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Comprehensive Sex Education, Religious Affiliated Organizations, and STD Knowledge among Young Adults

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Walden University

College of Health Professions

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Leslie M. Shaffer

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Walden University
2022

Abstract

Comprehensive Sex Education, Religious Affiliated Organizations, and STD Knowledge among Young Adults

by

Leslie M. Shaffer

MPH, Walden University 2013

BA, Malone University, 2006

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

Walden University

February 2022

Abstract

Every year there are approximately 20 million new cases of sexually transmitted diseases (STDs) in the United States, and half of these are among young adults. Stark County, Ohio recently experienced an increase in chlamydia, gonorrhea, and syphilis cases among 18- to 24-year-old individuals. Public health practitioners have since called for research regarding factors that affect STD knowledge and perceptions in this population. This cross-sectional study was guided by the social-ecological model and assessed the association between attendance at a religious-affiliated institution, access to comprehensive sex education, and STD knowledge. One hundred thirty-eight (n=138) participants, aged 18 to 24 years, were recruited and surveyed from three local agencies that provide STD testing and other sexual health services. Multiple linear regression, Spearman's Correlation, and independent-sample t tests were used to determine if STD knowledge score was affected by age, gender, access to comprehensive sex education, and attendance at a religious-affiliated university, college, and/or secondary school. The results of the study did not demonstrate a significant difference in STD knowledge scores between those who attended a religious-affiliated university, college, and/or secondary school versus those who did not attend one. However, there was a significant difference in STD knowledge scores between older participants compared to younger participants (ß = .323, p = .004). These findings may contribute to current STD prevention efforts and inform local community members and health professionals of the need for tailored and new STD interventions for the young adult age group. This could influence positive social change and reduce STD rates among young adults in Stark County, Ohio.

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Dedication

This dissertation is dedicated to several individuals: first, to my family; a group of individuals that define perseverance. To my mom and stepdad, for your love, care and sacrifice when I was younger and as I pursued my dreams to attend college. To my grandparents, cousins and Aunt for your support and encouragement growing up. To my sister Julie and my brother E.J. as well as my nieces and nephews. We have all experienced difficulties in our journeys, but we have always persevered. Please remember that it is always possible to accomplish your goals and dreams. If we support each other, we can conquer anything.

Finally, this dissertation project is dedicated to my sisters Erika and Jamie. Two amazing young women who were taken from this earth too soon. Thank you for showing true strength and perseverance in the trials you faced. I do hope you are smiling and are proud.

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Lastly, I would like to thank my Aunt Kim, who is no longer with us. When I was a child, my Aunt Kim once said to me "leave Bucyrus and don't come back." I have taken those words to heart and continue to explore new opportunities in new areas. That statement alone, has pushed me to reach my dreams.

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Chapter 1: Introduction to the Study

Background

Each year, approximately 20 million new cases of sexually transmitted diseases (STDs) are reported to the Centers for Disease Control and Prevention (CDC; 2017). Although millions of people infected with STDs are a great concern, it is even more alarming that over half of those new cases are from individuals between the ages of 15 to 24 (CDC, 2017). It is estimated that 1 in 4 sexually active girls and women (between the ages of 15 to 24) have had an STD at some point in time (CDC, 2017. It has been concluded that young adults and adolescents between the ages of 15 to 24 may have increased rates and prevalence of STDs due to many factors such as lack of STD prevention services and education (or inadequate services), financial reasons (inability to pay for the services), transportation barriers, clinical operating times and even embarrassment among their peers (CDC, 2017).

An STD is an infectious disease that can be passed from one individual to another through sexual contact (CDC, 2018). Many STDs have been identified in the United States, but the top three (spread through sexual contact) that are affecting those between 15 to 24 years of age include gonorrhea, chlamydia, and syphilis. According to the CDC (2017), annual surveillance shows that 15- to 24-year old's have the highest rates and reported cases of gonorrhea and chlamydia. It has been determined that even though young men and women are almost equally affected by STDs, women tend to suffer more consequences, especially long term (CDC, 2014).

This chapter includes a brief background of the issue of STDs nationally and within the target area. In this chapter, I will define the problem in Stark County, explain the purpose of this much-needed research and provide a review of the research questions that are being asked to complete the intended research. The chapter also includes a discussion of the assumptions, delimitations, limitations, and definitions of terms. Finally, I will discuss the overall impact this study may have on social change as well as implications for future research.

Problem Statement

Stark County, Ohio is a large metropolitan area with approximately 374,000 residents and it continues to grow (Ohio Department of Health, 2014). Stark County ranks 11th in the state of Ohio when referring to landmass; and seventh in population size out of the 88 Ohio counties (USA.com, 2019). In health rankings, Stark County ranks 49th in overall health outcomes and 44th in health factors (University of Wisconsin Population Health Institute, 2019). Stark County is not as diverse as larger counties in Ohio (such as Cuyahoga and Franklin Counties) but there is limited diversity in races and poverty levels. In Stark County, 22.4% of children under the age of 18 and 14.5% of adults are living at or below the poverty line (ODH, 2014). Also, 7.7% of residents are categorized as African American and 89.0% as Caucasian (ODH, 2014).

Gonorrhea and chlamydia are common STDs among young adults in Ohio and Stark County. In 2014, the ODH reported that chlamydia cases equaled 404.2 per 100,000, and gonorrhea cases equaled 169.3 per 100,000 cases compared to state or national stats here. In the latest STD surveillance report by the CDC (2017), gonorrhea,

chlamydia, and syphilis, have increased in 2016 and 2017 for both male and female individuals.

Though many studies have been conducted on religion and its association with STDs, there is a lack of information within the Stark County area that incorporates how comprehensive sex education, or lack thereof, and religiously affiliated organizations can affect the knowledge and perceptions of STDs among 18- to 24-year-olds; specifically, those who are heterosexual or homosexual. In the previous research studies that I reviewed, the focus was on only homosexuality (such as men who have sex with men) and how it relates to religion. Research must be conducted in this target area that compares STD rates at the local, state, and national levels. Not many studies have been conducted in Ohio regarding this topic and target population. In addition to evaluating how religiously affiliated organizations affect STD rates, I determined other risk factors associated with STDs among young adults.

Purpose of the Study

Each year, young adults and adolescents make up half of the new STD cases in the United States (CDC, 2014), but that does not convey the fact that these diseases are preventable, and many prevention strategies are made available in public health agencies. It is vital to the health of the young adult community that public health professionals continue assessing the local factors that influence the increase of STDs among that audience.

In this quantitative study, I assessed rates of STDs and measure the level of STD knowledge among young adults within Stark County, Ohio. I examined whether

knowledge levels are affected by the attendance of a religious-affiliated university, college, or secondary school and whether participants have been educated before the survey questionnaire.

Research Questions/Hypotheses

For this study, I investigated the following research questions and hypotheses. The independent and dependent variables are listed in this chapter but will be described further in Chapter 3.

Research Question 1 (RQ1): Are there differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County?

Null Hypothesis ($H_0$1): There are no differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County.

Alternative Hypothesis (H_a1): There are differences between the level of STD knowledge scores among participants who have attended religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County.

Research Question 2 (RQ2): Are there statistically significant differences in STD knowledge scores based on gender and age?

Null Hypothesis ($H_0$2): There are no differences in STD knowledge scores based on gender and age.

Alternative Hypothesis (H_a2): There are differences in STD knowledge scores based on gender and age; scores will be higher among 23-24-year-old, and scores will be higher among females' participants than male participants.

Research Question 3 (RQ3): Is there a significant association between STD knowledge scores and those who received comprehensive sex education?

Null Hypothesis ($H_0$3): There is no association between STD knowledge scores and those who received comprehensive sex education.

Alternative Hypothesis (H_a3): There is an association between STD knowledge scores and those who received comprehensive sex education.

Research Question 4 (RQ4): Does the attendance at a religious-affiliated university, college, or secondary school, age, gender, and those who received comprehensive sex education predict STD knowledge score?

Null Hypothesis ($H_0$4): Attendance at a religious-affiliated university, college, or secondary school, age, gender, and those who received comprehensive sex education do not predict STD knowledge score.

Alternative Hypothesis (H_a4): Attendance at a religious-affiliated university, college, or secondary school, age, gender, and those who received comprehensive sex education predict STD knowledge score.

Theoretical and Conceptual Framework

The ecological model, also referred to as the social-ecological model (Bronfenbrenner, 1979), is a framework widely used in public health to understand behavioral choices and influences. This model consists of two main concepts to aid in understanding human behavior. The first main concept, reciprocal causation, signifies that an individual's social environment (e.g., social norms and cultural practices) can have an impact and shape their behaviors (Edberg, 2007).

The second main concept indicates that there are five levels of influence on behavior: intrapersonal, interpersonal, institutional, community, and public policy. The intrapersonal level measures awareness of potential risks, attitudes, knowledge, and motivations, or lack thereof, and considers the biophysical components of a person and their developmental stage in life (Edberg, 2007). Interpersonal influences can include an individual's social groups, social patterns, and cultural beliefs that one has been introduced to or grown up in, as well as their social support among friends and family (Edberg, 2007). The institutional level measures how an individual's education level, school system, and even access to health services can have an impact on their behavioral choices (Edberg, 2007). The community level is like the institutional level, in that it evaluates how an individual's behavior is affected by relationships outside of the personal level. This level can include a person's relationship or association with community organizations such as public parks, transportation services, health services, farmers markets, grocery stores, and restaurants, housing services, and financial servicing (American College Health Association, 2016). The final level, public policy, takes a more

governmental approach by assessing how policies and laws at the local, state, and national levels can affect an individual's behavior choices. For this research study, I used this factor to determine what laws and policies affect opportunities for comprehensive sex education as well as sexual health services. I used the social-ecological model to examine how outside factors influenced the level of STD knowledge among participants within the Stark County community.

Nature of the Study

In this quantitative study, I used a cross-sectional survey of young adults aged 18 to 24 who were recruited from three local agencies that provide STD/HIV testing in Stark County, Ohio via Facebook posts and email recruitment from agency representatives. One of the recruitment sites was intended to be a religious-affiliated public health organization but due to COVID restrictions, I did not include this site. The other three are secular (nonreligious-affiliated) public health organizations. In addition, two of the three secular agencies are located near a religiously affiliated university and the others are located near a secular institution of higher learning.

The key variables for this study included STD knowledge scores (dependent variable), religious-affiliated university, college or secondary school, demographics, and those who received comprehensive sex education (independent variables). Religious-affiliated universities, colleges, or secondary schools can include local faith-based universities/colleges and private secondary (high school) organizations. I collected data through a cross-sectional electronic survey design through the Survey Monkey program. The survey was administered electronically to 138 participants within the three agencies

and target audience age group. I conducted the data analysis with SPSS and used descriptive statistics.

The data that I collected included factors that have been associated with and attributed to health issues and STD rates including ethnicity, race, education level, access to STD education, attendance at a religious-affiliated university, college, or secondary school, and STD testing survey. It has become apparent from previous research and local data reports that further research needs to be conducted in Ohio to understand the prevalence of STDS among 18 to 24 years and the value of promoting education programs involving comprehensive sex education.

Definitions

The special terms that I used throughout this document are included below.

Chlamydia: an STD that affects men and women but can cause serious harm to a female (CDC, 2017b)

Comprehensive sex education: sex education is provided to K-12 grades and includes a wide variety of topics included in sexual health learnings (Planned Parenthood, 2018)

Gonorrhea: an STD that affects men and women and causes more harm to the throat, rectum, and genitals of men and women alike (CDC, 2017b)

Religious-affiliated university, college, or secondary school: any educational organization with affiliation to a religion. These institutions strive for the intellectual, academic, and spiritual development of students.

STDs: diseases that are generally passed from person to person via sexual or intimate contact (CDC, 2018).

Syphilis: An STD that can affect men and women, lead to serious health issues, and is easily treated; it also has three stages of infection (CDC, 2017c).

Assumptions

I reviewed prior research to determine where there are gaps in the literature. Based on the research of STDs and the impact of religious affiliation (indicated in Chapter 2), I made the following assumptions.

1. Those participants who attended a religious-affiliated university, college, or secondary schools are more likely to have lower STD knowledge scores compared to those who did not attend a religious-affiliated university, college, or secondary school because they are more likely to receive abstinence-only education (Baker, Smith and Stoss, 2015). Therefore, young adults who have an affiliation with religious organizations have a higher probability of STD knowledge gaps.
2. I assumed that all participants sampled represented the target population.
3. Due to the anonymity and confidentiality of the data collection process, I assumed that all participants of the target audience would answer each question of the survey with honesty and to the best of their ability.

Scope and Delimitations

In this quantitative study, I measured the level of STD knowledge among young adults aged 18 to 24 years in Stark County, Ohio. The dependent variable was STD

knowledge and did not include actual STD testing results or HIV knowledge. The independent variables were limited to attendance of a religious-affiliated university, college, or secondary school, gender, age, and access to comprehensive sex education. I did not assess demographics such as socioeconomic status, sexual orientation, and marital status.

I recruited participants from three agencies: two local health departments and a secular health clinic (one that does not provide a religious-affiliated belief system in its services). One health department is near a Methodist-based university and is on the northeastern side of Stark County. The other health department is geographically located near one secular university and one religious-affiliated evangelical university. The other health agency is within walking distance from an evangelical university. Due to COVID restrictions at the time of recruitment, I posted the invitation to complete the anonymous electronic survey on social media outlets through the agency and email correspondence by agency representatives.

Limitations

Several limitations may have influenced the results of this study. The first limitation was the overall sample size. Due to the limited number of individuals receiving STD/HIV testing in the target population, the number of participants may have resulted in a sample size that limited statistical power. I selected three sites to increase the probability of obtaining at least 95% power. The second limitation was the sensitivity of the subject matter. There was an increased risk for historical bias among participants as well as unwillingness to answer all questions truthfully. By providing, a confidentiality

statement and ensuring that personal information would remain safe, I addressed this limitation within the research, but it could still have led to errors in self-reporting. The final limitation was the use of a proxy measure for STD infection. STD knowledge was measured as opposed to STD test results, so the dependent variable in this study may not have provided an accurate representation of the STD burden among young adults in Stark County.

Significance of the Study

Sexually active young adults and adolescents (ages of 15 to 24 years) are at high risk for STDs compared to other age groups (CDC, 2017). In recent years, the case rates of chlamydia, gonorrhea, and syphilis (and other STDs) have gradually increased among 15- to 24-year-olds nationally (CDC, 2017). The CDC (2017) stated that there was an 18.6% increase in gonorrhea cases, a 6.9% increase in chlamydia cases, and a 10.5% increase in syphilis cases between both men and women in the United States since 2016. This increase of STDs among the young adult population provides evidence that there is a need for more access to care, education, and an understanding as to what social and personal barriers are preventing the reduction of disease.

The CDC (2017) stated in its most recent surveillance report that many factors such as cultural influences, personal schedules, personal embarrassment, social opinions, and many more, can have an impact on the recent increase of STD rates of young adults. There is a need for more research to assess general STD knowledge among young adults as well as other factors such as religious affiliation and local comprehensive sex education programming. In this quantitative study, I addressed the gaps in the literature

by providing insight into why young adults make specific decisions about sexual health choices and the impact religious affiliation has on their overall knowledge of STDs. This research can be used to promote positive social change in Stark County by demonstrating the need for improved comprehensive sex education programs and tailoring to those who may have their STD knowledge impacted by religious affiliation. This can in turn lead to future policy changes in a conservative region, provide more availability for services, and address additional barriers among the young adult population.

Summary

Young adults' sexual behavior choices can have a long-lasting impact on their lives, whether it involves risky behaviors or proper sexual health education. Risky sexual behavior can be caused by individual choices as well as outside influences caused by peer pressure and specific policies. These outside influences can include family, friends, policies, religious affiliations, as well as attendance at schools instituting abstinence-only or comprehensive sex education. In this chapter, I provided a brief background of the problem of STDs among young adults in Stark County and the importance of examining factors that might result in lower STD knowledge and a higher risk for STD infection. In Chapter 2, I will provide a review of prior research on this topic, literature related to the theoretical framework, and review the independent variables examined.

Chapter 2: Review of Literature

Introduction

According to the CDC (2014), there are approximately 20 million new cases of STDs reported annually in the United States. This has proven to be a problem because half of these cases are made up of 15- to 24-year old's (CDC, 2014). Several factors should be considered when understanding STDs: various transmission methods, behavioral choices, the impact of laws and regulations, availability of health care, as well as the impact that friends, families, and institutions can have on risky choices/decisions.

In this chapter, I will discuss various studies that have been conducted on the topic of sexual health. This material is arranged by the five levels of influence of the social-ecological model. I chose the social-ecological model as the theoretical framework for this study due to its consideration of environmental factors as well as personal beliefs and choices. Many of the studies included a review of variables such as age, ethnicity/race, and geographical location.

Literature Search Strategy

Related research had been searched and identified through the Walden University library website. Keywords that were used for these searches included: *sexually transmitted diseases and college student; chlamydia, gonorrhea, syphilis, and young adults; parental views and STDs; comprehensive sex education in schools; and community and sex education, religion and sex education, and the United States.* The library staff also assisted in proper search techniques. The peer-reviewed scholarly research articles had been searched using the following Walden library databases:

Academic Complete, the Elton B. Stephens Company (EBSCO Host), PubMed (Public Medline), and the Educational Resources Information Center (ERIC). All literature was published between the years 2010-2021 and was searched on the relevancy of this study.

Sexually Transmitted Diseases-Gonorrhea, Chlamydia, and Syphilis

Throughout the United States, gonorrhea, chlamydia, and other STDs continue to have a negative impact on the population. Numerous studies have examined the connection between STDs and behavioral choices. One study conducted in the United States specifically investigated gonorrhea and chlamydia among sexual minority young adults between the ages of 18 to 26 (McRee et al., 2015). Researchers surveyed participants' access to health care, willingness to be tested for STDs, sexual activity if a health care provider diagnosed them and communicated that they had an STD and if they have completed a home-based STD test to diagnose themselves (McRee et al., 2015). It was discovered that most of the participants were insured, and women and gay men were more likely than bisexual men to use a home-based STD test system (McRee et al., 2015). Those who were concerned with the home-based system suggested it may not be as accurate as attending a clinic or their health care professional (McRee et al., 2015). The researchers concluded that if home-based tests are provided as an option, then the population needs to be further educated about their effectiveness and/or accuracy (McRee et al., 2015).

In the following paragraphs, epidemiological data involving gonorrhea, chlamydia, and syphilis is introduced. Data from Ohio has been presented to gain a better understanding of the target audience for this study.

Gonorrhea, as defined by the Centers for Disease Control and Prevention [CDC] (2015) is a sexually transmitted disease that can affect the throat, genitals, and rectum of both men and women. Gonorrhea can be spread from a pregnant mother to her baby in the childbirth process and spread through oral, vaginal, and anal sex (CDC, 2015). Gonorrhea is a common STD among teenagers and young adults. In 2015, there were 395,216 cases in the United States, which was a 13% increase from the year before (CDC, 2015). In Ohio, 2017 data showed that there was a total of 198.2 per 100,000 reported cases (total cases at 11,736) of gonorrhea among the 15 to 24 female age group and 214.9 per 100,000 (12,231 total cases) in the male age group of 15 to 24 (Division of STD Prevention, 2016).

The recent 2017 report of the CDC examined gonorrheal cases among 15- to 24-year-olds. The CDC (2019) stated that out of all regions, the south reported higher rates of gonorrhea cases among those age groups (men and women). From 2013 to 2017, there has been a slight increase in gonorrhea cases among men and women. The cases of gonorrhea among women between the ages of 15 to19 increased by 15.8% and 20.4; and by 13.1% and 27.4% of those between the ages of 20 to24 (CDC, 2019). For men, there were also increases of cases being between 15.2% and 44.8% for those ages of 15 to 19 and 12.6% and 55.2% among 20 to 24-year-old men (CDC, 2019).

Chlamydia, another common STD, also affects both men and women but can be more damaging to women. The CDC (2015) explained that many people who have chlamydia may show no symptoms but if they do, the symptoms will not appear until multiple weeks after contracting it. Thus, it can be easily spread if the individual with

chlamydia has multiple sex partners and is unaware of their status. This STD can also be spread through vaginal, oral, and anal sex. It can also be spread to a child through childbirth (CDC, 2015). If a woman has chlamydia and it is left untreated, it has the potential of causing an ectopic pregnancy (CDC, 2015). The CDC (2015) explained that an ectopic pregnancy is fatal because it occurs outside of the womb rather than within. The Ohio 2017 chlamydia cases reported among 15 to 24-year-olds was 711.4 per 100,000 for women (42.132 cases) and 338.3 per 100,000 for men; with 19.257 cases (Division of STD Prevention, 2016).

Nationally, chlamydia cases had increased 5.0% among 20 to 24-year-old in 2017 (CDC, 2019). The CDC (2019) stated that in 2017 15 to24-year-old made up 62.6% of all the nationally reported chlamydia cases in the United States From 2013 to 2017, the rates of chlamydia cases among women between the ages of 15 to 19 years of age overall increased by 6.4% and 10.9% among 20 to 24-year-olds (CDC, 2019). From 2013 to 2017 the number of chlamydia cases among men between the ages of 15 to 19 years increased 27.9% and 30.1% of those between the ages of 20to 24 (CDC, 2019).

In addition to ectopic pregnancies, LeFevre (2014) explained that undetected infections of chlamydia and gonorrhea could cause chronic pain in the pelvis and infertility. Newborn babies also suffer the consequences of these two STDs by developing chlamydial and/or gonococcal ophthalmia as well as neonatal chlamydial pneumonia (LeFevre, 2014). Both STDs can be asymptomatic which leads to a lack of detection. The infections then lead to pelvic inflammatory disease (PID) in women, and symptomatic urethritis in men (LeFevre, 2014).

Syphilis is another STD common in the United States, especially affecting individuals between the ages of 20 to 24. It is classified as a genital ulcerative disease that can be prevented and treated (Division of STD Prevention, 2016). If an infected individual goes untreated for a long period, they are at high risk for contracting and transmitting HIV (Division of STD Prevention, 2016). As with chlamydia, women can also be at risk for pregnancy complications-specifically complications that lead to the death of the fetus or a stillborn child (Division of STD Prevention, 2016).

Nationally, teenagers and young adults are strongly affected by this STD and there have been increased cases of primary and secondary syphilis. Primary syphilis or the primary stage of syphilis is the point in time where a person infected will notice the first sign of the disease, which is single and possibly multiple sores (CDC, 2017c). These sores can be found anywhere on the body, especially the genital areas, but primarily begin on the original infection site (CDC, 2017c). Secondary syphilis or the secondary stages leads to more signs of the illness such as fever, swollen lymph nodes, and skin rash; sores are still present but harden currently (CDC, 2017c). The CDC (2019) provided detailed data of cases and broke the data up into two age groups: 15 to 19 and 20 to 24. Among women, primary and secondary syphilis cases have increased by 68.4% for 15 to 19-year-old women and 14.7% for 20 to 24-year-old between the years 2013 to 2017 (CDC, 2019). For men, there was a 13.5% increase in syphilis rates from 2016 to 2017 for those between 15 to 19 years of age and a 7.0% increase for those between the ages of 20 to 24 (CDC, 2019).

Peterman et al. (2015) assessed the risk of contracting HIV among those individuals that were diagnosed with chlamydia, gonorrhea, and/or syphilis. After reviewing over 328,000 women in the database that had tested positive for an STD, the researchers concluded that those with a current or previous diagnosis of chlamydia, gonorrhea, and syphilis were at higher risk of contracting HIV (Peterman et al., 2015). When they are diagnosed, they must be educated about other future risks. Peterman et al. (2015) suggested that after STD diagnosis, women should be counseled about how they are at higher risk for contracting HIV and what can be done to prevent it from happening to them.

It is apparent within the literature that there are a multitude of issues with STDs among citizens of the United States, but it is increasingly alarming among the youth of the nation. For example, since 2009, there has been a steady increase of HIV infections among 13 to 29-year old's (at 21%) and it's proven to be higher among African Americans (Zanoni & Mayer, 2014). The CDC (2014) stated that over half of new cases of sexually transmitted diseases are affecting individuals between the ages of 15 to 24 years of age. Due to the magnitude of STD cases and the impact it has on the young adult and adult population, public health professionals have made it a priority to tackle this issue. Healthy People 2020, which prioritizes top health issues nationally, has listed sexual and reproductive health as a key target area to address in communities (Dunne et al., 2014). Specifically, Healthy People 2020 has stated on its website that the goal for sexually transmitted diseases is to increase overall access to services that provide reproductive care and focus on sexually transmitted disease prevention as well as

strengthen the promotion of community collaboration and healthy sexual behaviors (HealthPeople.gov, 2019). This demonstrates the need to continue the focus not only on sexually transmitted diseases but on education as well.

Social-Ecological Model

Research indicates that young adult sexual decision-making can be impacted by several factors including personal choices, lack of education, peer pressure, drug and alcohol use, lack of parental support, and governmental policies such as access to health care. When attempting to understand behavioral choices and general health problems, researchers have used theoretical frameworks to act as the foundation of their work. The use of theoretical frameworks is typically based on the study, the variables being reviewed, and what the researcher hopes to discover in the data collection and reporting processes. One theoretical framework that is often used in the public health arena is the social-ecological model (SEM). The SEM places its focus on two basic concepts: reciprocal causations and the five factors of influence (Edberg, 2007). Reciprocal causation assumes that an individual's social environment, such as cultural practices and social norms, can influence, shape, and impact a person's behavior (Edberg, 2007). The second concept breaks reciprocal causation down to five levels of influence. These levels of influence include intrapersonal, interpersonal, institutional, community, and public policy (Stokols, 1996).

The intrapersonal level suggests that inner beliefs alone can impact behavioral choices. This level measures knowledge, attitudes, motivations, biophysical components, developmental stages and uses the information to identify potential risks and explain why

certain negative or positive behaviors are entertained (Edberg, 2007). The second level of influence, interpersonal, takes a step away from the inner beliefs and assesses how peer and family behaviors influence an individual's decision-making process. Edberg (2007) explained that these peer groups can include social patterns, social groups, parental support, and cultural beliefs systems that are ingrained into the upbringing of an individual. The third level of the SEM considers the impact that institutions have on behavioral choices. Institutions can include school systems, community groups such as churches, local health facilities, or even governmental institutions that a child was raised in (Edberg, 2007). The community level is very similar to the institutional level as it can consider local groups or facilities that a person is a member of. Churches or places of worship can fall into this category as well as institutional depending on what type of programs are functioning through it and because individuals become a part of a culture in those settings. Other community groups can include local clubs, support groups, after-school programs, teams, etc. (Edberg, 2007). The final level of the SEM is public policy. Public policy entails any rules, regulations, laws, and/or influence of the government body within communities (Edberg, 2007). Public policies can play a significant role in health behaviors because if regulations prevent an individual from making positive or corrective choices, then their risks of disease can increase.

In previous STD-related research, the social-ecological model (SEM) was used in various ways. Baral et al. (2013) utilized the SEM when conducting their study on risks and risk context associated with epidemics of HIV. The researchers developed a model called the modified social-ecological model (MSEM) that focused additionally on risks of

HIV (Baral et al., 2013). The MSEM included all the main components of the SEM (individual, network, community, public policy) but an added stage to the model that focused primarily on the linkage between HIV and all the other factors originally developed for the social-ecological model (Baral et al., 2013). Within this stage, the researchers were able to assess how each factor played a role in determining the overall risk of HIV in the specific target population (Baral et al., 2013). After the two case studies were completed, the researchers concluded that considering all factors associated with an individual or populations' environment was vitally important when determining health issues such as epidemics (Baral et al., 2013). Modifying the SEM proved that adding factors such as risks should be used for future evaluations to provide better interventions (Baral et al., 2013).

The social-ecological model (SEM) was chosen for this study in Stark County due to its broad review of the five factors of influence. As with the arrangement of this literature review, I used the SEM to assess how the environment can shape and mold individuals' behaviors. The study tool that I had developed and implemented to collect data took into consideration each level of the SEM and had been tailored to collect such information from the study participants.

Adolescent and Young Adult Perceptions of STDs, Education, and Behavioral Choices

The transition from adolescence to the young adult stage can be both exciting and challenging in an individual's life. There are many positive steps including graduation, young adulthood, learning to drive, etc. There can also be many challenges during that journey. One of the great challenges in the adolescence stage is the development of healthy sexuality decisions (Vasilenko et al., 2015). It is considered a normative process but can reap many negative consequences including sexually transmitted disease risk. Vasilenko et al. (2015) explained that there are multidimensional domains of sexual behaviors that adolescents typically participate in oral sex and vaginal intercourse. These sexual behaviors are often practiced with or without the use of contraceptives and many encounters are non-romantic but more recreational (Vasilenko et al., 2015). Age and gender are commonly and frequently used as independent variables in research studies to determine if there are differences in sexual behavior choices. Vasilenko et al. (2015) has concluded that males are more likely to engage in risky sexual behaviors whereas females lean towards abstinence. This must be reviewed and interpreted with much professional caution because, in the 15-24 age group, females can be subject to risky sexual choices due to peer pressure, self-worth, and lack of education.

Socioeconomic status has proven to be a variable that is quite often reviewed in the public health sector. Socioeconomic status (SES) measures income, education, and social status (Thomer, 2013). Many times, SES plays a predictor role in determining health minorities and/or sexual health minorities. For example, research suggests that

sexual minority men and women have higher rates of obesity (women), mental health issues (men), alcohol abuse (women), and eating disorders (men) than their heterosexual counterparts (Thomer, 2013). Sexual minorities refer to those individuals that are attracted to individuals of their sex (Thomer, 2013). Previous research that was focused on the effects of SES was primarily studying sexual minorities. Further research needs to be completed on the effects of SES and those in the heterosexual category.

In a study conducted on young adults by Oswalt (2010) seven main themes were used to understand sexual health decision making: relational concerns on the college campus, general social pressures, and norms, levels of concern for risks associated with sexual decisions, the overall level of sexual experience, the developmental stage of the participants, whether physical gratification was sought out during sexual choices, and the sense of the participants future during and after college. Oswalt (2010) conducted a review of the literature covering these seven topics and then completed the study at a southern university. The Social Cognitive Theory (SCT) of behavior was utilized to develop survey questions and measure sexual choices and the reciprocal relationships between the environment, individual relationships, and choices of the individual (Oswalt, 2010).

In addition to the seven main topics, the researcher wanted to highlight self-efficacy as it relates to alcohol use, decision making, and communication between partners (Oswalt, 2010). Results indicated most of the participants regarded physical gratification as a reason why they would engage in sexual behaviors in college without considering the risks (Oswalt, 2010). Surprisingly any concern for risk of disease or

pregnancy did not influence their decision for sexual behaviors such as oral sex even when sexual health education on consequences were provided (Oswalt, 2010).

Alexander and Thornton (2015) focused on university students as well, but at a historically black university. In this study, the researchers measured the level of STD knowledge, and questions asked on this anonymous survey focused primarily on the participant's ability to identify STDs, complications, symptoms, and routes of transmission of STDs (Alexander & Thornton, 2015). Alexander and Thornton (2015) were able to gather surveys from 187 participants from freshman to seniors over two months at the Florida university on the topics as well as if any contraceptive methods were utilized and the number of sex partners, they had over years. The results demonstrated that many of those who participated in the survey did act responsibly when making decisions about sex and sexual partners. Alexander and Thornton (2015) discovered that half of the participants used condoms and 34% had just one sexual partner during the year. The researchers discovered that the upperclassman was more knowledgeable than the underclassman, but further researcher needs to be conducted to understand why. There was no information as to whether those individuals knew the sexual history of their partner. The researchers believed that it is important to provide further education on college campuses regarding safe sex and access to resources (Alexander & Thornton, 2015).

McCave et al. (2013) also conducted a study on sexual health behaviors and choices in another university but in the Mid-Atlantic region. The purpose was to determine choices and behaviors to improve program implementation and interventions at

the college level. The researchers utilized the National College Health Assessment to collect their data online (McCave et al., 2013). The main variables of primary focus included: if the participants received STI/STD education if the females had gynecological exams, whether participants received the HPV vaccination and/or received STD/STI testing if any form of sex was practiced in the past month (oral, anal, and vaginal) and if they used any type of contraceptive (McCave et al., 2013). It was discovered that the top three contraceptive methods that were mentioned in the survey by the participants included: the female birth control pill, male condoms, and the withdrawal method of the male; unfortunately, it appeared that more education needs to be provided regarding the withdrawal method and its association with unplanned pregnancy and STDs (McCave et al., 2013). As with comprehensive sex education, most of the participants stated that they received either STI/STD prevention education, sexual assault education, and/or pregnancy prevention methods; it was not confirmed how many years of education and when (McCave et al., 2013). The results were positive in that most college participants utilized a form of contraceptive methods but only half of the female participants responded in having a gynecological exam. Most respondents were sexually active over the year (McCave et al., 2013). The researchers suggested that all universities that have wellness programs conduct an evaluation of their students and the methods for disseminating sexual health information (McCave et al., 2013). This suggestion appears to benefit those public universities that already offer information and do not stigmatize sex education. Further research must be completed to understand how that

recommendation would work with private and religious-based universities or organizations that young adults attend that are limited with sexual education messaging.

Racial and Ethnic Differences in Sexual Risk Behaviors

Racial and ethnic differences among young adults have been researched extensively to determine how those factors contribute to health and sexual behaviors. For example, it is estimated that young black females between the ages of 15-24 years are more likely to contract gonorrhea and chlamydia than young white females (Pflieger et al., 2013). Young black males have higher rates of new STD infections including HIV, gonorrhea, and chlamydia than their young white male counterparts; in fact, they make up approximately 71% of all reported cases of the latter STDs mentioned (Lanier & Sutton, 2014). Researchers on this topic have discovered that young white females are more likely to engage in oral, vaginal, and anal sexual practices than young black females; they are more likely to engage in vaginal sex only (Pflieger et al., 2013). With the increase of risky sexual practices comes the lack of contraceptive use especially condoms. Pflieger et al. (2013) explain in past research that young males typically do not have the decision to use a condom during sex, but females ultimately decide and are most times more likely to engage in risky behaviors. Though the females may decide on the use of condoms, Pfliefger et al. (2013) discovered that young males typically do not like to use condoms anyway.

Hallum-Montes et al. (2016) discovered that in the southern regions of the U.S., there are great racial disparities among young people regarding sexual health. The young, adolescent African American population in the south makes up 60% of new cases of HIV

and has the highest rates of unintended birth rates among other ethnicities and geographical locations (Hallum-Montes et al., 2016). In their research, Hallum-Montes et al. (2016) interviewed over seventy-three African American youth in the south to gain a better understanding of the type of sexual health education they are or are not receiving and to highlight any disparities that are related to sexual health consequences. Youth who participated in the study explained that they have had sexual health and general health education, but it did not include prevention methods from diseases or pregnancies (Hallum-Montes et al., 2016). The youth, especially males, expressed their concern with retrieving appropriate sexual health education from their medical providers as well. They explained that they rarely sought out medical advice and they suffered from mistrust of providers and claimed that there were confidentiality issues (Hallum-Montes, et al., 2016). The researchers explain that within the African American culture especially among the adolescent group there is fear (and reality) of discrimination which leads to disparities (Hallum-Montes, et al., 2016).

Parental Involvement

Parental involvement in education can have a tremendous impact on adolescent and young adult choices and behaviors. This could be true for any type of comprehensive sex education program offered in the school systems and at home. Millner, et al. (2015) explained via the United Nations Statistical Division, that out of all the more industrialized countries across the globe, that the U.S. ranks the worst (number one) when it comes to teen and adolescent pregnancies between the ages of 15 and 24. These unintended pregnancies are ultimately a consequence of unprotected sexual encounters,

but the question remains: what other forces or dynamics are causing these pregnancies and sexually transmitted disease rates?

In England, researchers sought to understand whether family factors and influence had any impact on risky sexual behavior. The researchers produced and initiated a longitudinal study that focused on disadvantaged youth in England, between the ages of 13-15 (Bonell et al., 2014). Though this age group is not within direct linkage with the target audience of this study to be conducted in Stark County, Ohio, its intentions can have an impact on how young adults perceive sexual health education and their behavioral choices leading up to their eighteenth year of life. Bonell et al. (2014) produced self-reported questionnaires, which were either completed at a site, read out loud to them (to prevent illiterate individuals from participating), or by telephone over 9 months. The questions that were asked of the students focused on the type of home they were residing in (single or multiple parent home), whether their parents cared about their success at school as well as the communication level between teen and parents, and the participants overall sexual practices (Bonell et al., 2014).

The results of the study showed that disadvantaged youth; particularly females, that had both biological parents, were at less risk of risky sexual behaviors and teen pregnancies (Bonell et al., 2014). Having both parents at home demonstrated a strong family environment. It also showed that females who had both parents, as well as a strong relationship with their mothers, led to open communication and females insisting on the use of contraceptives during sexual practices (Bonell et al., 2014). Though the results easily defined success within the female population, this study showed no success with

men being more responsible having the same two-parent dynamics did not increase contraceptive use among men over the time frame of the longitudinal study.

Equally important when studying young adults and teenagers about their parental interaction to sexual health behaviors are understanding the parents' views on sex education in schools. Millner et al. (2015) investigated parental attitudes (of those living in Alabama) as it relates to sex education in their school systems. The area in Mobile, Alabama, where their research took place, was primarily conservative and an assumption could easily be made that that region would only support abstinence-only education.

Millner et al. (2015) asked the parents a series of questions that revolved around their level of knowledge as it pertains to different forms of sex (oral, anal, or vaginal intercourse), the transmission of sexually transmitted diseases, communication between young men and women and sexual interaction, when the best time to have sex is (marriage, out of high school, etc.), peer pressure, as well as general demographics. The outcomes for this conservative region proved to be very beneficial. A few of the parents who completed the survey supported the idea of abstinence education (81% of respondents) but almost all the parents (98.3 % and 98.8% respectfully) agreed that the school systems should include comprehensive sex education highlighting STDs and how to respond to rape and sexual assault (Millner et al., 2015). This study demonstrated that the promotion of sexual health education can be accomplished but parents should be involved with decision making. Including them as stakeholders demonstrate the willingness to work alongside them and that their opinion on their child's education is valued.

Kantor and Levitz (2017) took a different approach by examining parents' views on sex education in the school systems with a focus on democratic versus republican views. The total number of participants that completed the ninety-one-question survey equaled 1, 592 (Kantor & Levitz, 2017). Kantor and Levitz (2017) described the choices on the political questions as a strong democrat, strong republican, independent, undecided, not a strong republican, not a strong democrat, and leaning towards republican or democrat. More individuals recorded the Democratic Party (20% more) than the Republican Party (Kantor & Levitz, 2017). All individuals were asked the same questions and provided the same survey. The questions additionally consisted of seven major sexual health topics such as different birth control methods, abstinence education, sexual orientation, STDs, having healthy relationships, and puberty (Kantor & Levitz, 2017). The results from this study demonstrated that many democrats were women and there were no significant differences between political party and promotion of sex education in schools (Kantor & Levitz, 2017). Only a small percentage of participants believed that sex education should not be taught in the school systems compared to the majority. Most participants believed that all seven topics should be taught in both high school and middle school (Kantor & Levitz, 2017). This research is important to public health and the study of comprehensive sex education because it has laid the foundation of including political affiliations within general research. Though the study had a relatively large sample size for the location, to further grasp the differing views on sex education between political parties, a similar study should be completed in almost every state. Geographic location and the cultures of states could prove to have differing views.

Religious Impact on Sexual Education

Religion or religious associations is another factor that can potentially influence STD rates as well the level of STD prevention knowledge attained by young adults. Baker et al. (2015) explain that communities and/or governments that are influenced by religiosity can often have a significant impact on sex education and sexual health policies. These communities are referred to as moral communities (Baker et al., 2015) and they frequently support abstinence-only education rather than comprehensive sex education. Kappe (2016) explains that those teenagers and young adults who live in a religious-based environment tend to have higher pregnancy rates and that the religious community can quite frequently have an impact on the overall availability of different contraceptive methods. Young adults and teenagers living in this environment are also held accountable for sexual behavior with tougher restrictions, whether in the family environment or the community (Kappe, 2016).

Within high schools as well as colleges/university settings where religious beliefs are a key component of education, institutions will many times promote abstinence or virginity pledging. Paik et al. (2016) describe the pledging process as personal and public declarations to wait until marriage to have sex or to remain abstinent. Paik et al. (2016) examined whether this type of pledging had unintended consequences such as increased STDs, specifically HPV among females, and unintended pregnancies at a young age. The researchers reviewed data from the National Longitudinal Study of Adolescent to Adult Health (Paik et al., 2016). Abstinence pledgers are likely to eventually break their pledges and are less likely to use condoms or contraceptives versus the non-pledgers (Paik et al.,

2016). The reasons for this are not completely known except for the fact that many religious institutions tend to disregard contraceptive education because it is assumed that teenagers and young adults will wait until marriage to engage in any type of sexual behavior. Paik, et al. (2016) explains that there are three main beliefs of abstinence-only programs: (1) waiting until marriage to practice sexual behaviors, (2) the teaching that contraceptive is ineffective, therefore it is vital to wait until marriage to have sex and start a family, and (3) the promotion of the biblical definition and/or expectations of marriage. This is the reason why many young adults and teenagers who have pledged and broken the pledges have higher risks of STDs and unintended pregnancies. At the end of the research, Paik et al. (2016) confirmed that female pledge breakers were more at risk for HPV and pregnancy because they are not as prepared as non-pledgers who do receive comprehensive sex education involving behavioral consequences and sexually transmitted diseases.

In the heart of southern U.S. where the first abstinence pledge program called True Love Waits was implemented, researchers) surveyed over 150 young adults that were part of the Southern Baptist community (Rosenbaum & Weathersbee, 2013). The purpose of this study was to grasp a better understanding of how many newly married young adults broke their abstinence pledges and participated in premarital sex. The revelation of sources of sex education from the survey participants appeared to be mostly from the churches and parents. Most of the participants revealed that sex education was provided by schools in Junior High and High School but were not cited as providing education about spiritual and emotional factors of sex, abstinence, and ethics in sex as

well dating and choosing the right mate (Rosenbaum & Weathersbee, 2013). Parents were more responsible for ethical considerations in sexual acts/behaviors, dating and mate choosing as well as life goals and abstaining from sex (Rosenbaum & Weathersbee, 2013). Churches demonstrated to be the top sources of abstinence and virginity, as well as the spiritual and emotional factors of sexual practices (Rosenbaum & Weathersbee, 2013). Though most of the respondents did go through the abstinence pledging, over 70% of the survey respondents admitted to vaginal and/or oral premarital sex, the highest among male participants (Rosenbaum & Weathersbee, 2013).

Community Education

Communities are all around us. They are what individuals become members of and dwell in. The community where an individual(s) life can impact many facets of their lives including health and behavioral choices. The community involves the tangible and nontangible aspects. For young adults, what the community provides and how the community responds to certain issues, especially sexual health topics, can greatly impact behavioral choices and knowledge.

Paschal et al. (2011) produced a study on the local health department, an important community organization, and its role in providing sexually transmitted disease programs and testing. The researchers sought to assess surveillance, patterns of STDs, barriers that can affect proper surveillance, and education that is provided to the community (Paschal et al., 2011). Local health departments (LHD) take on a great deal of responsibility when it comes to providing surveillance and overall public health response. The LHD is funded by the government and grants. It can be challenging for an LHD to

offer all programs in communities in need. In this study the data was collected in Kansas from the LHD's in four ways: site visits to each participating LHD, through electronic questionnaires, STD reports collected from the state health department (all LHD's must submit data to the State) and information collected from their local data management systems of patients and billing (Paschal et al., 2011). All six of the participating health departments provided STD testing/screenings and met guidelines of the CDC Sexually Transmitted Diseases Treatment Guidelines (Paschal et al., 2011). One main issue discovered when conducting site visits and completing interviews was that many of the LHD's lacked a standardized method of collecting information from clients (Paschal et al., 2011). Local health departments play a pivotal role in providing in-expensive services to community members and education. The researchers suggested that for the LHD's to function properly they needed to have more state support (funding, etc.), a way to standardize data collection from clients, offer further staff training, develop initiatives more targeted to the population, and develop regional efforts between university professionals and local health agencies (Paschal et al., 2011).

Depending on political agendas and funding that is provided, it has become a consistent conversation that abstinence-only programs are offered or should be required in school systems. Out of the 50 states, only 22 (along with Washington D.C.) require a school-based sexual education program (Gardner, 2015). Gardner (2015) completed an exploratory study that assessed and examined abstinence-only programs in U.S. schools. One-third of the schools only provided abstinence education. Gardner (2015) interviewed a total of fifteen college students for up to an hour over topics such as sex education

experiences, abstinence-only education experiences, and requested their views of each. The researcher discovered that the students did not have a completely positive view of abstinence-only education but did highlight that the information about STDs and abstinence, in general, is positive (Gardner, 2015). The participants suggested sex education that is provided should cover more modern-day topics like safe sex, healthy sexual experiences, and sexual activity that can be enjoyed rather than always having sex sound negative and degrading (Gardner, 2015). Talking negatively about sexual health only leads teenagers and young adults to a path where there is no open communication.

Dudley et al. (2014) took a different approach in understanding where adolescents receive sexual health education in the community by interviewing 32 teen mothers between the ages of 12-18. There are several different sources identified where young mothers and teenagers, in general, can learn about sex and STDs, these include schools attended, family members, friends/peers, and even their health care service providers (Dudley et al., 2014). In this study, it was discovered that young mothers often felt uncomfortable discussing sexual health issues with their parents, they lived in a one-parent household, their parents were abusive, and/or they came from a family where their parents were teenaged themselves (Dudley et al., 2014). When asked about their experience with school-based sex education programs and health care providers, many of the participants explained that though they received sex education in high school, they started having sexual encounters in middle school and the sex education program was not displayed as important as other school subjects (Dudley et al., 2014). The participants even mentioned that they were too embarrassed or afraid to talk about sex with their

health care providers in fear that the physicians and/or nurses would share all that information with their parents (Dudley et al., 2014).

The final component of this research study reviewed how friends or peers of the 32 participants affected their sexual choices and behaviors. Many of the participants explained that they learned a lot of information (whether valid or invalid information) from their peers and felt more compelled to engage in sexual behaviors due to peer pressure (Dudley et al., 2014). It was also highlighted that many of the mothers did not learn about contraceptives or safe sex from their peers or sexual partners because many times, the partners did not want to use contraceptives, so information or a discussion was never introduced (Dudley et al., 2014). This then led to unintended consequences. In addition to all the sources of information introduced, many of the study participants explained that they learned a lot about sex from sexual experience as well a television and movies (Dudley et al., 2014). The battle of whether abstinence-only education is better versus comprehensive sex education continues to go on but as Dudley, et al. (2014) explained, to reduce any rate of STDs or pregnancy, more research and evidence-based programs should be introduced.

Marcell et al. (2013) examined how young adult males receive contraceptive education. The researchers reviewed how a short sexual prevention curriculum improved and promoted condom usage among the predominantly black participants. There were a total of 197 young black men between the ages of 16-24 that participated in three different sixty-minute sexual health curriculums (Marcell et al., 2013). Utilizing the quasi-experimental method, the researchers divided the participants up into the

intervention and a control group; with pretest and posttest analysis (Marcell et al., 2013). In the first sessions, the surveys were provided, and data collected included: general demographics, overall attitudes, and beliefs about condom usage, as well as knowledge of sexually transmitted diseases-after the pretest survey, the individuals that received the intervention sat in a one-hour education lesson (Marcell et al., 2013). After three months each participant was followed up and given a telephone survey essentially assessing the participant's knowledge and behaviors as one done before the intervention session (Marcell et al., 2013). The results concluded that the level of knowledge and attitudes of the control group after the pretest and posttest remained the same (Marcell et al., 2013). The intervention group participants did increase knowledge but their views of using condoms during sex did not change. Though they received more information, they still chose to practice their sexual behaviors the same way they had before the intervention (Marcell et al., 2013). STD testing did increase among the intervention population, but further information needs to be provided about all the health care resources in that area.

Government and Policy Roles in Sexual Health

Sexual health education has been provided to citizens of the U.S. since 1913 (Elia & Tokunaga, 2015). This pioneering movement during the First World War provided education consisting of hygiene practices, prevention of disease, and the importance of sexual morality (Elia & Tokunaga, 2015). Throughout history, sexual health education became a controversial topic among political and religious leaders resulting in many different sexual health programs being offered. Sexually transmitted or venereal diseases became an additional topic as well as religious beliefs (Elia & Tokunaga, 2015). Eighty-

three years later, the government put a new sexual health education law/policy in place: 1996 Section 510 of Title V, which is a component in the Social Security Act (Lerner & Hawkins, 2016). This new policy only supports the promotion of abstinence-only education in the public school system (Lerner & Hawkins, 2016). This policy was part of the new welfare reform established by Congress and it provided a substantial grant of 250 million dollars for the abstinence programming over a five-year cycle (Lerner & Hawkins, 2016). If states wanted to request any of the funding for their programming the states were prohibited from included contraceptive method education in the teachings, except for any statistics on the failure of the contraceptive methods (Lerner & Hawkins, 2016).

Throughout republican administrations in the U.S., many states accepted the Title V funding that was provided. In 2009, the Obama administration shifted the availability of funding due to data that demonstrated the decline of states using abstinence education because of its inability to lower STD and teen pregnancy rates (Elia & Tokunaga, 2015). There is no national curriculum for sex education but there are standards that are put in place. This results in greater responsibility among states and schools to provide the appropriate sex education curriculum to their constituency (Elia & Tokunaga, 2015).

Summary

Sexual health and the contraction of STDs remain a consistent public health threat in the U.S., particularly among the youth and young adult population. There is a vast amount of prior research that has reviewed the different types of sexual health education options that are available as well as the assessment of behaviors and opinions among the

youth. This research focused on young adults and how religious affiliations can play a role in the level of knowledge among both males and females. In the past, much of the research that did focus on the religious component only placed attention on those in the homosexual category and most men who have sex with men. This literature review has considered all factors associated with sexual behavior and it has demonstrated that religious affiliations play a pivotal role in education that is attained.

There was one theoretical framework introduced that is being utilized as a foundational guide within this study. The social-ecological model considers five levels of influence that can impact an individual's choices. These five levels of influence include intrapersonal, interpersonal, institutional, community, and public policy. This model will be used to assess the level of STD knowledge and factors affecting sexual health educational attainment among 18-24-year-olds who attend four different STD clinics (one being a religious-affiliated clinic). In the next chapter, research methods will be further addressed as well as the data collection process, variables, and analysis.

Chapter 3: Research Method

Introduction

The purpose of this research study was to assess the level of STD knowledge among young adults in Stark County, Ohio as well as overall STD rates. In addition, I investigated whether attendance at a religious-affiliated university, college and/or secondary school and the presence or absence of comprehensive sex education had an impact on overall STD knowledge among young adults between the ages of 18 to 24. Prior research has proven that STD rates greatly increase between the ages of 15 to 24 and many programs have been developed to decrease risk. Prior research has also demonstrated that many factors including parental involvement, availability of resources (such as education), and policies have an impact on the level of knowledge among the young adult population and choices they make in terms of sexual health practices.

In this research study, all the factors that were mentioned were included in the survey design, but the additional focus was placed on the impact religious affiliation has on young adult sexual health decisions. I address in this chapter a brief background of the research design, the rationale, ethical considerations, and the overall methodology of the study.

Research Design and Rationale

Inthis quantitative study, a cross-sectional research design was used to best answer and measure the research questions. The cross-sectional research design was the most efficient for this study because the data was collected at a specific point in time using an electronic survey method. This design measured the level of knowledge of the

target audience and use numerical values to conduct a statistical analysis of whether there was a significant difference between those who attended a religious-affiliated university, college, and/or secondary school and those who did not. The dependent variable for the study was the STD knowledge scores of the participants. In addition, three independent variables were measured: gender, age, access to comprehensive sex education, and attendance or lack of attendance at a religious-affiliated university, college and/or secondary school.

The use of an electronic survey, using the Survey Monkey application, was the most appropriate given the nature of the study and the amount of time it took to collect the data. The electronic survey had been used to maintain confidentiality. It is a common method that had been used in prior research about STD knowledge. Recruitment of participants occurred through three different public health agencies that provide STD testing and sexual health education. Permission was granted by the administration from each agency before reaching out to participants. Participants were given a consent form that was included before they continued to survey completion and a statement regarding the purpose of the research. To maintain confidentiality and to expedite data collection, the electronic format was the best scenario for this study. Due to COVID-19 restrictions, recruitment for participants did not occur in-person but electronically through social media avenues.

Methodology

Population

In the most recent U.S. Census report of Ohio, the estimated total population for 2018 was 11,689,442 (United States Census Bureau, 2019a). The median age of Ohio residents was 39.3 according to the U.S. Census report from a 5-year estimate of the American Community Survey (U.S. Census Bureau, 2019b). Approximately 5,686,081 residents in Ohio are males and 5,923,675 are females (U. S. Census Bureau, 2019b).

Stark County is one of the larger counties of Ohio. My review of the2010 Census report estimated that 15 to 19-year-olds make up 7.0% (26,408) of the population and 20 to 24-year-olds make up 5.9% (22,200) of the population; this is out of a total estimated population of 375,586 (U. S. Census Bureau, 2019c). The total population of male young adults between the ages of 15 to 24 in Stark County is estimated at 24,576 and female young adults at 24,032 (U. S. Census Bureau, 2019c). The U.S. Census report breaks down race into multiple categories such as one race, two or more races, or race alone with multiple races (U. S. Census Bureau, 2019c). In Stark County, the largest race population is White at 90.8%, followed by Black or African American at 9.1%, Asian at 1.0%, American Indian at 0.9%, and Native Hawaiian and Other Pacific Islander at 0.1%; other races came in at 0.6% (U. S. Census Bureau, 2019c). Approximately 14% of the population lived at or below the poverty level (U. S. Census Bureau, 2019c). Educational attainment was also recorded by the census report. In 2000, it was reported that in the population of 18 to 24-year-olds of both sexes, approximately 1,906 completed a bachelor's degree or higher, 10,585 completed some college or an associate degree,

11,381 completed high school or equivalency such as a GED, and 7,507 did not complete high school (U. S. Census Bureau, 2019c).

For this study, I focused on young adults, both male and female, between the ages of 18 to 24 from Stark County. Though education level was assessed and requested in the demographic portion of the survey, it was not the study's sole focus. However, access to comprehensive sex education is highlighted with other variables. Further information about the study sample is detailed below.

Sampling and Sampling Procedure

The sample for this study was a total of 138 participants in Stark County, Ohio. These participants were between the ages of 18 to 24 and included both men and women. Participants were recruited from three agencies which include: Planned Parenthood of Stark County, the Alliance City Health Department (ACHD), and the Canton City Health Department. Each agency provides STD testing, counseling, and family planning services within the jurisdiction. All three agencies are located near religious-affiliated organizations such as universities and/or secondary schools.

Each participant voluntarily completed an electronic survey through the program Survey Monkey. Survey Monkey allows survey creators to provide an informed consent form for research. This informed consent document was included in the survey and was provided before completing the questions. If the informed consent was not signed or agreed to, the participants could not continue in the survey process. To be eligible for the survey, participants needed to be between the ages of 18 to 24. They could be both male and female. Before the survey was administered, the participants were provided a half

sheet of information detailing the process of completing the survey. To reduce the risk of selection bias, I did not know the names of the participants, and the survey was completed anonymously by accessing a survey link from the participant's personal computer.

The number of participants required for this study were estimated by using the G*Power 3.1.9.2 program (2014). This study included four research questions with four total predictors as they relate to STD knowledge. The optimum sample size had been calculated with two power calculations within the G*Power program. The first calculation for multiple linear regression included f test, four total predictors and four test predictors, and a priori analysis, and the linear multiple regression: fixed model (G*Power 3.1.9.2, 2014). The total sample size that had been calculated was 129 with an actual power of 95%. A second calculation was completed for independent samples *t* test using the *t*-test correlation with one-tail and no predictors. The total sample size calculated was 111 with an actual power of 95%. Based on these calculations, a minimum sample size of 130 participants needed to be obtained to ensure enough statistical power to answer the research questions.

Procedures for Recruitment

The recruitment process for this study had to shift due to the COVID-19 pandemic restrictions that were enforced during the original study implementation. The original plan had four total sites (agencies) that were going to assist in the recruitment and advertisement of the study. The fourth site decided to back out on the commitment so three sites ended up assisting. Recruitment was to occur in-person with fliers, etc. but

due to restrictions, all recruitment procedures were conducted via social media (such as Facebook) and via email, depending on the desired choice of the participating agencies. Permission was attained from all three sites to post virtual fliers and a survey link on their social media pages. Participants did not receive incentives for completing the virtual survey even though that was the original intention if recruitment was conducted in person.

Once the participants chose to continue with the survey, they completed an informed consent through Survey Monkey. Participants had the option of backing out of the survey at any time. All surveys were anonymous, and participants did not have to report to their health agencies about whether it was completed or not. Survey results were sent directly to my secured Survey Monkey account for analysis.

Data Collection

Data were collected in the late winter, early spring of 2020 when university classes were still in session. The original plan was to collect data in 2019 but plans were delayed due to the pandemic. Participants were determined by meeting the target population criteria such as clients or future clients of the three designated health clinics and ages 18 to 24. To ensure confidentiality I did not know who was completing the survey; participants remained anonymous. Originally, I aimed to recruit participants during their routine or first-time visits at one of the three selected agencies. The participants would have been provided an iPad or access to a computer to complete the electronic survey while waiting at their visits. Due to the COVID-19 pandemic, the data collection process shifted to solely recruiting participants via electronic means such as

through social media and email correspondence. I received all the completed surveys through my secured Survey Monkey account. Due to the anonymity of the survey, electronic informed consent was obtained before the survey could be completed. Nonetheless, participants were introduced to the rights they inherit prior to completing the survey on the first page. The survey was voluntary and could be terminated at any time without retribution. The privacy statement from Survey Monkey was also provided to each participant to ensure them that their information was protected. The Survey Monkey privacy statement provided information as to participants' rights and contact information if they had questions for the agency.

Overall response rate could have been an issue with this type of survey and topic. Edmonds and Kennedy (2017) explain that often with external surveys, the response rate can be very low (15%-20%) or even lower due to the limited time of the researcher to collect information and participants' willingness to complete it. To alleviate any such issues with my time and response rate, the survey was provided electronically. The participant rate exceeded the minimum target rate.

Instrumentation and Operationalization of Constructs

The electronic survey instrument had been designed and created on Survey Monkey. The survey questionnaire (see Appendix A) consisted of 28 questions and was completed by the participants during the months of February through April of 2020. It took participants approximately 15 to 20 minutes to complete the survey. The questions in this survey had been adapted from the Youth Behavioral Risk Factor Surveillance and from a questionnaire that was developed by an unnamed Fresno University student (n.d.).

I developed some of the questions. A pretest was provided and completed by colleagues of mine at the University of Mount Union and local community members. Approximately five individuals completed the survey to review its accuracy, readability level, and flow of the questions. The time length to complete the survey was assessed by a pre-test. This was vital to respecting the participant's time. The independent variables included sex (male or female), age (18-24), education attainment, attendance at a religious-affiliated university, college, or secondary school as it pertains to education, and access to comprehensive sex education.

Part I of the survey collected basic demographic information to assess the age, sex, race, and education level of the participants. Part II of the survey covered questions regarding sexual health education from various entities. The participants had two options to choose from; "yes" and "no," as well as any necessary follow-up questions to assess reasons for education or lack of education. The intent was to determine if the participants have had any type of sex education and if attendance at a religious-affiliated university, college, or secondary school had an impact. The research was also attempted to determine if and where they received education will have an impact on the level of their sexual health knowledge in the remainder of the survey. These responses have been measured and calculated with a total score from each responding participant. In the sex education category, there were a total of eight questions that asked about initial education and then provided an opportunity for the participants to select options. These questions pertained to whether the participants had received sexual health, sexually transmitted disease, and contraceptive education within the school, community, home, or attendance

at a religious-affiliated university, college, or secondary school setting. The questions were scored on a point system like the sexual health knowledge section. All “no” responses received a 0 and all “yes responses will receive a 1 (this includes questions 6, 8, 10, and 12). For questions 7, 9, 11, and 13, these were only answered if the participants answered “yes” for questions 6, 8, 10 and 12. For all selections made that did not include “abstinence,” participants received 1 point for each. If they selected “abstinence” they did not receive a point. It is assumed that participants who have a higher score will demonstrate that they have more sexual health knowledge than a person with a lower score.

All calculations have been completed using SPSS. Comprehensive sex education scores had been calculated separately from overall STD knowledge. Spearman’s Correlation was completed when analyzing the data to determine if there was a correlation between the education received and knowledge scores from the survey instrument. It had been assumed that lower scores would play a greater role in the analysis because this research is attempting to prove that those who are members of a religiously affiliated organization or family have less knowledge of STDs compared to those who are not religiously affiliated. Descriptive statistics and graphs have been performed to determine if there is a difference in age, sex, educational level, and race by the level of STD knowledge.

The dependent variable was the level of STD knowledge, and it was measured with 15 questions regarding STDs and prevention (Part III of the survey tool). The STD

knowledge portion was scored based on the scoring method developed by Jaworski and Carey (2007). These two researchers developed a scoring system for True and False questions and based their point system on the number of questions as well as incorrect and correct answers. As is noticed in the attached survey (Appendix A), the participants have three options for answering the questions: True, False, and don't know. To score this section as was described, every correct answer was awarded 1 point and incorrect answers were recorded as a 0. The option of "don't know" was also recorded as zero because it was still incorrect. The total score ranged from 0-15 and therefore it was considered a continuous variable.

The STD knowledge questions were random to measure how much the participants know and what myths they believe. Some questions were developed from the American Sexual Health Association (2019) website because the organizations provided a list of common sexually transmitted disease myths. If individuals did not receive proper comprehensive sexual health education, it was assumed that many of the myths were believed.

Data Analysis Plan

The data collected for this study was exported from Survey Monkey and analyzed using SPSS. The demographics that were collected were presented using frequency tables. Chi-square was used to determine whether there is a relationship between those demographics and STD knowledge. Data cleaning, which is referred to as the process of identifying any errors within the data collected, was initiated when all data was collected (MacInnes, 2017). When the data was exported from Survey Monkey to SPSS, the

researcher assessed all information to determine if there were any inconsistencies. Inconsistencies could include failure to answer questions, individuals not being within the target age, etc. Problematic data was identified and inspected to determine if any errors can be corrected. Multiple linear regression with an *f* and independent samples t-test was used to determine the relationship between the independent variables and STD knowledge scores. Multicollinearity was also considered in this study. MacInnes (2017) describes multicollinearity as an issue that can arise if the independent variables in the study correlate highly with one another and a regression variation in the dependent variable (STD knowledge) with each independent variable cannot not be distinguished. This research study aimed to address the four main research questions, which were described in Chapter 1 and include:

Research Question (RQ1): Are there differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County?

> Null Hypothesis ($H_0$1): There are no differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County.
>
> Alternative Hypothesis (H_a1): There are differences between the level of STD knowledge scores among participants who have attended a religious-affiliated

university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County.

Research Question 2 (RQ2): Are there statistically significant differences in STD knowledge scores based on gender and age?

Null Hypothesis ($H_0$2): There are no differences in STD knowledge scores based on gender and age.

Alternative Hypothesis (H_a2): There are differences in STD knowledge scores; scores will be higher among 23-24-year-old, and scores will be higher among females' participants than male participants.

Research Question 3 (RQ3)*:* Is there a significant association between STD knowledge scores and those who received comprehensive sex education?

Null Hypothesis ($H_0$3): There is no association between STD knowledge scores and those who received comprehensive sex education.

Alternative Hypothesis (H~~a~~3): There is an association between STD knowledge scores and those who received comprehensive sex education.

Research Question 4 (RQ4)*:* Does the attendance of religious-affiliated universities, college or secondary schools, age, gender, and access to comprehensive sex education predict STD knowledge score?

Null Hypothesis ($H_0$4): Attending religious-affiliated universities, college or secondary schools, age, gender, and those who received comprehensive sex education do not predict STD knowledge score.

Alternative Hypothesis (H~~a~~4): Attending religious-affiliated universities, college or secondary schools, age, gender, and those who received comprehensive sex education predict STD knowledge score.

Threats to Validity

The validity, as explained by Edmonds and Kennedy (2017), refers to the ability of the overall outcome of the research to answer the research questions developed for the study. Quantitative research includes four types of validity including the external, internal, statistical conclusion, and construct (Edmonds & Kennedy, 2017). The two threats of validity that were considered are external and internal validity. Internal validity focuses on the relationship between the outcome and the independent variable and external validity focuses on the overall results and the generalizability to the target population, settings, and overall outcomes (Edmonds & Kennedy, 2017). Threats to internal validity to consider in this research study included selection bias. Selection bias could occur if the researcher does not use proper or systematic techniques when recruiting at the different locations (Edmonds & Kennedy, 2017). To prevent selection bias from occurring, recruitment occurred through social media venues and anyone who visited the site had the opportunity to participants; but if they did not meet the target audience requirements, they were removed from the study. Agencies did not have to complete in-person recruitment, which also aided in reducing the risk of selection bias.

Potential threats of external validity could include sample size, sample characteristics, and outcome variations (Edmonds & Kennedy, 2017). In this research,

threats to sample size and sample characteristics can occur if the sample doesn't represent the target population, the sample size is too small to draw accurate conclusions, and if the sample population does not represent the assigned variables. To reduce threats to validity, random sampling can be applied if appropriate and the proper power analysis is used. Random sampling was not possible for this study, but anonymity was used to reduce the threats. This study included detailed directions for recruitment, and all surveys remained anonymous. An additional threat to validity is outcome variations. Outcome variations can involve additional outcomes being observed compared to the expected outcomes of the study. Choosing the appropriate statistical techniques and having a close to complete representation of the target population can potentially reduce this threat.

Ethical Considerations

The nature of this study consisted of electronic surveys from a young adult population. To maintain confidentiality, informed consent was provided, and surveys were anonymous. Before beginning data collection, IRB approval was requested from Walden University (#03-17-20-0290231). The designated sites for data collection do not have their IRBs, but approval was obtained by the Boards of Health and/or Executive Directors of the agencies. A brief statement was provided to all participants explaining the study and how the data was used to improve education and quality of services. Each participant that met the inclusion criteria (between the ages of 18-24) was given the option to participate. Incentives were originally planned for in-person recruitment and completion but due to the pandemic, all surveys were completed virtually, and incentives

were not provided. If participants had further questions, agency information where they could obtain services was provided

When conducting a research study that consists of analyzing sexual health issues and diseases, there will always be ethical considerations due to the sensitivity of the topic. For this study, confidentiality was ensured with the use of an electronic anonymous survey through the Survey Monkey program. Participants did not need to include their names but only certain demographics. A flier and link to the survey were provided via social media outlets by the participating agencies and via email. Considering anonymity in surveys can reduce any bias such as recall bias and may help a participant be more truthful when answering the questions (Edmonds & Kennedy, 2017).

Summary

In this quantitative research study, the cross-sectional design was the best approach to use given the nature of the data being collected and the timeframe. The target sample size included a minimum of 130 participants between the ages of 18-24 recruited from three different public health organizations but only a total of 138 individuals completed the survey. The participating organization provides STD testing, counseling, and other sexual health education services. The survey questionnaire aimed at collecting general demographic information as well as the level of STD knowledge and access to comprehensive sex education. Participants were not limited to one gender or race/ethnicity. Fliers were provided for the agencies to post on their social media accounts and include in emails if they chose to recruit in that manner. The survey link was provided on materials to maintain anonymity. To maintain confidentially, informed

consent forms were provided, and the surveys were provided electronically using the Survey Monkey application. The next chapter, Chapter 4, will provide more detail of the overall survey results including graphically displays and figures.

Chapter 4: Results

Introduction

In this chapter I introduce the results from a quantitative study that assessed the knowledge level of sexually transmitted diseases among 18 to 24-year-old individuals in Stark County, Ohio. Participants completed an anonymous survey online through Survey Monkey. In addition to assessing overall STD knowledge, the survey focused on determining whether the current or past attendance of a religiously affiliated education system had an impact on the participants' knowledge level.

The data were analyzed using SPSS with the following tests: multiple linear regression, which was used to measure age, gender, access to comprehensive sex education, and attendance of religious-affiliated institutions versus STD knowledge; independent samples *t* test and the Spearman's Correlation. Results of each research questions are presented in this chapter.

Study Population

A total of 163 individuals completed the anonymous online survey initially. Due to many of the participants failing to complete all questions, 24 of the participants were removed before performing data analysis. An additional outlier was removed after creating a composite variable for access to comprehensive sex education. Therefore, a total of 138 participants were used for the final analysis. The participants were recruited via Facebook through two health departments and one family health center in Stark County, Ohio. The original plan for the study included four agencies and in-person recruitment. However, due to the COVID-19 pandemic restrictions, the fourth agency

decided not to follow through and participate in the study and recruitment did not occur in person.

The participant age requirement was between the ages of 18 to 24 years. Over 50% of the participant population was either 21 or 22 years of age and over 30% was under 21 (ages 18 to 20). Over 80% of the participants were female and the remainder identified as male. The final target audience did not prove to be diverse in race as was intended. Over 90% of the study participants were White or Caucasian. Half of the participants stated that their highest level of education was a high school degree (51.4%) and 37.7% had completed a 4-year college degree. One participant did not complete any degree from the available choices. Approximately 54% of the participants reported that they have attended a religious-affiliated university, college, and/or secondary school and over 46% said they did not attend a religious-affiliated university or college. Table 1 provides more details about the demographics of the study population.

Table 1

Demographics of final study participants (N=138)

Variable	Category	n	%
Gender	Female	116	84.1
	Male	22	15.9
Race	White or Caucasian	130	94.2
	Black or African American	4	2.9
	Hispanic or Latino	1	.7
	American Indian or Alaska Native	1	.7
	Another race	2	1.4
Age	18 years old	10	7.2
	19 years old	13	9.4
	20 years old	22	15.9
	21 years old	34	24.6
	22 years old	40	29.0
	23 years old	7	5.1
	24 years old	12	8.7
Highest Level of Education	GED or equivalent	4	2.9
	High School	71	51.4
	Associate Degree	6	4.3
	Four-year college degree	52	37.7
	Master's degree or higher	4	2.9
	No degree	1	.7
Religious Affiliated University or Secondary School Attendance	Did not attend	63	45.7
	Attended	75	54.3

Data Analysis and Results

Participants were invited to complete a 28-question, anonymous survey through Survey Monkey. The survey assessed STD knowledge and whether comprehensive sex education was provided in the home, through schools, and/or in the community. There were four total independent variables (gender, age, access to comprehensive sex education, and attendance to religious-affiliated universities and/or secondary institutions) and one dependent variable (STD knowledge score). After data cleaning through 163 completed surveys (not all competed thoroughly), the remainder of the data analysis included 138 participants.

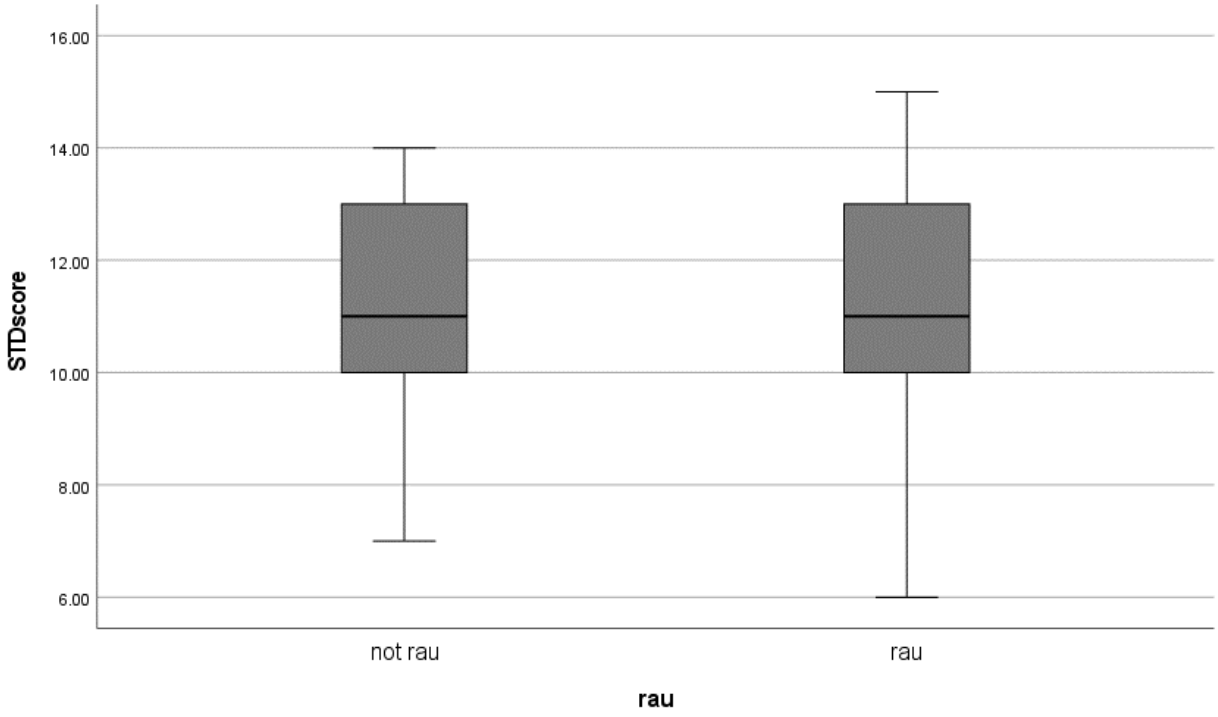
Assumptions for Independent Samples T-Test

During the process of completing the assumptions test, several outliers were discovered and removed. The independent samples *t* test was completed for RQ1. This research question measured the impact of attendance at a religious-affiliated university, college, or secondary school potentially had on STD knowledge score. Six total assumption tests were completed to determine if the independent *t* test was appropriate for this research study; as is explained by Laird Statistics (n.d.). The dependent variable in the study was STD knowledge score. This is a continuous variable where the score was measured on a scale where all "no" responses received a 0 and all "yes" responses received a score of 1 and all response scores were combined for a composite score. This led to the first assumption being met. Assumptions 2 and 3 were also met. The categorical independent variable consisted of two levels: whether the participants attended a religious-affiliated university, college, or secondary school or not. This survey

was completed by different individuals at one time. The participants did not complete the survey multiple times. The fourth assumption was found acceptable. Figure 1 demonstrates that there are no significant outliers present.

Figure 1

Box Plot: STD score and attendance/nonattendance at a religious-affiliated university or school (n=138)



The Shapiro-Wilkes test was used to test for normality in the data set. Table 2 and Figure 23 present the Shapiro-Wilks Test of Normality and the Q-Q Plot of STD score. The significance value for the test is below .050 (Table 2), which indicates the data does deviate from the normal distribution (Laerd Statisticsb, n.d.). However, the Q-Q

demonstrates that the data points do not stray too far from the line (Figure 2) so the normality assumption was assumed to be sufficiently met.

Table 2

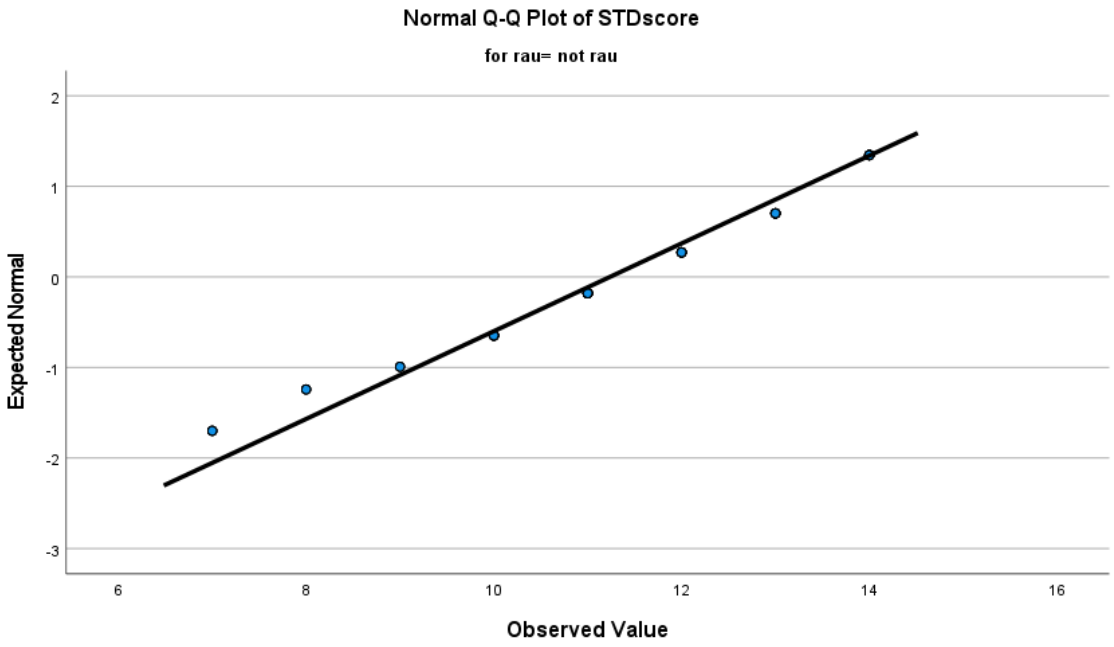
Shapiro-wilk test of normality: STD score and whether attended a religious-affiliated institution (N=138).

		Kolmogorov-Smirnov			Shapiro-Wilk		
		Statistic	df	Sig.	Statistic	df	Sig.
STD Score	Not rau	.127	55	.027	.928	55	.003
	Rau	.105	83	.025	.965	83	.022

Note. Rau= attendance at a religious-affiliated university or school; Not Rau= no attendance at a religious-affiliated university or school.

Figure 2

Normal Q-Q Plot of STD Score (n=138)



The final assumption test had been performed was Levene's test, which measures the homogeneity of variances (Merrill, 2016). The Levene's test was greater than .05, so the null hypothesis was not rejected. There is no significant difference between those who attended and did not attend a religious-affiliated university, college, and/or secondary school. The final assumption was met; therefore, independent samples *t*-test analysis could proceed.

Table 3

Group Statistics of Independent Samples T-Test (N=138)

	RAU	N	Mean	Std. Deviation	Std. Error Mean
STD Score	Not rau	55	11.2364	2.06347	.27824
	Rau	83	11.3012	2.09375	.22982

Table 4

Levene's Test for Equality of Variance (n=138)

		F	Sig.	t	df	Sig. (2-tailed)
STD Score	Equal Variance assumed	.015	.904	-.179	136	.858
	Equal variances not assumed			-.180	116.965	.858

Assumptions for Multiple Linear Regression

The multiple linear regression test that was performed determined if age, gender, attendance to religious-affiliated institutions, and access to comprehensive sex education (categorical and continuous independent variables) influenced overall STD knowledge scores (continuous dependent variable) among participants. Multiple linear regression was completed for RQ2 and RQ4. The first two assumptions had been met with the type of variables presented in the study; two or more independent variables were present and the dependent variable, STD knowledge score, were continuous. The Durbin-Watson was also completed.This test assessed the correlation that gender, age, attendance (or

nonattendance) at a religious-affiliated, college, or secondary school, and access to comprehensive sex education (independent variables) had on overall STD knowledge scores (dependent variable). The multicollinearity VIF scores for each independent variable are as follows (see Table 5): age (1.021), gender (1.027), access to sexual health education, and attendance at a religious-affiliated university, college, and/or secondary school (1.058). All four independent variables had a VIF score of less than five; so, there is no multicollinearity in the presented data (Laerd Statisticsc, n.d.). Figure 3 provides a histogram that demonstrates that the residuals are normally distributed thus the assumption is met. Figure 4 is a Normal P-P plot completed of the residuals, which demonstrated that all significant outliers have been removed. The significant outlier had been removed.

Table 5

Multicollinearity of attendance at a religious-affiliated institution, composite STD knowledge score, gender, and age (n=138)

	Unstandardized B	Coefficients Standard	t	Sig.	Collinearity Statistics	
	Std. Error	Beta			Tolerance	VIF
(constant)	9.577	.803	11.933	.000		
Rau	-.012	.364	-.003	-.033	.974	.945	1.058
CompositeSexEdu	.645	.859	.065	.751	.454	.946	1.058
Gender	.054	.480	.010	.112	.911	.974	1.027
Age	.323	.112	.245	2.896	.004	.980	1.021

Note. Dependent variable= STD Score

Figure 3

Histogram of Regression Standardized Residual

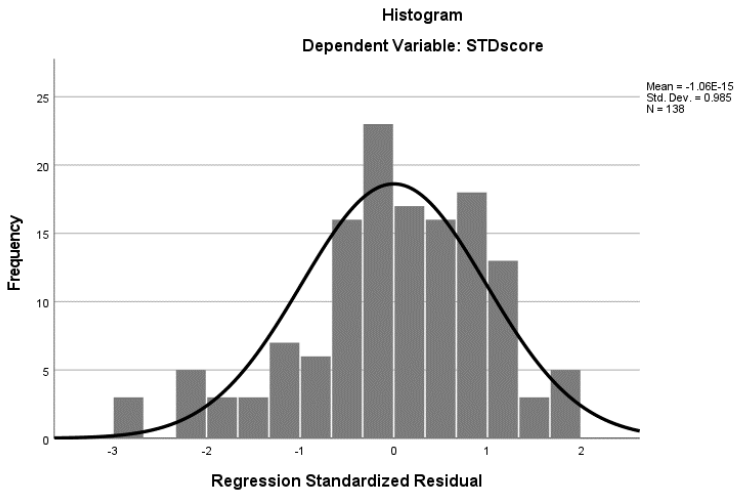
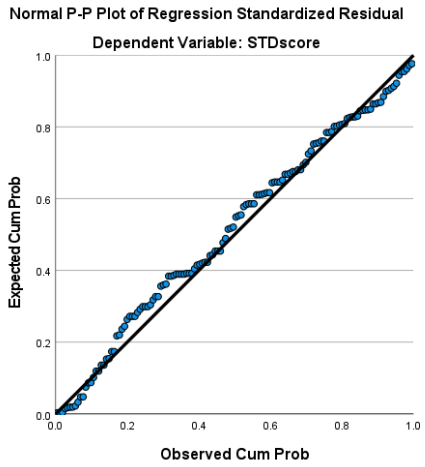


Figure 4

Normal P-P Plot



Assumptions for Spearman's Correlation

Three different assumption tests were completed for Spearman's Correlation. The first assumption was completed to determine if both continuous variables measured were measured on an ordinal, ratio, or interval scale (Laerd Statisticsa, n.d.). The dependent variable, STD knowledge scores, and the independent variable access to comprehensive sex education are both continuous variables and meet the requirements as they are measured on an ordinal scale. The second assumption test was to determine if the variables were paired observations. Everyone who participated in the survey completed the STD knowledge test and received a score. The knowledge tests allowed the participants to answer with "yes" or "no." The survey also asked if the participants received comprehensive sex education from family, secondary school, community setting, or at the university level. These answers were grouped as to whether they did receive education, a composite score. There was a total of 138 participants, and each had a specific STD score based on the completed questionnaire. Based on this information, Assumption 2 was met.

The final assumption test completed for Spearman's Correlation was to determine if there was a monotonic relationship between the two variables being measured (Laerd Statisticsa, n.d.). The first table demonstrates the completed Spearman's Correlations. The correlation coefficients of the composite comprehensive sex education variable are 1.000 and the coefficient for STD scores of .088 verify that the two are measured separate things. There is no statistical significance between the two.

Table 6

Spearman's Correlation of composite sex education score and overall STD knowledge score (n=138)

			Composite SexEdu	STDscore
Spearman's rho	CompositeSexEdu	Correlation Coefficient	1.000	.088
		Sig. (2-tailed)		.306
		N	138	138
	STDscore	Correlation Coefficient	.088	1.000
		Sig. (2-tailed)		.306
		N	138	138

Results and Research Questions

Three types of analysis were used to answer the four research questions: independent samples t-test, multiple linear regression, and Spearman's Correlation. Results of these statistical tests are provided below by the research question.

Research Question #1: Are there differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County?

$H_0$1: There are no differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County.

H_a1: There are differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus

An independent samples t-test was used to evaluate whether the attendance at a religious-affiliated primary, secondary, and/or university had an impact on the participants' overall STD knowledge score. STD knowledge score was determined by a series of questions regarding sexual health questions. Each survey participant had the option of answering "yes," or "no." As was mentioned earlier in this chapter, each "no" answer received a score of "0" and each "yes answer received a score of "1." These responses were totaled for a composite score that ranged from 0-15. There were two total questions directed to school attendance. One question asked if they attended a religious-affiliated university, college, or secondary school, and the other if they currently attend a religious-affiliated university, college, or secondary school. There was no significant difference between STD knowledge scores of those who said yes ($M=11.3012$, $SD=2.09$) to attending or currently attending a religious-affiliated institution compared to those who did not attend a religious-affiliated institution ($M=11.2364$, $SD=2.06$); $t\ (136) =-1.79$, $p=.858$.

Table 7

Independent Samples t-test (n=138)

		F	Sig.	t	(df)	p Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of Diff. Lower	Upper
STD Score	Equal Variance assumed	.015	.904	-.179	136	858	-.06484	.36195	-.78063	.65095
	Equal variances not assumed			-.180	116.965	.858	-.06484	.36088	-.77954	.64986

Table 8

Independent Samples t-test (n=138) Group Statistics

	RAU	N	Mean	Std. Deviation	Std. Error Mean
STD Score	Not rau	55	11.2364	2.06347	.27824
	Rau	83	11.3012	2.09375	.22982

Research Question #2: Are there statistically significant differences in STD knowledge scores based on gender and age?

$H_0$2: There are no differences in STD knowledge scores based on gender and age.

H_a2: There are differences in STD knowledge scores; scores will be higher among 23-24-year-old, and scores will be higher among female participants than male participants.

Multiple linear regression was used to determine if gender and age had an impact on overall STD knowledge scores. The test showed that there were no significant differences in STD scores based on gender but there was a difference with age. The older a participant was, the more knowledge they demonstrated ($p < .05$); $p < .01$. There were no significant differences between test scores and gender. The table below provides further details.

Table 9

Multiple Linear Regression (N=138)

	B	95% CI	β	t	Sig. (p)
Variable					
Gender	.073	[-.867, 1.013]	.013	.153	.878
Age	.324	[.105, 0544]	.246	2.919	.004

Research Question #3: Is there a significant association between STD knowledge scores and those who received comprehensive sex education?

$H_0$3: There is no association between STD knowledge scores and those who received comprehensive sex education.

H~~a~~3: There is an association between STD knowledge scores and those who received comprehensive sex education.

Spearman's Correlation test was performed to determine whether those who received comprehensive sex education versus those who did not receive it, had different STD knowledge scores. There was a total of 138 participants in the study. The following questions were asked on this topic including the percentage of participants that answered

"yes": (1) Have you received sexual health education from a family member; (2) Have you ever received sexual health education in school?; (3) Have you ever received sexual health education from a community organization, not a religious organization or a school?; and (4) Have you ever received sexual health education from a religious-affiliated university, college and/or secondary school? There was no significant difference or a strong correlation between STD knowledge scores and those that have received sex education in one of the settings mentioned (r_s=.088, p=.306).

Table 11.

Table 10

Spearman's Correlation (n=138)

			Composite SexEdu	STDscore
Spearman's rho	CompositeSexEdu	Correlation Coefficient	1.000	.088
		Sig. (2-tailed)		.306
		N 138	138	
	STDscore	Correlation Coefficient	.088	1.000
		Sig. (2-tailed)	.306	
		N 138	138	

Research Question #4*:* Does the attendance of religious-affiliated university, college, or secondary schools, age, gender, and access to comprehensive sex education predict STD knowledge score?

$H_0$4: Attending religious-affiliated universities, college or secondary schools, age, gender, and those who received comprehensive sex education do not predict STD knowledge score.

H~~a~~4: Attending religious-affiliated universities, college or secondary schools, age, gender, and those who received comprehensive sex education predict STD knowledge score.

This final research question sought to determine if all the independent variables (age, gender, access to comprehensive sex education, and attendance of a religious-affiliated University (RAU), college, or secondary school) predicted their STD knowledge score. The main statistical test performed was multiple linear regression. Using multiple linear regression and a 2-tailed test, the only variable that demonstrated any significance was age. The older the participant was, the more correct answers they had on their STD knowledge assessment. There was no significant difference between access to education, race, and/or education level. Age provided the only significant difference.

Table 11

Multiple Linear Regression (N=138)

	B	95% CI	β	t	Sig. (p)
Rau	-.012	[-.732, .708]	-.003	-.033	.974
CompositeSexEdu	.645	[-.1054, 2.344]	.065	.751	.454
Gender	.054	[-.895, 1.002]	.010	.112	.911
Age	.323	[.103, .544]	.245	2.896	.004

Summary

Chapter 4 has provided an overview of the results of the survey data. This survey was conducted anonymously and available to all participants in Stark County between the ages of 18-24. A few key findings in this study include:

1. There was a significant difference between the older and younger participants and their STD knowledge scores.
2. Gender did not play a contributing factor in STD knowledge scores, but this could be tested further with more male participants. Most of the participants were female.
3. The study was not diverse enough. Due to limitations during the COVID-19 outbreak, one agency did not participate in the study.
4. Though 163 individuals originally completed the survey, 138 completed most of the questions, but in analyzing research question #4, further data cleaning had to occur.

The next chapter, Chapter 5 will provide a more detailed discussion of the results. Each research question will be individually reviewed, and the results will be more thoroughly explained. Additionally, the next chapter will provide a discussion regarding the limitations of the study, implications, and recommendations for further research in the field of public health, especially on this sensitive topic.

Chapter 5: Discussion, Conclusions, and Recommendations of Study

Introduction

In this quantitative study I intended to assess whether the attendance or lack of attendance at a religious-affiliated university, college, and/or secondary school had any impact on the overall STD knowledge test scores in Stark County, Ohio. Additionally, Iassessed other factors that can influence STD knowledge including gender, age, and access to comprehensive sex education in the family, community, or school setting. The social-ecological model (SEM) was used to ground the research and inform the interpretation of findings. 163 survey participants were recruited electronically, but only 138 participants were used in the final analysis. The anonymous, electronic survey consisted of 28 questions, and was analyzed using the independent samples *t* test, multiple linear regression, and Spearman's correlation. Past studies demonstrated that most of the sexual education taught to young people at religious-affiliated institutions focuses on abstinence-only education. I originally hypothesized that attendance at a religiously affiliated university, college, and/or secondary school does have an impact on overall STD knowledge as compared to those who do not attend one of those institutions.

The results did not show any difference in STD knowledge scores among those who attended a religiously affiliated institution versus those who did not attend one. However, there was a significant difference between the age of participants and their STD knowledge scores. Findings may have been impacted by limitations to conducting in-person recruitment due to the COVID-19 pandemic. Participants were not diverse in gender, location in Stark County, or ethnicity/race, which may have been a result of

recruitment through social media. In the final chapter I will provide an interpretation of results, limitations of the study, recommendations for future research, and implications for social change.

Interpretation of Study Findings

The findings of this research study are briefly discussed by each research question that was presented in Chapter 4.

RQ11 assessed whether there are differences between the level of STD knowledge scores among participants who have attended a religious-affiliated university, college, or secondary school versus participants who have not attended a religious-affiliated university, college, or secondary school in Stark County. This research question was measured using the independent samples *t* test to determine if the overall STD knowledge was affected by attending a religiously affiliated university, college, or secondary school, and the education that may have been provided on sexual health including STDs. Each STD knowledge question provided a "yes" or "no" choice for an answer. Each "no" answer received a score of 0 and each "yes" answer received a score of 1. ; I asked two specific questions if the participants did attend a religious-affiliated university, college, or secondary school. These questions were asked before the STD knowledge test. The results of the independent *t* test showed that there was no significant difference between STD knowledge scores among participants that did attend (M=11.302) or did not attend (M=11.2364) a religious-affiliated university, college, or secondary school. These results appeared to coincide with Rosenbaum and Weathersbee (2013), who conducted a study among a Southern Baptist community. The researchers

discovered that the survey participants did receive sex education in schools and only abstinence education in the church. Regardless of what was taught in the church setting, the participants did receive basic knowledge of sexual health choices and topics from the school and/or their families.

In RQ2, I focused on the following: Are there statistically significant differences in STD knowledge scores based on gender and age? This question was measured using multiple linear regression. The scoring mechanism remained the same with the "yes" and "no" questions. The final tests showed that there was not a significant difference based on the gender of the participants but there was a significant difference by age. The older the participant, the higher the STD knowledge score. It could be assumed that the older participants may have received more comprehensive sex education than the younger participants; thus, they were more successful on the brief STD knowledge test. The findings of this research question appear to line up with another research study, specifically work that was completed by Alexander and Thornton (2015). These researchers measured STD knowledge among all levels of university students (freshman, sophomore, junior, and senior). Gender did not demonstrate any significant differences in STD knowledge compared to the age of the participants. Alexander and Thornton (2015) discovered that the older the student was, the more knowledgeable the student was about STDs.

RQ3I sought to understand if there was a significant association between STD knowledge scores among those who received comprehensive sex education. Spearman's correlation was used to answer this question. The results of this test showed that there

was no significant correlation between those who received sex education and STD knowledge score (r_s=.088, p=.306). The four survey questions that were asked regarding access to comprehensive sex education requested whether they received education from family, a community organization (besides a school and religious organization), from school, and a college or university. Millner et al. (2015) investigated the attitudes of parents regarding sex education in their local school systems that their children would be receiving. The parents were able to provide basic sexual health education but did approve of more extensive comprehensive sex education as well as abstinence (Millner et al., 2015). Comprehensive sex education in schools across the nation seems to be lacking. Gardner (2015) discovered that only 22 out of the 50 states have a required sexual health program in their school systems, with a small amount of those 22 states providing abstinence-only. This can result in the young people receiving most of their sexual health education from their peers and even television, the internet, and movies (Dudley et al., 2014). The results from my research study showed no significant difference in STD scores and access to comprehensive sex education. This is an area that needs further research to fully determine what impacts knowledge scores. It may be beneficial to adjust the participant age group to a younger group.

RQ4 I finally assessed if attendance at a religious-affiliated university, college, or secondary school, age, gender, and access to comprehensive sex education predict STD knowledge score. I took into account all the independent variables - age, gender, attendance of a religious-affiliated university, college and/or secondary school, and access to comprehensive sex education - and the one dependent variable - overall STD

knowledge score. Multiple linear regression had been performed to answer this question. The only independent variable that showed significant differences in overall STD knowledge scores was age. The older the participant was, the more likely they were to answer the questions correctly. The younger the participant, the lower their score was. As was discovered in RQ2, age provided the only significant difference, and this lines up with the study conducted by Alexander and Thornton (2015) in their research of college students. The younger freshman students had lower STD knowledge scores than the seniors (Alexander and Thornton, 2015).

Interpretation of Findings from the Social-Ecological Perspective

The SEM had been usedin this study to examine how multiple factors could impact the overall STD knowledge scores of the participants. This public health model has two basic concepts as it relates to behavior choices: five factors of influence and reciprocal causation (Edberg, 2007). The five factors of influence were integrated into this study. These five factors include intrapersonal, interpersonal, institutional, community, and public policy (Stokols, 1996). The STD survey that was completed by each participant consisted of questions that incorporated all five factors. In previous studies, it had been determined that the social-ecological model provides a good assessment as to how internal factors, as well as external factors, can impact behavioral choices and knowledge.

For this study, the STD knowledge scores only demonstrated that age had the biggest impact on the overall scores of participants. There were no significant differences between attendance and lack thereof at a religious-affiliated university, college, and/or

secondary school. In addition, it appeared that other factors such as education from family, policies, and community center education also did not influence STD knowledge scores. As was discovered, the participants were not as diverse in race, gender, and location as was first expected. The results do not exemplify the overall population in Stark County. It is recommended that further research be continued after the pandemic has surpassed the region so there is a wider variety of participants in the study.

Limitations of the Study

Several limitations were discovered during and after the completion of this study. During the initiation of recruiting participants and collecting data, the world was impacted by the COVID-19 pandemic. This event led to several limitations during active recruitment. First, the recruitment process had to be completed via social media and word-of-mouth electronically, via email, etc. An electronic recruitment flyer was provided to participating agencies so they could post it on their Facebook pages and share via email or other social media platforms. Initially, the fliers were to be dispersed at in-person locations but due to agency shut-downs during the prime-time of the pandemic, the recruitment process was adjusted. This limited the diversity of participants in the study as certain sectors of Stark County may not have access to email or certain social media outlets that the agencies used.

Another limitation of this study was the research method. The research method that used was the quantitative method. Being a limitation does not necessarily mean it was the wrong choice, but with the qualitative study I may have been able together more personal insight from the target audience. The quantitative method allowed me to collect

a large amount of data in a short time and be sufficient for an anonymous survey and STD knowledge test. If further research is conducted the qualitative method could be an option to better understand the thoughts and feelings of the participants regarding sexual health topics and comprehensive sex education.

Recommendations for Future Research

In the public health field, there is never a definitive end to research. As times and generations change, public health and medical professionals must continue to grasp a better understanding of communities and discover better ways to solve public health issues. For this research study, due to the limitations that had occurred during the COVID-19 pandemic, it would be advantageous to broaden the study, so a more diverse amount of participation is attained. For example, most participants were of the Caucasian race, and this was primarily due to the regions that most were from, and the fact that the recruitment process was entirely online. Stark County is a relatively diverse region and to understand where further comprehensive sex education is needed, survey participation from all corners of Stark County will be needed. A prime time to recruit more participants would be between the months of August through December due to secondary and college institutions being in session.

Another recommendation would be to complete either a qualitative or a mixed-methods study. Focus groups or one-on-one interviews would participants the opportunity to share their overall thoughts and feelings about sexual health topics and sex education available in the community. Participants would also be allowed to express what they desire to be implemented in community and school settings for future generations.

Implications for Social Change

Sexually transmitted diseases (STDs) can have a long-lasting impact on communities and different age groups. Individuals between the ages of 15 to 24 make up at least half of the new STD cases in the United States; half of the nearly 26 million yearly (CDC, 2014). Many external factors such as access to comprehensive sex education, gender, age, ethnicity/race, family, communities as well as religious-affiliated institutions of learning can potentially affect increased rates of STDS among the 15 to 24 age group. Though this study had several limitations due to external events that could not be controlled, it did reveal that the younger participants appear to be less knowledgeable about STDs compared to older participants in Stark County. If half of the new STD cases in the United States begin at a 15-year-old age range, more comprehensive sex education must be provided to the younger generations. This study and other studies that focus on the youth could potentially lead to the development of comprehensive sex education programming in the Stark County region. Of course, there will be challenges such as Ohio being more of a conservative state, the elimination of health classes in secondary schools, and an overwhelming amount of religious-affiliated organizations in Stark County. But with more research and data, community members could eventually be persuaded that comprehensive sex education is needed to protect the overall health of its youth.

Conclusion

The overall purpose of this research study was to assess the impact that external and internal factors had on overall STD knowledge scores of 18 to 24-year-olds in Stark

County. When I used Using the SEM, I was able to arrange the study in a way that it took into consideration a range of factors that can impact knowledge and overall sexual health. In addition to assessing those factors, one unique component was assessed: attendance or lack of attendance at a religious-affiliated university, college, and/or secondary school. Stark County has a wide range of religious-affiliated organizations (including health clinics) and due to the lack of STD education in the school system, the study sought to determine if religious-affiliated organizations had indeed impacted knowledge scores.

The results of the study did not demonstrate a significant difference in STD scores among those who attended a religious-affiliated university, college, and/or secondary school versus those who did not attend one. However, the results did show a significant difference between the older participants compared to the younger participants regarding their STD knowledge scores. Further research does need to be conducted in the area to explore whether religious-affiliated organizations can influence knowledge scores in the Stark County area.

The purpose of this study was to demonstrate to readers and the community that more effort must be made to provide sustainable and effective sexual health education programs in the Stark County community. Early young adulthood provides many challenges including building relationships and maintaining overall health. There should not be an age difference as it relates to sexually transmitted disease knowledge, especially among older teens and those entering young adulthood. If proper education that does not only focus on abstinence-only is provided at an age where individuals begin making

physical relationship decisions, then it is possible that they would make positive better behavioral decisions that protect all parties involved. This study only provided a small view of the gap in sexual health education. A more collaborative effort in communities needs to take place to provide better sexual education curriculums not only at the college/university level but in the high school arena as well. More research beyond this study can support this effort and bring to fruition the needs in the community and among young people. If this is tackled, then maybe young adults and teens will make healthier lifestyle choices and open communication regarding sexual health and STD between parents and the community will be ascertained. It would be beneficial to initiate new recruiting methods with a broader range of timing and locations to increase participant diversity, improve their access to sexual health education, and reduce overall rates of STDs among youth in Stark County.

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Appendix A: Survey

Part 1: Demographics and Sexual Health Education

Directions for Part 1: Please select one choice for each question.

1. How old are you?
   A. 18 years old
   B. 19 years old
   C. 20-year-old
   D. 21 years old
   E. 22 years old
   F. 23 years old
   G. 24 years old

2. What is your sex?
   A. Female
   B. Male

3. What is your race (select one or more responses)?
   A. American Indian or Alaska Native
   B. Asian
   C. Black or African American
   D. Native Hawaiian or Pacific Islander
   E. White

4. What is the highest level of education you completed?
   A. GED or equivalent
   B. High School
   C. Associate Degree
   D. Four-year college degree
   E. Master's degree or higher
   F. No Degree

5. Do you attend a religious affiliated organization such as a high school, university and/or college?
   A. Yes B. No

Part II: Sexual Health Education

Directions: please select answers accordingly. Please also note that this survey utilizes the term "sexual health education" to indicate anything information regarding abstinence, sexually transmitted diseases/infections, pregnancy prevention HIV/AIDS and other sexual health topics.

6. Have you ever received sexual health education from a religious organization?

   A. Yes B. No

7. If yes to question #6, which sexual health topics were covered (select all that apply):
   a. Abstinence (no sex before marriage)
   b. Male contraceptives (male condoms)
   c. Female contraceptives (birth control methods)
   d. Sexually transmitted diseases (HIV, chlamydia, gonorrhea, etc.)
   e. Pregnancy
   f. Oral sex
   g. Healthy decision making
   h. Gender roles
   i. Healthy relationships/sexual abuse
   j. Other: _____

8. Have you received sexual health education from a family member?

   A. Yes B. No

9. If yes to question #8, which sexual health topics were covered (select all that apply):
   a. Abstinence (no sex before marriage)
   b. Male contraceptives (male condoms)
   c. Female contraceptives (birth control methods)
   d. Sexually transmitted diseases (HIV, chlamydia, gonorrhea, etc.)
   e. Pregnancy
   f. Oral sex
   g. Healthy decision making
   h. Gender roles
   i. Healthy relationships/sexual abuse
   j. Other: _____

10. Have you ever received sexual health education in school?

    A. Yes B. No

11. If yes to question #10, which sexual health topics were covered (select all that apply):
    a. Abstinence (no sex before marriage)
    b. Male contraceptives (male condoms)
    c. Female contraceptives (birth control methods)
    d. Sexually transmitted diseases (HIV, chlamydia, gonorrhea, etc.)
    e. Pregnancy
    f. Oral sex
    g. Healthy decision making
    h. Gender roles
    i. Healthy relationships/sexual abuse
    j. Other: _____

12. Have you ever received sexual health education from a community organization (not a religious organization or a school)?

    A. Yes B. No

13. If yes to questions #12, which sexual health topics were covered (select all that apply):
    a. Abstinence (no sex before marriage)
    b. Male contraceptives (male condoms)
    c. Female contraceptives (birth control methods)
    d. Sexually transmitted diseases (HIV, chlamydia, gonorrhea, etc.)
    e. Pregnancy
    f. Oral sex
    g. Healthy decision making
    h. Gender roles
    i. Healthy relationships/sexual abuse
    j. Other: _____

Part III: Sexual Health Knowledge

14. Sexual intercourse is the same as oral sex.
    A. True B. False C. Don't Know
15. A person can contract an STD by oral sex.
    A. True B. False C. Don't Know
16. If you are infected with a sexually transmitted disease, you might not know it because some STDs show not symptoms.

A. True B. False C. Don't Know

17. An infected person that has no signs or symptoms of an STD cannot pass it to their sexual partner.

A. True B. False C. Don't Know

18. Repeated, unprotected oral sex can increase a person's risk of Syphilis.

A. True B. False C. Don't Know

19. If you are pregnant and have contracted an STD, you cannot pass it on to your baby.

A. True B. False C. Don't Know

20. Sexually transmitted disease infections are not something for you to worry about unless you have many sex partners.

A. True B. False C. Don't Know

21. Sexually transmitted diseases can cause some kinds of cancer.

A. True B. False C. Don't Know

22. Birth control methods such as: the patch, NuvaRing, the Depo Provera shot, and IUD are good ways to prevent sexually transmitted diseases.

A. True B. False C. Don't Know

23. The withdrawal or "pulling out" method without a contraceptive is a good way to prevent sexually transmitted diseases.

A. True B. False C. Don't Know

24. You or your mate can use the same condom after it was used once, as long as you wash it.

A. True B. False C. Don't Know

25. If a person has been diagnosed with an STD in the past, he or she is immune from contracting one in the future.

A. True B. False C. Don't Know

26. You can contract a sexually transmitted disease such as Gonorrhea just by sitting on the toilet after an infected person sat on it.

A. True B. False C. Don't Know

27. Syphilis that is left untreated can produce symptoms at any time from 17 days after contracting the disease up to 30 years.

A. True B. False C. Don't Know

28. A person infected with crabs can infect another person even if there is no sexual penetration.

A. True B. False C. Don't Know