College Campus Outreach to Increase Chlamydia Screenings

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The document mentioned above has been reviewed and accepted by the student’s advisor, on behalf of the advisory committee, and by the Assistant Dean for MSN and DNP Studies, on behalf of the program; we verify that this is the final, approved version of the student's DNP Project including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

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College Campus Outreach to Increase Chlamydia Screenings

Submitted in Partial Fulfillment of the Requirements for the Degree of Doctor of Nursing

Practice at the University of Kentucky

By

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Abstract

A common sexual health concern around the world is sexually transmitted infections (STI). Chlamydia is the most reported sexual health problem. The highest prevalence of chlamydia rates is among ages 15-24, which includes college age students (CDC, 2019). The lack of education provided to students prior to starting college by parents, health care providers and high school sources as well as inaccurate information obtained from peers and erroneous internet sources may lead to misconceptions about STIs and consequently the avoidance of routine screening among this high-risk population (Canan & Jozkowski, 2017).

The purpose of this project was to determine if an educational intervention increased chlamydia screening rates across a college campus. A quasi-experimental design was performed to determine a correlation. After permission was granted to contact Greek chapters on the campus of a large, midwest university, an educational session was scheduled with a fraternity and a sorority. During this session, a 7-question survey was conducted to assess the students’ knowledge of chlamydia screenings. Following the survey, the educational intervention was conducted for the students regarding the importance of chlamydia screenings. Students were then provided information on where to be tested on campus. The screening rates were trended at University Health Services over four months following the educational intervention to determine if a correlation existed between the educational interventions and screening rates. Data analysis was performed using descriptive statistics. There was not a statistically significant correlation between educational sessions and chlamydia screening rates. There is a need to connect with college students early in their college careers to educate these at-risk students on the dangers and
prevalence of STIs on campus, why routine screenings are vital to good sexual health and to increase student awareness of how and where to get routine STI testing.
Acknowledgements

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College Campus Outreach to Increase Chlamydia Screenings

A common sexual health concern around the world is sexually transmitted infections (STI). Chlamydia is the most common STI and the most reported sexual health problem. The highest prevalence of chlamydia rates is among college age students (CDC, 2019). The lack of education provided to students by parents, healthcare providers and high school sources as well as inaccurate information obtained from peers and erroneous internet sources may lead to misconceptions about STIs and consequently the avoidance of routine screening among this high-risk population (Canan & Jozkowski, 2017).

The purpose of this project was to determine if an educational intervention increased chlamydia screening rates across a college campus. Specific aims included: 1) assess students’ knowledge of chlamydia screenings, 2) provide an educational intervention regarding the importance of chlamydia screenings, 3) trend screening rates at University Health Services over four months following the educational intervention to determine if a correlation existed between the educational intervention and screening rates. The number of chlamydia screenings and positive rates are currently being trended monthly at University Health Service for the gynecology providers.

Background

According to the Centers for Disease Control and Prevention (CDC, 2016b) sexual health is defined as physical, emotional and mental well-being related to sexuality. When proper sexual health is not maintained, problems arise. Sexual health problems, such as STIs, require identification, prevention and treatment (CDC, 2016b). A Healthy People 2020 (2014) goal is to promote healthy sexual behaviors, strengthen community health capacities and increase access to
quality services to prevent STIs and related complications. One objective related to this goal is to reduce the proportion of adolescents and young adults with chlamydia trachomatis.

Chlamydia is caused by the bacteria chlamydia trachomatis (CDC, 2016a). This bacterium infects mucous membrane cells such as those located in the vagina, urethra, cervix, endometrium, anus and throat through sexual contact (American Sexual Health Association, 2017; CDC, 2016a). Chlamydia can affect both men and women and can lead to acute and chronic consequences for both. In 2018, the national rate of occurrences of chlamydia was 539.9 for every 100,000 persons (CDC, 2019). Almost two-thirds of reported chlamydia cases were among persons aged 15-24 years. The estimated total annual cost for STI treatment in the US is $15.6 billion dollars (CDC, 2017). Chlamydia is more common in women and can lead to pelvic inflammatory disease, infertility, ectopic pregnancy and chronic pelvic pain if left untreated (USDHHS, 2019).

Over half of infertility is due to preventable STIs (USDHHS, 2019). The highest prevalence to these STIs include chlamydia and gonorrhea, which can lead to Pelvic Inflammatory Disease (PID) since the majority of symptoms are asymptomatic. PID includes infections of fallopian tubes, womb and/or ovaries. Infertility risks increases with delayed treatment. The 10-20% of females who do not seek treatment may have complications from PID, which can lead to infertility in 20% of females (USDHHS, 2019).

Chlamydia infections not only are a national problem, but a significant local issue in Kentucky. The CDC (2016a) ranks Kentucky 37th out of the 50 states for number of reported
2016a). The local university has also seen a steady increase in chlamydia cases. Since 2010, University Health on the campus has seen a steady increase of chlamydia screenings and infection. In 2010 there were 3,451 screenings performed with 117 positive results (X%). In 2018 there were 6,636 screened with 459 positive results (X%) (UHS, 2019), more than doubling the rate of positive occurrence since 2010. This is comparable to national rates. According to American College Health Association in 2007, the positivity rate was 3.7% for chlamydia across multiple large universities across the US. The positivity rate increased to 7.5% in 2017 (ACHA, 2019). According to the CDC, there were 251.4 cases per 100,000 population. This increased to 539.9 cases per 100,000 population in 2018. Current STI rates are the highest ever recorded in the US (CDC, 2019).

Chlamydia screenings are included under the health fee that is paid by all full-time students. Despite the cost and accessibility to these students, the incidence of positive screening results continue to trend upward. Therefore, it is important to understand the sexual health background these students bring to UK, the lack of education and awareness and other potential social and cultural barriers to screenings.

Many factors likely contribute to the increased incidence of chlamydia among the college age population at UK. A study conducted at another public university explored barriers to using reproductive health services, including routine screenings. Four main barriers were found: 1) access to services including lack of knowledge to access, 2) wait time for services, 3) quality of service and 4) social embarrassment (Bersamin, 2017; Wombacher et al. 2018). These barriers contribute to longer lag time from initial sexual experience and receiving reproductive health care. For females younger than 25 years old, on average it took 22 months to seek sexual health
care. This same study found that only 50.9% of students visited reproductive health services in a primary care setting or in a school based clinic (Bersamin, 2017).

Getting the attention for this at-risk population is important to change the perceived risks and benefits to improve their sexual health. The use of education that displays statistics with visual aids was found to be an effective strategy compared to percentages and numerical values without visual aids (Garcia-Retamero, & Cokely, 2015; Scull et. al. 2019). One study researched its effectiveness among a variety of campuses. It too used visual aids along with statistics. However, it did not provide data specific for the campus, rather providing data from multiple campuses in the US. When these outreach methods were deployed it was found to increase the number of first-time student being tested and opened discussions among peers related to the topic of getting tested (Habel et. al., 2015). By changing the negative association related to STI testing, there is also a positive correlation with the intent to screen and repeated screenings (Wombacher et. al, 2018).

**Review of Literature**

Larger public universities bring a varying student population with a diverse background related to sexual health. College students depend on family, high school, pediatricians and social media resources for their primary methods of sexual health education (Canan & Jozkowski, 2017). There is very limited funding in public schools across the US for sexual health education. The programs that do have funding, must reapply yearly to maintain programs (Canan & Jozkowski, 2017). The majority of primary and secondary public schools in the Southeastern region of the US do not require sexual health education (Guttmacher Institute, 2016). Of the schools who do teach this topic, the information is not required to be medically accurate and
most teach abstinence-only programs (Breuner, & Mattson, 2016; Guttmacher Institute, 2016). Across the US, there are four states that require addressing same-sex relationships negatively and three of these states are in the Southeastern region (Guttmacher Institute, 2016). Unfortunately, some public-school systems lack the proper curriculum and funding to provide a strong sexual health foundation.

Not only are these school systems failing to educate these young students, pediatricians are falling short on educating our children too. In one study only 67% of adolescent received sexual health education from their pediatrician. The pediatricians, who did discuss this topic, only did so typically for approximately 36 seconds (Alexander et. al., 2014). Ideally, information discussed by pediatricians should coordinate with what is taught by parents. One study asked adolescents if their parents spoke to them regarding the six major sexual health topics: abstaining, birth control, STIs, where to get birth control, how to prevent HIV/AIDS and how to use a condom. Only 67% of males and 80% of females reported having had a discussion with their parents on any of these topics. Unfortunately, when a discussion occurred, it frequently covered only one of the six major topics (Breuner, 2016).

It is not surprising that condom use is not prevalent among college age students. On average, condoms are used around 50% of the time among this population (Asare, 2015; Brill et. Al, 2019; Harvey et al., 2017; Hopkins et. al., 2018). When surveying college students, 93% reported having sex in the last 3 months, and 51% reported having more than one partner during this time (Asare, 2015). With high levels of college students being sexually active and only 50% using condoms, this population is at risk for many unintended consequences.
Harvey et al. 2017 examined what motivates this at-risk population. Seven variables were identified: duration of the relationship, condom self-efficacy, relationship commitment, sexual decision-making, relationship power, vulnerability to STIs and pregnancy. This study found that 51% used condoms to prevent pregnancy, 17% used condoms for STI prevention and 33% used condoms to prevent pregnancy and STIs. The perceived risks of contracting a disease are low for this group causing them to be at an even greater risk. Another study identified two major barriers for condom use; being embarrassed about purchasing condoms and having the conversation in which partners negotiate using one (Brüll et. Al, 2019). If college students do not use condoms, they take the risk of contracting STIs and possibly pregnancy. Despite the lack of condom use, many college students still do not get routine screenings.

Theoretical Framework

The Health Belief Model (HBM) was originally used to determine why people fail to abide by recommended prevention strategies or screening tests for early detection of diseases. It was expanded to explore patient’s responses to symptoms and compliance with medical treatment (Janz & Becker, 1984). A person’s belief in a threat of illness along with their belief in the effectiveness of changing ones’ behavior is the main concept of the HBM. The model is divided into six constructs: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action and self-efficacy (Janz & Becker, 1984). These constructs help focus on specific obstructions to care.

The first construct, perceived susceptibility, is a form of contemplating personal risks. This is powerful because it relates to the individual’s own assessment of developing a disease (Janz & Becker, 1984). In this case, a person must be aware of their risk of contracting chlamydia. Lack of education can cause an individual to think they are at low risk, therefore,
they do not feel it is important to change their behavior. Individuals who are aware of chlamydia may perceive themselves as very susceptible to contracting chlamydia and take more precautions against the infection.

The perceived benefits construct can also depend on how well a person is educated on the topic or has knowledge on chlamydia. Perceived benefits refer to when an individual changes a behavior and perceives this new change as better than their old habits (Janz & Becker, 1984). When an individual change to a less risky behavior, they must feel that this change is beneficial in reducing their chances of chlamydial exposure.

The perceived barrier construct refers to an individual’s own judgment of the obstacles that are in the way of embracing a new behavior (Janz & Becker, 1984). An obstacle can be any number of things depending on the individual. Of all the constructs in the HBM, perceived barriers are considered the most important deciding factor for changing ones’ behavior (Janz & Becker, 1984). In order for a change in behavior to occur, an individual must believe that by altering a behavior, the result will outweigh the changed behavior (CDC, 2004).

The next construct is perceived seriousness and refers to the individual’s understanding of the severity and prevalence of a disease (Janz & Becker, 1984). In relation to chlamydia, this is when it would be important for individuals to have an understanding of the infection. For example, educating at risk populations regarding the short and long-term consequences of contracting and treating the infection would help individuals understand the seriousness of this STI.

Cues to action is a construct that plays a role when an individual starts making a changes. This typically involves outside components that provide an internal cue to change behavior (Janz & Becker, 1984). These are not necessarily a person’s own individual reasons for changing but
other factors that could have a positive or even negative influence to create a change. For example, cues to action could be related to family members, friends, media, or an occurrence of an event. This is a particularly important factor for this age group.

The final construct is self-efficacy. This is a very important component that connects the other constructs together. Self-efficacy is when one believes in their own ability to accomplish something (Janz & Becker, 1984). Despite one’s perceived susceptibility, severity, benefits, barriers, and cue to action one must believe they are able to complete an action prior to overcoming these constructs. In this case, an individual must believe they will not contract chlamydia if they overcome the other constructs of the HPM and believe that they can avoid chlamydia.

The HBM can be used as a framework to strategize ways to prevent the spread of chlamydia. All six components of the HBM are fundamental to understand when and if an individual will make a behavioral change in order to establish a healthier decision-making. The HBM is an important theoretical framework that can be used toward the goal of reducing the number of young adults (ages 15-20) who contract and spread chlamydia. A provider can tailor each component of this framework to the individual through education and screening at any health visit. In order to facilitate the process a screening tool can be used to understand who is at risk and at what stage of change they are in to decrease their risks and the number of infected individuals.

**Congruence of Project to Organization’s Mission**

The setting for this project was a large public university that offers education to a large number of students. Included in the university’s academic health center are the colleges of medicine, nursing health sciences, and dentistry. Counseling services are also available. This
study falls within the mission and goal. The mission is “This University is a public land grant university dedicated to improving people's lives through excellence in education, research and creative work, service and health care. As Kentucky’s flagship institution, the University plays a critical leadership role by promoting diversity, inclusion, economic development and human well-being.” (University of Kentucky Mission and Vision, 2015). This project falls within the mission and its goal to promote and develop human well-being. Sexual health is a component of human well-being. This project gathered information from students in order to improve the well-being of all students on campus. The vision is: “As Kentucky’s indispensable institution, we transform the lives of our students and advance the Commonwealth we serve – and beyond – through our teaching and learning, diversity and inclusion, discovery, research and creativity, promotion of health, and deep community engagement” (University of Kentucky Mission and Vision, 2015). The outreach of this project facilitates and involves teaching and learning to promote the health of the community. It also will involve the community by reaching out to a variety of students in different settings and will encourage involvement by all, to promote a positive sexual health experience. The students will learn from current research and have the opportunity to improve their health, the health of their peers and for future students.

Methods

Design

A quasi-experimental design was used to determine if there was a correlation between an educational intervention and increased chlamydia screening rates among college students. The independent variable was the educational intervention. The dependent variable was the number of students screened.
**Setting**

The setting for this project was a large public university in the Midwest. The educational intervention occurred during a mandatory chapter meeting at a sorority and fraternity. The sorority gathered in a large classroom on campus while the fraternity gathered in house. These students have the benefit of being treated for minor health care needs on campus within walking distance to their Greek house.

Student Health is within the department of University Health Services on the university campus. The clinic is located in the central part of campus near other medical facilities. Student Health offers services to all full-time undergraduate students that pay the health fee, which covers primary care visits, women’s health, behavioral health, health education, and wellness services. These include sexual health education sessions and STI testing. Student Health is staffed with physicians, nurse practitioners, counselors and registered nurses and maintains a physician on call, for urgent circumstances, when the clinic is closed. Appointments can be scheduled in advance or same day depending on availability. A phone information nurse takes calls and answers student’s questions throughout the business hours. Student Health is open from 8am to 6pm Monday through Friday year-around.

The students are free to go to other providers for screenings and follow-ups; however, the goal is to get students screened at Student Health. Only Student Health will be able to trend data at this setting, which will provide connection with other campus resources and can facilitate a rapport that will promote continued screenings throughout student’s college careers.
Sample

The target population included students in the Greek chapters that are full-time undergraduate students enrolled at the university. Chlamydia screening is provided at no additional charge for full-time undergraduate students enrolled during the normal academic term under the mandatory health fee.

For the 2019-2020 academic year, there were 30,545 students enrolled at this university, 27,401 were full time students (Enrollment & Demographics, 2019). The Greek councils represent a variety of students. In Fall 2018, there were 1,690 males and 3,636 females who were members of a chapter. There are wide ranges of chapters with different focuses including African American based, international students, Christian groups, Latino based, high academic requirements, and agricultural interests. See appendix A for a table of the demographics of the student population at the university.

Procedures

Permission was granted from the Dean of the Greek Council in order to speak with students regarding sexual health information specific to chlamydia. Permission was granted from University Health Services to use data that is collected to trend the number of screenings performed. Following IRB approval, a request was sent to each sorority and fraternity with a chapter house on campus. The request was sent via email between November 2019 and February 2020.

Prior to the educational intervention, a survey with informed consent (see appendix B) was obtained via Qualtrics. Qualtrics is approved by review boards, including UK, as a secure method for data collection. The survey (see appendix C) was formatted and a short URL was given to the subjects to complete through their own electronic devices, including cell phones.
The purpose for the survey was to collect information to support the need for this educational intervention and as a teaching strategy during the intervention. During the intervention, information was provided via PowerPoint. The PowerPoint was on a laptop and projected onto a screen. See Appendix D for PowerPoint.

**Data Collection**

The survey collected during the educational interventions recorded the number of students who received the intervention. The data collected from the seven questions (see appendix C) provided a tool to educate the students and demonstrated the need for educational intervention on campus.

The data needed to determine chlamydia screening rates was collected at University Health Services. Data collected included the number of students screened and the number positive for chlamydia. The current process only compares the yearly number of students screened. For this project, monthly data was collected at the start of each intervention and compared to the monthly number of patients screened the previous year (November 2018-February 2019).

**Data Analysis**

Descriptive statistics were used to summarize the survey items prior to the educational session. The Chi-square test of association was used to evaluate whether the screening rates differed from November 2018-February 2019 and November 2019-February 2020. The data was analyzed in SPSS, version 25, and an alpha level of .05 was used to determine significance.
Results

Pre-Educational Session Survey

A total of 192 students (164 sorority, 28 fraternity) completed the survey. The majority (85%) were sexually active. Almost all (94%) were aware that University Health is included with their health fee paid with their tuition, however only 16% had been screened for an STI at UHS. Approximately one in five students (22%) reported having been screened for an STI in the past 12 months. Over half (58.4%) reported use of a barrier method (i.e., condom or dental dam) during sexual intercourse. The final question tested the students’ knowledge for how often one should be screened for an STI. Less than half (42%) answered correctly by selecting with every new partner. See Appendix E: Table 1 for these results.

Chlamydia Screening Rates

During the pre-education period, 12,372 students visited UHS while 12,110 students were seen at UHS during the post-education period. During the educational session time frame 2,755 (22%) were screened and 169 were positive. The previous year 2,710 (22%) were screened with 181 positive results. For both years, 6% of the students screened were positive for chlamydia. See Appendix F: Table 2.

A Chi-square test was performed on the number screened vs the number of patients not screened for chlamydia. For both pre-education (Nov. 2018-Feb. 2019) and post-education educations session (Nov. 2019- Feb. 2020) 22% of the patients seen in the clinic were screened for chlamydia which is not significant. See Appendix G: Table 3

Discussion

Although no statistically significant correlation between the educational intervention and chlamydia screening rates, the data gained from the survey is beneficial. Over half of students
(58.4%) used a barrier method. This is slightly above the national average of 50% (Asare, 2015; Brüll et. Al, 2019; Harvey et al., 2017; Hopkins et. al., 2018). One of the four main barriers identified by Bersamin (2017) and Wombacher et al. (2018) found this population attributed the lack of knowledge to access of services as reason to not get testing. The pre-survey found the majority (94%) were aware that University Health is included with their health fee paid with their tuition. More research is needed to determine what is a barrier for this populations since it does not correlate to research conducted by Bersamin (2017) and Wombacher et al. (2018). The pre-survey found that only 16% had been screened for an STI at UHS. Only 22% have been screened for an STI in the past 12 months. These results are similar to previous research, which found it took 22 months to seek sexual health care. This same study found that only 50.9% of students visited reproductive health services in a primary care setting or in a school-based clinic (Bersamin, 2017). More research is need at this university to determine barriers for this population.

**Facilitators and Barriers to Implementation**

Overall, this project was feasible. The intervention session lasted 10 -15min. Data collection was in place at UHS. Other educational sessions occurred during screenings at the Student Center on the campus. These were organized by UHS to occur during a 4 hour time at peak lunch hours at a central locations on campus where students gather, the student center. These were called GYT (Get Yourself Tested) campaigns. See appendix H for flyer used for these events. During this time a nurse practitioner met with students to screen for chlamydia. This clinic time was free to students and free condoms, lubricant, and t-shirts were offered as a reward. Two separate GYT clinics took place during the intervention timeframe of November 2019 to February 2020. The number of students screened during this time are included in the
number of results provided by UHS. This facilitated another option for free screenings on campus.

The primary barrier was establishing a connection with students to perform the intervention. Emails were sent every 1-2 weeks from November-December. Of the 27 chapter presidents, emailed, four responded and two meetings were scheduled. One sorority during the fall semester and one fraternity during the spring semester. Another barrier was the timing of the intervention. Students were off for winter break from December 20th, 2019 until January 15th, 2020.

**Word-of-Mouth**

Although the total number of students who received the education session during the Greek chapter meeting was not met, it did make an impact on a handful of students who did receive the message. A clinician at UHS reported a patient who sought screening after the educational screening. This clinician asks all patients who present for testing what made them decide to get tested. During the GYT that took place in the student center, the students complete a survey for UHS. Of the 12 students who presented to GYT session in February 2020, one student put on the survey they heard about the event from the educational session during the Greek chapter meeting. For both of these students, their screening does get included in the total number for the results. However, this tells us informally it did make an impact for them, enough that they sought screening. These are just two students out of the whole campus, but their desire to improve their health and the information they gained can help improve their sexual health. For example, they may not have a sexual health issue during the time of testing, but they know the process and information to seek treatment if or when needed. In addition, this age group has large social connections, especially in the Greek community. They have the knowledge and
experience now to assist peers who may need advice for where and how to get tested. They have the potential to make a larger impact for other students and spread information by word of mouth.

Implication for Practice, Education and Future Research

These results can provide guidance for future implications. The challenges faced indicate more research needs to be performed on how to reach more students. Future researchers must find ways to connect more students. This can be by going above the chapter president to establish a time to speak with students. For example, involving the Dean of the Greek chapters. She could make it a mandatory educational session for all chapters. There is also potential for testing to take place at the Sorority and/or Fraternity houses. This would require a stronger partnership between UHS and these chapters. A nurse and/or clinician could go to the Greek houses or other sites on campus to perform tests. There is potential to educate more students.

There is potential to get more students tested. During the two-educational sessions that did occur during this project, it was obvious that students were interested in the presented information. Many asked questions. When shown the total positives cases on campus, the students were visibly shocked. There is a need for future implication. The goal is to provide a foundation for future testing and education. More research must take place and UHS must find a way to reach more students. Another possible intervention would be to include sexual health education during freshmen orientation.

Limitations

There were a few limitations for this project. The primary one being where students obtained screenings. Chlamydia screenings are covered under the health fee included in the tuition, however students still have the potential to get screened at other sites. For example, they
can go to the Health Department, Planned Parenthood, Urgent Treatment Centers, Emergency Rooms or primary care providers. These screening rates and positives are not included in the total numbers for this research. This would make trending results impossible to determine. The CDC monitors national and local rates. It is difficult to get a true number given the multiple testing locations.

The Greek council placed another limitation. They did not want specific demographic information collected during the educational sessions. This limited the information collected to determine if a diverse sample size was established. We were only able to determine if the students were full time and assumed the responses from the fraternities where male and sorority were female. Further permission is needed to collect demographic information from these students.

**Conclusion**

Chlamydia is the most prevalent sexually transmitted infection in the United States. Because chlamydia infection is asymptomatic in women, it can be transmitted unintentionally to partners. Chlamydia is easily diagnosed and treated, however if it is not treated early, multiple long-term complications can occur (CDC, 2016a). Healthy People 2020 has established multiple targets in relation to screening, diagnosing and treating chlamydia. In order to reach these targets a theoretical framework, screening tools and guidelines can be incorporated into practice.

By integrating the Health Belief Model into practice, providers can therapeutically screen individuals and recommend preventative strategies. When screening a patient, the provider can use the constructs associated with the HBM: perceived susceptibility, perceived severity, perceived benefits, perceived barriers, cue to action and self-efficacy to identify risky behaviors and ways to change an individual's behavior (Janz & Becker, 1984). When addressing sexual
history, the CDC recommends asking about partners, sexual practices, what protection is used, sexual history and preventions of pregnancy (CDC, 2014). Following screening the CDC has guidelines in place to diagnose, treat, and manage chlamydia. The overall goal is to detect the infection, prevent complications and treat affected partners (CDC, 2015).

For both pre-education and post-education educations session 22% of the patients seen in the clinic were screened for chlamydia. Although, there was no a statistically significant difference from the pre- and post-education session, important data was gained from the pre-survey. The majority of students are aware that UHS is included with their tuition, but only 16% have been screened for an STI at UHS. The students used barriers on average 58.4% of the time but only 22% have been screened for an STI in the past 12 months. The majority (42%) acknowledge the need for screening with every new partner. This information is beneficial to UHS and other educators with a desire to improve the sexual health of college age students.

Based on the evidence provided, with proper implementation the target of increasing the number of sexually active females between 16-20-year-old who are screened to 70.9% can be achieved. In order to reach this goal, the barriers faced to screening must be addressed. Connecting to students via social groups and technology must occur. A stronger relationship with social groups and UHS is vital. Administrative leaders on campus must make sexual health a higher priority for their students. Thus, making educational session a mandatory educational tool for their students. There is great potential to connect with students.

The Information gathered during the interventions will give stakeholders a foundation of knowledge on the STI awareness of the students and provide information to the students during the meeting in order for them to feel they are in the similar situation as others. Students will also realize why chlamydia is prevalent and understand the issue of the number of students that are
unfamiliar with Student Health’s service capabilities. Having a peer educator and providing relevant statistics to the student in an engaging environment will allow for a beneficial interaction that will produce the intended results to increase the number of student receiving chlamydia screening and decrease the levels of chlamydia on campus.

In conclusion, providers need to take the lead in order to accomplish this goal. By using the Health Belief Model and the recommended CDC guidelines for screening tools more females of all ages can be screened annually and the number of individuals infected by chlamydia can be decreased. As a result, there will be less long-term complications, including pelvic inflammatory disease, infertility and ectopic pregnancy.
References


ERPs Reveal Disengagement Processes Related to Condom Use Embarrassment in Intention-Behavior Inconsistent Young Adults. *Archives of Sexual Behavior*. 48(2), 521-532.


Hopkins, K., Hubert, C., Coleman-Minahan, K., Stevenson, A. J., White, K., Grossman, D., &


Integrative Model of Behavioral Prediction to Understand College Students’ STI Testing Beliefs, Intentions, and Behaviors. *Journal of American College Health: J of ACH.* 66(7), 674-682.
Appendices

**Appendix A: Table of Demographics of the University**

<table>
<thead>
<tr>
<th>Demographics</th>
<th>% from total full-time population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>55%</td>
</tr>
<tr>
<td>Male</td>
<td>45%</td>
</tr>
<tr>
<td>Out-of-State</td>
<td>35%</td>
</tr>
<tr>
<td>In-state</td>
<td>65%</td>
</tr>
<tr>
<td>Caucasian</td>
<td>73.1%</td>
</tr>
<tr>
<td>African America</td>
<td>6.7%</td>
</tr>
<tr>
<td>International Students</td>
<td>5.6%</td>
</tr>
<tr>
<td>Latino</td>
<td>4.5%</td>
</tr>
<tr>
<td>Asian</td>
<td>3.5%</td>
</tr>
<tr>
<td>2+ Races</td>
<td>3.4%</td>
</tr>
</tbody>
</table>

(Enrollment & Demographics, 2019).
Appendix B: Consent

Dear potential research participant:

Researchers at the University of Kentucky are inviting you to take part in an online survey about chlamydia screenings among college students. You are receiving this survey because you have been identified as being a full-time student at the University of Kentucky. We are asking you to participate in a research study to determine if an educational intervention will increase Chlamydia screening rates across UK’s campus. You are eligible to participate in this study if you are a full-time undergraduate student at The University of Kentucky.

Although you may not get personal benefit from taking part in this research study, your responses may help us understand more about chlamydia screening rates among students at UK. Some volunteers experience satisfaction from knowing they have contributed to research that may possibly benefit others in the future.

Taking part in this study is voluntary. If you choose not to participate, there will be no penalty or loss of benefits to which you are otherwise entitled. People choosing not to participate will not face any repercussions pertaining to employment status.

The survey/questionnaire will take about three minutes to complete. There are no known risks to participating in this study.

Your response to the survey is anonymous, meaning no names will appear or be used on research documents, or be used in presentations or publications. The researcher will not know that any information you provided came from you, nor even whether you participated in the study.

We hope to receive completed surveys from around 500 students, so your answers are important to us. Of course, you have a choice about whether or not to complete the survey, but if you do choose to participate, you are free to skip any questions or discontinue at any time.

Please be aware, while we make every effort to safeguard your data once received from the online survey company, given the nature of online surveys, as with anything involving the Internet, we can never guarantee the confidentiality of the data while still on the survey company’s servers, or while en route to either them or us. It is also possible the raw data collected for research purposes will be used for marketing or reporting purposes by the survey/data gathering company after the research is concluded, depending on the company’s Terms of Service and Privacy policies.

If you have questions about the study, please feel free to ask; my contact information is given below. If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-9428.

Thank you in advance for your assistance with this important project.

Sincerely,

Elizabeth Kinney, BSN RN DNP-Student
University of Kentucky
PHONE: 859-285-0630
E-MAIL: Elizabeth32@uky.edu
**Appendix C: Survey Questions**

Are you a full-time student?
- Yes
- No

Have you ever been sexually active?
- Yes
- No, I have never been sexually active

Have you visited University Health Services in the past for STI screenings?
- Yes
- Not sexually active
- No

What percentage of the time do you use a barrier (i.e. male condom, vaginal condom, dental dam) to protect yourself from a STI?
- Percentage of barrier use: [Not sexually active]

How often do you need to be screened for STIs?
- Yearly
- Onset of symptoms
- With every new partner
- Never
- Unsure
Appendix D: PowerPoint

**Take a Quick 7 Question Survey**

https://tinyurl.com/UKYEDU

**How to Stop the Spread of Chlamydia**

Elizabeth Kinney, RN-BSN, DNP-Student
AND THE SURVEY SAYS...

1. SEXUALLY ACTIVE
   - 83% ARE SEXUALLY ACTIVE
2. ARE YOU AWARE UHS IS INCLUDED IN YOUR HEALTH FEE FOR FULL TIME STUDENTS?
   - 95% ARE AWARE
3. HAVE YOU VISITED UHS IN THE PAST FOR STI SCREENING?
   - ONLY 33% HAVE VISITED UHS
4. HAVE YOU BEEN SCREENED FOR CHLAMYDIA IN THE LAST 12 MONTHS?
   - ONLY 24% HAS BEEN SCREENED
5. WHAT % OF TIME DO YOU USE BARRIERS?
   - 37% STUDENTS AGREE TO USING BARRIERS
6. HOW OFTEN DO YOU NEED TO BE SCREENING FOR STIS?
   - 43% WITH NEW PARTNER
   - 37% YEARLY
   - 18% NEVER
   - <1% WITH CHEST OR PAINFUL AND UNSURE

OBJECTIVES

1. WHAT IS CHLAMYDIA
2. CURRENT RATES ON CAMPUS
3. DISCUSS SURVEY RESULTS
4. CONSEQUENCES OF CHLAMYDIA IF LEFT UNTREATED
5. HOW TO GET TESTED
6. WHAT PREVENTS STUDENTS FROM GETTING TESTED
7. WHAT YOU SHOULD DO WITH ALL THIS INFORMATION

WHAT IS CHLAMYDIA?

- CHLAMYDIA IS THE MOST COMMON STI
- 2/3 OF REPORTED CHLAMYDIA ARE 15-24 YEARS OLD.
- OCCURS TO BOTH MEN AND WOMEN
- MORE COMMON AMONG WOMEN
- MANY CONSEQUENCES OF LEFT UNTREATED
- TRANSMITTED VAGINAL, ANAL OR ORAL CONTRACTION
- CAN CONTRACT EVEN IF EJACULATION DOES NOT OCCUR
- CAN GET MORE THAN ONCE
CURRENT RATES ON CAMPUS

STI Positivity Rates 2005-2019

TOTAL # CHLAMYDIA TESTS DONE

2019 = 7,593
2018 = 6,606
2017 = 6,261
2016 = 6,183
2015 = 5,923
2010 = 3,451

SYMPTOMS AND CONSEQUENCES

- MAJORITY ARE ASYMPTOMATIC
- WOMEN: ABNORMAL VAGINAL DISCHARGE, BLEEDING BETWEEN PERIODS &/OR PAINFUL URINATION
- MEN: DISCHARGE FROM PENIS, PAINFUL URINATION &/OR PAIN/SWELLING TO TESTICLE(S)
- ANAL PAIN, BLEEDING, &/OR DISCHARGE
- CAN LEAD TO PELVIC INFLAMMATORY DISEASE, INFERTILITY, ECTOPIC PREGNANCY AND CHRONIC PELVIS PAIN IF LEFT UNTREATED
- EASILY TREATED

DYK? MANY STDs HAVE NO SYMPTOMS. PROTECT YOUR HEALTH. GET TESTED.
PREVENTION & TESTING

- Prevention: Abstinence, proper condom use or monogamous relationship
- Test with every new partner
- Test yearly if sexually active in a monogamous relationship
- Urine or vaginal swab

BARRIER TO TESTING

1. Access to services including lack of knowledge to access
2. Quality and wait of services
3. Quality of service
4. Social embarrassment
   - Only 51% of students visit a reproductive health services in a primary care setting or school based clinic

HALF

Of all sexually active young people, half will get an STD before the age of 25. Most will not know it.

HOW TO GET TESTED

- University Health (Student Health)
- No additional cost to full time students
- Free condoms
- Confidential
- Fast
- Schedule online with the Medicat portal or call 859-323-2778
- 8 AM - 5 PM M-F, 9 AM - 11 AM SATURDAY
  - Quick testing at the Student Center 2/12 11A-2PM
- www.facebook.com/uksexexperts
- www.twitter.com/uksexexperts
Appendix E:

Table 1. Screening rates for chlamydia pre-and post-educational intervention

<table>
<thead>
<tr>
<th>Screened</th>
<th>Pre-education (n = 12110)</th>
<th>Post-education (n = 12372)</th>
<th>(p)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>2710 (22.4%)</td>
<td>2755 (22.3%)</td>
<td>.84</td>
</tr>
<tr>
<td>No</td>
<td>9400 (77.6%)</td>
<td>9617 (77.7%)</td>
<td></td>
</tr>
</tbody>
</table>
Appendix F:

Table 2: Totals

<table>
<thead>
<tr>
<th></th>
<th>Total Patients</th>
<th>Total Screened</th>
<th>Total Positives (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11.01.2018-02.28.2019</td>
<td>12,110</td>
<td>2,710</td>
<td>181 (6%)</td>
</tr>
<tr>
<td>11.01.2019-02.28-2020</td>
<td>12,372</td>
<td>2,755</td>
<td>169 (6%)</td>
</tr>
</tbody>
</table>

Appendix G:

Table 3. Pre-Educational Session Survey (N = 192)

<table>
<thead>
<tr>
<th></th>
<th>Mean (SD) or n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time student</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>192 (100%)</td>
</tr>
<tr>
<td>No</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Have you ever been sexually active?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>164 (85%)</td>
</tr>
<tr>
<td>No</td>
<td>28 (15%)</td>
</tr>
<tr>
<td>Are you aware University Health is included in your health fee?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>180 (94%)</td>
</tr>
<tr>
<td>No</td>
<td>12 (6%)</td>
</tr>
<tr>
<td>Have you ever visited University Health in the past for STI screening?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>31 (16%)</td>
</tr>
<tr>
<td>No</td>
<td>135 (70%)</td>
</tr>
<tr>
<td>Not sexually active</td>
<td>26 (14%)</td>
</tr>
<tr>
<td>Have you been screened for chlamydia in the past 12 months?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>42 (22%)</td>
</tr>
<tr>
<td>No</td>
<td>123 (64%)</td>
</tr>
<tr>
<td>Not sexually active</td>
<td>27 (14%)</td>
</tr>
<tr>
<td>What percent of the time do you use barriers?</td>
<td>58.4% (38.8)</td>
</tr>
<tr>
<td>How often do you need to be screened for a STI?</td>
<td></td>
</tr>
<tr>
<td>Yearly</td>
<td>49 (26%)</td>
</tr>
<tr>
<td>Onset of symptoms</td>
<td>10 (5%)</td>
</tr>
<tr>
<td>With every new partner</td>
<td>81 (42%)</td>
</tr>
<tr>
<td>Never</td>
<td>35 (18%)</td>
</tr>
<tr>
<td>Unsure</td>
<td>17 (9%)</td>
</tr>
</tbody>
</table>
Appendix H: GYT Flyers

End of the year
GYT Clinics

Chlamydia Testing
Tuesday, December 10th
11a - 2p
Student Center Rm. 331

HIV Testing
Wednesday, December 11th
12p - 3p
Office of LGBTQ Resources

*Testing provided courtesy of the Lexington-Fayette County Public Health Department

SAFER SEX WEEK
February 11th - 14th

Valentines Day

HIV Testing
FREE, WALK-IN TESTING!
11th, 12th, 13th
4-6 PM

Love the Glove

GYT Clinic
FREE CHLAMYDIA TESTING!
Student Center Rm 331
Wednesday, 12th
11-2 PM

SEXperts
Peer Health Educators