ability. For any questions regarding the research contact me.

Thank you,

Annie Doster

annie.doster@usm.edu

Appendix B: Survey

Adapted Questionnaire for Attitudes and Knowledge
Compiled from Jaworski & Carey (2007) and Stoskopf (1999)

The questionnaire is completely anonymous. Please answer all the questions to the best of your ability. All information will be kept COMPLETELY CONFIDENTIAL.

Section I: General Information.

1. Your age: _____ 18 _____ 19 _____ 20 _____ 21 _____ 22 _____ 23+

2. Gender:
_____ Male
_____ Female

3. Race:
_____ African American
_____ Asian American
_____ Caucasian American
_____ Hispanic American
_____ Native American
_____ Other

4. Religion:
_____ No religion
_____ Christian (including Church of England, Catholic, Protestant, and all other Christian
denominations)
_____ Buddhist
_____ Hindu
_____ Jewish
_____ Muslim
_____ Other

5. Please select the college to which you belong:
_____ College of Arts and Letters
_____ College of Business
_____ College of Education and Psychology

_____ College of Health
_____ College of Nursing
_____ College of Science and Technology
_____ Other

6. I went to high school in:
_____ The city
_____ A suburb
_____ A rural area

7. My high school was:
_____ Public
_____ Private
_____ Home-schooled

8. My family:
_____ Is a single parent family
_____ Is a "remarried" family
_____ Includes both natural (or adoptive) parents
_____ I live with other relatives or a guardian

9. I am the:
_____ Only child
_____ Youngest child
_____ Middle child
_____ Oldest child

10. Please indicate how many brothers and/or sisters you have:
_____ Brothers
_____ Sisters

11. Have you taken a college course in human sexuality?
_____ Yes
_____ No

12. Have any of your college courses had a lecture on sexually transmitted diseases?
_____ Yes
_____ No

Section II: Attitudes

Indicate the extent to which you agree with each of the attitude statements below.

1	2	3	4	5
Strongly Disagree	Somewhat Disagree	Neither Agree Nor Disagree	Somewhat Agree	Strongly Agree

Teaching sex education in school encourages teens to have sex.	1	2	3	4	5
I feel it is a parent's responsibility to teach their children about sex.	1	2	3	4	5
I believe sex education should be taught in schools.	1	2	3	4	5
My high school gave me an adequate sex education.	1	2	3	4	5
I think adolescents need more sex education.	1	2	3	4	5
It is easy for me to ask my parents about sex.	1	2	3	4	5
I learned a lot about sexually transmitted diseases from sex education in high school.	1	2	3	4	5
I know where I can go to get accurate information about sex related issues.	1	2	3	4	5
My friends are knowledgeable about the biological aspects of sex.	1	2	3	4	5
My religious beliefs play a role in my views about premarital sex.	1	2	3	4	5
I am embarrassed to talk about sex.	1	2	3	4	5
I think I have received enough information about sex to make healthy decisions.	1	2	3	4	5
I am knowledgeable about sexually transmitted diseases.	1	2	3	4	5
I wish I had received more information about sex sooner in life.	1	2	3	4	5
I plan on waiting until I am married to have sex.	1	2	3	4	5

I would take a course about sex education if one were available.	1	2	3	4	5
Most teenagers are well informed about sexually transmitted diseases.	1	2	3	4	5
If a free class about sex were offered in my community I would attend.	1	2	3	4	5
I think I should have more knowledge about the many aspects of sex.	1	2	3	4	5
My parents have talked to me about sex and its implications.	1	2	3	4	5

Section III: Knowledge

The following questions are to test your knowledge about sexually transmitted diseases. Please select true, false, or don't know to the best of your knowledge.

Women are less likely to have symptoms of common STDs such as Chlamydia and Gonorrhea compared to men.	True	False	Don't Know
People who have had a sexually transmitted disease such as Chlamydia or Gonorrhea are immune to getting that type of sexually transmitted disease again.	True	False	Don't Know
Many cases of Gonorrhea and Syphilis are contracted by people using dirty toilet seats in public bathrooms.	True	False	Don't Know
Genital Herpes is caused by the same virus as HIV.	True	False	Don't Know
Chlamydia and Gonorrhea can cause pelvic inflammatory disease and infertility if left untreated.	True	False	Don't Know
There is a cure for Gonorrhea and Chlamydia.	True	False	Don't Know
A person with a cold sore on the mouth can give his or her partner Genital Herpes during oral-genital contact.	True	False	Don't Know
If neither person has ever had a sexually transmitted disease, a monogamous couple can engage in oral-genital or anal sex without fear of getting AIDS.	True	False	Don't Know
A person with Genital Herpes is generally not contagious between active attacks.	True	False	Don't Know

A person diagnosed with Gonorrhea can assume that it is safe to resume sexual activity after beginning treatment.	True	False	Don't Know
A person who has recently been sexually active and who has no symptoms does not have to worry about Gonorrhea or Chlamydia.	True	False	Don't Know
Most women do not show any symptoms in the early stages of Gonorrhea or Chlamydia.	True	False	Don't Know
A person can only have one type of sexually transmitted disease at a time.	True	False	Don't Know
A woman with Genital Herpes can pass the infection to her baby during childbirth.	True	False	Don't Know
Cold sores and fever blisters are symptoms of herpes.	True	False	Don't Know
Latex condoms eliminate the risk of acquiring sexually transmitted diseases.	True	False	Don't Know
Because of penicillin and other drugs, sexually transmitted diseases are on the decline in the United States.	True	False	Don't Know
HPV is the main cause of cervical cancer in women.	True	False	Don't Know
Young African American gay and bisexual men are most affected by HIV.	True	False	Don't Know
Washing your genitals after sexual intercourse can prevent sexually transmitted diseases.	True	False	Don't Know

Appendix C: IRB Approval

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
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NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the “Adverse Effect Report Form”.
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 17091302
PROJECT TITLE: The Knowledge of Sexually Transmitted Diseases Among College Students
PROJECT TYPE: Honor's Thesis Project
RESEARCHER(S): Annie Doster
COLLEGE/DIVISION: College of Nursing
DEPARTMENT: Collaborative Nursing Care
FUNDING AGENCY/SPONSOR: N/A
IRB COMMITTEE ACTION: Exempt Review Approval
PERIOD OF APPROVAL: 09/19/2017 to 09/18/2018
Lawrence A. Hosman, Ph.D.
Institutional Review Board