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The Social Determinants of Health and the Influence on the Incidence and Prevalence of HIV /Syphilis Co-Infections in Dougherty County, GA

By

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The Social Determinants of Health and the Influence on the Incidence and Prevalence of HIV/Syphilis Co-Infections in Dougherty County, GA

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An Abstract of
A thesis submitted to the Faculty of the Rollins School of Public Health of Emory University in partial fulfillment of the requirements for the degree of
Master in Public Health in the Executive Masters in Public Health Program
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Abstract

Background/Introduction:
Located in the Southwest region of the State of Georgia, Dougherty County is the county seat for the metropolitan City of Albany. With a population of 92, 407 (US Census Bureau, 2014), this rural community is most noted for its agricultural abundances and its aquatic attractions. The rates of HIV and syphilis in Dougherty County have been on a consistent rise. In 2014, there were 48 new HIV cases diagnosed in Dougherty County. The county has the second highest rate of HIV diagnosis (63.8 per 100,000) in the state. There were 62 new cases of syphilis, at a rate of 60.6 per 100,00. Eighty-seven percent of syphilis cases and HIV cases in the county are among young black men.

Methods:
This study consisted of fifteen randomly selected participants who are patients of the Dougherty County Health Department Sexually Transmitted Infection Clinic. To be considered eligible for the study, each participant must be a resident of Dougherty County. Also, each participant must have a confirmed positive lab result for syphilis, HIV, or both on file at the Dougherty County Health Department. The data collected via survey was manually coded and analyzed using SPSS and qualitative methods. Coding the text was completed to identify themes in participant knowledge, attitude, and perceptions of the relationships between social determinants of health and STDs/HIV co-infections.

Results:
From 2015 to 2016, fifteen surveys were administered to patients at the Dougherty County Health Department STD Clinic. All participants were African American. The survey population consisted of ten males (66.7%) and five females (33.3%) who previously tested positive for HIV, Syphilis or were co-infected with both HIV and syphilis. Sixty percent of those interviewed were unemployed with a median household income of $12,000. Eighty-seven percent of those interviewed held a high school diploma and 10 (67%) reported having had some college education. Sixty percent reported having a fair financial status, while only 20% described their finances as poor. Participants were asked to express their views on what could be contributing factors towards the increase in HIV and syphilis co-infections in Dougherty County. Responses fell within three categories: 1) sexual risk taking behaviors, 2) stigmatizing attitudes and discrimination, and 3) lack of HIV/STD transmission-related education that target the social reality of young MSM populations.

Conclusion:
Health is affected by where and how we live, work, play, and learn. These social determinants of health were shown to have an influence on the incidence and prevalence of HIV and syphilis co-infections in Dougherty County, GA. Particularly, the general stigma associated with HIV/STD in rural communities, the frequent repression of discussion about sexuality, and extreme pockets of poverty has proven to negatively impact health outcomes. To address HIV/STD outcomes in Dougherty County it will be important to work toward unfettered access to quality sexual health information and addressing the association of health outcomes with the unique history and culture of the deep south, particularly among people of color, gay and bisexual men, and transgender people.

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Table of Contents

Chapter I. **Background/Introduction**

Located in the Southwest region of the State of Georgia, Dougherty County is home to the City of Albany. With a population of 92, 407 (US Census Bureau, 2014), this rural community is most noted for its agriculture and the beauty of Flint River.[1] Dougherty County was founded by Charles Dougherty, a prominent lawyer.[2] The development of Dougherty County derived from a legislative act established in 1853 that secured land from within neighboring Baker County. Early settlers of Dougherty County utilized the land's proximity to the Flint River by establishing an effective means to import and export materials. The land was highly favorable for the production of revenue generating crops, such as tobacco, corn, and cotton. The river enabled the import and export of textiles and crops to and from this region, which ultimately stimulated economic growth.[2]

In 1836, a merchant and businessmen by the name of Nelson Tift founded the City of Albany. With a strong acumen in the business industry, Nelson Tift founded the City of Albany with intent and purposes of facilitating the agriculture market for those farmers and land owners who lacked the common knowledge.[3] By the 1840s', Dougherty County became a mecca for agriculture. More and more farmers had begun to migrate to this region to establish themselves as share croppers.[3] The influence of the early settlers is evident today. Although the Flint River is no longer used as an active waterway to transport goods and crops, its beauty continues to be the main attraction for the City of Albany and Dougherty County.

Problem Statement and the Importance of the Problem

The control of sexually transmitted diseases is now recognized as a global priority. HIV is clearly a major cause of premature death, and most cases are the result of sexual transmission. The District of Columbia and the 16 states that make up the South are now the epicenter of America's HIV epidemic. A May 2016 CDC Issue Brief reported that the South now experiences the greatest burden of HIV infection, illness, and deaths of any U.S. region, and lags far behind in providing quality HIV prevention and care to its citizens. The impact of HIV in the rural South also varies by race. African Americans are severely affected by HIV in the South, accounting for 54 percent of new HIV diagnosis in 2014. Black gay, bisexual, and other men who have sex with men (MSM) face an especially heavy burden, accounting for 59 percent of all HIV diagnosis among African Americans in the South. In fact, of all African Americans MSM diagnosed with HIV nationally in 2014, more than 60 percent were living in the South.[4]

According to the Centers for Disease Control HIV Atlas, Dougherty County's 2014 HIV rate was 63.8 per 100,000 of the population. Among Georgia's 159 counties, Dougherty County's 2014 HIV rate ranks second highest. There were 62 new cases of syphilis at a rate of 60.6 per 100,000. Eighty-seven percent of syphilis cases and HIV cases in the county are among young black men. Overall, Dougherty County has a high burden of STD, particularly among young people. Georgia Department of Public Health 2015 surveillance data revealed that 76 percent of all STD cases in Dougherty County are between the ages of 15 years to 24 years. Moreover, 15-19 years olds make up 35 percent of all STD cases in the county.

Syphilis is a sexually transmitted infection caused by the bacterium *Treponema pallidum.*[5] Once considered a disease of the past due to its historical implications, syphilis has re-emerged to become a significant public health priority within many communities and populations. Syphilis can be described through both a symptomatic and an asymptomatic diagnosis. From inoculation, syphilis is identified through stages; primary, secondary, and latent. The primary stage of syphilis consists of the presence of a painless, open lesion or chancre within the genital region.[5]

Secondary syphilis involves the presence of a "palmer/plantar" rash in the palms of the hands and soles of the infected patient's feet. Latent syphilis is diagnosed without the presence of symptoms but through a RPR (Rapid Plasma Reagin) test. This test generates a quantitative number known as a titer. The titer is a 2-4 tube dilution that indicates whether a patient has reactive or non-reactive RPR test. In the event a patient receives a reactive RPR, confirmatory testing is performed to confirm if the RPR is a "true" positive or "false" positive.[5]

Untreated, syphilis can cause a lasting effect on the infected individual. If left untreated, syphilis can result in liver damage, neurology impairment, and even death. In infected women, untreated syphilis can also result in infertility and mother to fetus transmission. The recommended treatment for syphilis is 2.4 ml of bicillin via injection or intravenously or doxycycline.[5]

Much like syphilis, HIV (Human Immunodeficiency Virus) is also a sexually transmitted infection with no cure. HIV is carried and transmitted by the *lentivirus.*[6] HIV has evolved into what some would consider as a chronic illness. Through the advancement

of science, the body of knowledge regarding the etiology and treatment of this disease has afforded many the opportunities to sustain long and productive lives.

Considering the risk factors associated with both infections have similarities, some may attribute this increase in HIV and syphilis to the lack of education and the inability to make sound decision regarding sexual behaviors. Among many lower income populations, the presence of HIV and syphilis within those communities have become prevalent as a result of specific social determinants such as education and income. As a result, I chose to explore the association between the social determinants of health in Dougherty County, GA and the incidence and prevalence of HIV and syphilis co-infections has been established.

The Purpose Statement

The presence of HIV within the body weakens the body's ability to defend against other illnesses; therefore, the presence of co-infections associated with syphilis poses as a significant public health concern.[6] This thesis project was conducted to better understand the relationship between the social determinants of health and the incidence of HIV and syphilis co-infections in Dougherty County, GA.

Chapter II: **Overview of Literature/ Literature Review**

Overview of Literature

The presence of low incomes and low educational attainment in many rural communities has caused a reoccurring cycle of poverty among many rural families.[7] As a result, many rural communities are lacking in resources needed for an improvement in their quality of life. Many of the traditional ways of life that most families who reside in rural communities live by have resulted in poor health, low literacy skills, and low income.

Social determinants of health heavily influence the behaviors of those who reside in these communities. Increased participation in risky behaviors has led to the increase in sexually transmitted infections. HIV and syphilis infections have consumed many communities without regard to race, gender, or sexual preference, but is predominantly found within the African American MSM population.[8] Factors such as stigma within rural communities pose as barriers for providing treatment and care for HIV and syphilis.[9] As a result, these infections have become widespread among rural communities.

The literature suggests a relationship between social determinants of health and HIV/syphilis infections; however, there is limited literature that addresses syphilis and HIV co-infections and even less literature that addresses the relationship between the social determinants of health and these types of infections. Those who are at risk of acquiring HIV are also at risk of acquiring syphilis.

HIV/Syphilis transmission associated with Income Inequalities

According to Wiewel and colleagues, living in very high versus low poverty environments increase the risk of HIV transmission.[10] The social determinants of health

within a community alludes to the community's ability to provide the necessary resources for a greater quality of life. Rural communities are often burdened by the lack opportunity in both economics and healthcare. Economic deprivations among rural communities are motivators for HIV transmission. Rural communities are often characterized by its inability to successfully foster a socially economic environment conducive for a higher standard of living. As a result, many rural communities are experiencing an uptick in poverty rates. Improving factors such as access to adequate healthcare, income, and educational opportunities appeal to the need for a good quality life, while establishing a catalyst for improving the socioeconomics of rural communities.

Abott and Williams defines upstream health determinants as factors within the social, psychological, and physical environments that affect individual health behaviors, disease risk, and health outcomes.[11] Due to the lack of social and economic growth in many rural communities, factors such as high crime rates and increased drug and alcohol usage contribute to the increase in HIV transmission. Also, these factors impede upon an individual's decision towards the use of contraception. Risky behaviors such as these influence the transmission of HIV and other sexually transmitted infections.

Forsyth and colleagues suggest that considerable progress has been made in the past decade in illuminating the impact of social determinants on health, which include such factors as poverty; barriers to timely access to and use of medical and social services; and high rates of incarceration, which can disrupt social and sexual networks.[12] Social determinants of health within rural communities are often perceived as complex barriers to community growth and development. Many rural areas lack the necessary resources to promote and sustain social and economic growth. This can be seen as a result of policy

implementations from the state and federal levels that omit the needs of rural communities. Therefore, rural communities have been burdened by pockets of extreme poverty and high crime rates. Employing social determinants of health models within these communities can aid in identifying those influences that contribute to the transmission of HIV from an individual and societal level.

The relationship between income and HIV is much more complex than the relationship between income and health.[13] It is often stated that communities with a higher level of poverty have an increase in negative health outcomes. Income inequality is an even distribution of income within a population. According to Lim, populations with higher incomes have higher rates of HIV and other sexually transmitted infections, while populations with lower socioeconomic status have lower HIV and other sexually transmitted infections. [13] The differential among incomes within populations plays a role in how individuals address specific health outcomes, such as annual health checks and compliance within specific treatment programs.

Birch and colleagues contends that lower socioeconomics is linked to lower adherence to treatment for HIV and other STI due to competing priorities, such as employment concerns, family, personal or social circumstances, healthcare literacy, increased stigma, and an increased prevalence in depression or substance abuse.[14] Income inequality within rural communities plays a vital role in how individuals who are diagnosed with HIV and syphilis approach treatment options. Within most local health departments, treatment options for syphilis and other sexually transmitted infections are offered free of charge, whereas treatment programs for HIV are offered through infectious disease programs. Although, the options are available, residents within rural communities are

presented with socioeconomic challenges that influence the level of compliancy within these communities. Individuals who are sustaining themselves with limited resources are often left with the decision to acquire basic necessities or purchase medication. Due to the lack of economic growth within many rural communities, specific social determinants such as, employment and access to healthcare are impacted. Without a substantial income resource, individuals who are diagnosed with HIV and syphilis are competing with compliancy and survival.

Rural communities are characterized by their strong traditions and cultural norms. Alongside the element of complacency, many families within rural communities have become consumed by generational behaviors and norms. Lack of education and the strong will to succeed through self- efficacy are both elements that plague most families within rural communities, not to mention they are also considered to be contributing factors for the transmission of HIV. According to Dr. Xiushi Yang, Professor at Old Dominion University, the spatial differences in the prevalence of HIV/STDs underscores the importance of contextual factors in the study of HIV and other STDs. He also suggests that context-specific conditions, norms, and practices may hold the key to the transmission of HIV/STDs.[15] By acknowledging the driving mechanisms that contribute to the transmission of HIV, one can assume that specific contextual elements such as poor economic status and low literacy often imposes themselves on the decision-making abilities of those who are at a greater risk of acquiring and transmitting HIV.

HIV/ Syphilis incidence and prevalence among Men who have sex with Men (MSM)

MSM defines a group of men behaviorally and temporally, and is preferred by public health researchers over identities such as gay or bisexual men because behavior, not identity, leads to sexual transmission of HIV and STIs.[16] Participation in risky sexual behaviors are the leading factors in the transmission of HIV and syphilis. Men who have sex with men (MSM) have the highest incidence and prevalence of HIV and syphilis among at-risk groups. This is mainly due to the increase in unprotected sexual activity. Also, the increase in social media web sites that facilitate online dating has created a means for men to establish sexual relationships exclusively with other men without establishing any rapport. According to Dieguez and colleagues, during the last decade, the Internet has become popular among MSM as an environment in which to seek sexual partners.[17]

Within rural communities, MSM populations are faced with many challenges regarding sexuality. The stigma associated with being an MSM causes barriers to treatment and care if diagnosed with a sexually transmitted infection. Also, most rural communities lack the social infrastructure to support MSM populations, so many MSM commute to larger cities where there is a social infrastructure such as parties and public establishments that accommodate the MSM culture. These social infrastructures not only embrace the MSM lifestyle, but they also provide opportunities for sexual activity, which promotes the transmission of HIV and syphilis.

The prevalence of HIV and other sexually transmitted infections are most commonly found among men who have sex with men (MSM) populations, specifically among young African American men. According to Maulsby and colleagues, black MSM have the most disproportionate rates of HIV in the United States.[18] The increase in HIV

rates among this population have been found to be a result of medical non-compliance, partner attributes and an increase in co-morbidities associated with other sexually transmitted infections. Within rural communities, medical non-compliance can be a barrier to the treatment and care of HIV/syphilis. Often times, resources such as, transportation are often limited and prevent proper access to care.

According to Abara and colleagues, risky behaviors such as condom-less anal sex, exchange sex, illicit drug use before sex, multiple sex partners, and high risk anonymous sexual contacts are contributing factors in the increase in HIV and syphilis incidence and prevalence among MSM.[19] Men who have sex with men are considered a high risk population for acquiring HIV and syphilis infections. African Americans and Hispanics have the highest incidence rates among all other racial groups for HIV and syphilis diagnoses. Certain trends such as, increased unprotected sex and failure to disclose individual health status have contributed to the increases in HIV and syphilis transmission among MSM.

MSM syphilis cases frequently report having a large number of sexual partners, often anonymous and met over the Internet, and having sex under the influence of drugs.[20] Primary syphilis symptoms involve the presence of open lesions that facilitates the transmission of syphilis and HIV. An increase in anonymous sexual partners increases the risk of transmission of both HIV and syphilis. Contributing factors such as IDU (Injection Drug Usage) and Internet dating have all played a role in the frequency of syphilis and HIV among MSM.

Barriers to Linkage to Care and Treatment for HIV/Syphilis in Rural Communities

Little is known about the patient characteristics, social support networks, and relationship factors associated with excellent adherence in resource-limited settings, even though these can be important clues that inform the identification of targets and the approaches of individual- and community-based antiretroviral therapy adherence interventions. [21] Treatment adherence is vital for the regression of the HIV and syphilis. Untreated, these infections can cause serious detriment to a person's body. One of the major factors for that is competing priorities among those who are diagnosed with HIV and syphilis. In areas that have limited resources, those who have been diagnosed with HIV and syphilis are faced with the decision of accessing health care or sustaining life.

Most often, many of those who reside in rural communities lack the necessary financial means to consistently adhere to treatment regimens. Also, a larger issue is the proximity of adequate health care for rural residents who are diagnosed with HIV and syphilis. Although most rural communities have local health departments that are able to test and treat for syphilis, some facilities lack the expertise and infrastructure to assess HIV. This creates a barrier for those who lack the transportation and financial means to access HIV care.

According to Bolsewicz and colleagues, it is very important to understand the complexity of factors that influence a person's decision to adhere and comply with HIV treatment over time.[22] Certain factors such as access to care, income, education and the overall quality of life of an infected person poses as deciding factors for treatment participation. Infected person who reside in rural communities are most often faced with the burden of limited access to proper HIV care. With limited access to efficient

transportation, proximity to proper healthcare facilities to many rural communities can influence how those rural residents utilize resources. It also impedes upon the compliancy of many rural patients who reside in these communities.

Individual responsibility can play a major factor in the treatment and care of HIV and syphilis. Individuals who are tested for HIV and syphilis in rural communities are often lost to care or fail to return for laboratory results. According to Pai and colleagues, one of the biggest concerns about conventional laboratory-based testing is the long turn-around times and delays, and the resultant loss of patients from the testing and treatment pathway.[23] Rapid testing has become a popular method for identify HIV antibodies, but much like the RPR (Rapid Plasma Reagin) test for syphilis, laboratory based testing is need to confirm the rapid test. This poses as a treatment barrier because many times the amount of time between the submission of the lab result and the return of the lab result is delayed and the individuals become unable to locate.

Research studies suggest that MSM may not screen for HIV as a result of perceived low risk for infection, as well as fear of testing positive, with associated concerns over losing employment, insurance, family concerns, lack of time, worry that someone will find out, fear of needles, and fear of discrimination.[24] The stigma associated with MSM populations has created barriers to effective treatment and care. Most men who have sex with men often defer the opportunity to be tested from fear of societal rejection. One major concern in being tested in small, rural communities is the element of confidentiality. Confidentiality is a major component in HIV and STI testing and because most individuals who reside in rural communities' fear that the unlawful disclosure of a positive result will occur, they decline opportunities to be tested locally. Those who desire to participate in

testing prefer to test in other areas for risk of testing positive. If those individuals test positive, often times those results are not disclosed because the individual becomes lost. When this occurs, this increases the risk of HIV and syphilis being transmitted.

Borgart and Thorborn suggested that HIV/AIDS conspiracy beliefs would provide a basis for condom attitudes among African Americans, because individuals who mistrust government information about HIV may be similarly suspicious of public health information about condoms.[25] Historically, African Americans have consistently been burdened by disease. From the Tuskegee Experiment to HIV and syphilis, African Americans as a population have struggled to sustain a favorable quality of life. The syphilis experiment in Tuskegee created a barrier of distrust for governmental entities, including public health. Many of those who were present during the times of the Tuskegee Experiment have failed to forget the unethical framework imposed by the government. With the presence of HIV and the re-emergence of syphilis in many African American communities, the feeling that history is duplicating itself has set in on the minds of those who witnessed the effects of the Tuskegee Experiment. The history of African Americans and infectious diseases creates a barrier to adherence to prevention strategies. African Americans' level of distrust towards the government poses a challenge for implementing successful interventions to reduce the transmission of HIV and syphilis.

Chapter III: **Methodology**

Purpose

This research intends to explore the relationship between the social determinants of health in Dougherty County, GA and the incidence and prevalence of HIV and syphilis co-infections. Certain factors such as education, income, and access to quality health services are essential components to consider while addressing the overall quality of life. Inadequacies within those components pose barriers to achieving and sustaining a desired quality of life, especially within rural, low-income areas. As a result, many rural communities are being plagued with an increase in certain health disparities, such as sexually transmitted infections.

The scope of knowledge regarding HIV has evolved as scientists have become more vigilant towards understanding the etiology of the virus. Yet, this virus remains a focal point in many federal, state, and local health initiatives aimed at improving the overall quality of life. Syphilis was once considered a disease of the past due to its historical implications involving the Great Tuskegee Experiment, but in recent years, this sexually transmitted infection has once again become a point of emphasis for many health prevention programs. Therefore, this study will attempt to associate specific social determinants within Dougherty County, GA with the prevalence and incidence of HIV and syphilis co-infections.

Preliminary Studies

Currently, there are several studies being conducted to address the impact of social determinants of health on the prevalence and incidence of HIV within communities, but

very few addressed the impact of social determinants on the incidence and prevalence of HIV and syphilis co-infections.

Significance/ Justification of Study

The overall effect of sexually transmitted infections on the quality of life of a community is one of great magnitude. If untreated or improperly assessed, sexually transmitted infections can cause lasting effects on the physical body that can ultimately result in death. Accompanied with inadequate social determinants, communities that are burdened by the disparity of sexually transmitted infections are at risk of negatively influencing the quality of life. Therefore, the intent of this study is to explore the association between social determinants of health in Dougherty County, GA and their influence on HIV and syphilis co-infections.

Study Design

Sample:

This study consisted of 15 randomly selected participants who are patients of the Dougherty County Health Department Sexually Transmitted Infection Clinic. Each participant to be considered eligible for the study must be a resident of Dougherty County. Also, each participant must have a confirmed positive lab result for syphilis, HIV, or both on file at the Dougherty County Health Department.

Setting

Interviews with all patients will be conducted at the Dougherty County Health Department. Each interview will be conducted behind closed doors within the Dougherty County Health Department.

Recruitment

Participants will be randomly selected from the Dougherty County Health Department Sexually Transmitted Infections database to participate in a brief 14 question survey. All participants will be contacted via phone to solicit participation in study. Each participant will have received a confirmed positive lab result for syphilis, HIV, or both infections, completed post and pre counseling, and participated in partner services to be deemed eligible. At the completion of each survey, participants will be provided with a $10.00 Visa Gift Card for their participation.

Measures

Surveys will be used to provide evidence of a possible relationship between social determinants of health and syphilis /HIV co-infections. The responses from each interview will be used to identify the effectiveness, clarity, and comprehension of STI prevention campaigns in Dougherty County, GA. Also, the responses will be used to measure the accessibility of specific community resources such healthcare, education, and employment opportunities.

Risks to Participation

There is minimum risk to breach of confidentiality and subjects might be uncomfortable with some questions, but have the right to decline answering any questions that pose a level of discomfort.

Benefits to subject or future benefits

Participants will receive a monetary incentive in the form of a gift card in the amount of $10.00 for their participation. Also, it is the hope of the Principal Investigator that the data collected from this study will assist in evaluating the current process in STI

prevention at the Dougherty County Health Department, while providing vital information for future programs aimed at preventing the transmission of syphilis and HIV.

Data Analysis

The data collected during interviews served as a mechanism for understanding the views and perceptions of patients who have been diagnosed with syphilis and HIV co-infections while residing in Dougherty County, GA. Data retrieved from OASIS within the last 5 years was incorporated to illustrate the overall incidence and prevalence of HIV/ syphilis co-infections within this geographical area

The data collected via survey was manually coded and analyzed using SPSS and qualitative methods. Coding the text was completed to identify themes in participant knowledge, attitude, and perceptions of the relationships between social determinants of health and syphilis/HIV co-infections. Frequencies were used to identify the percentages of each gender, age, income, sexually preference, educational level and geographical location represented within the sample. Also, frequencies were used to establish trends in participant views on HIV and syphilis rates in Dougherty County. Cross tabulations were used to identify relationships between the variables of income and geographical location of residence in Dougherty County. Participants were asked to express their views on what could be contributing factors towards the increase in HIV and syphilis co-infections in Dougherty County. Most responses fell within three categories; sexual risk taking behaviors, stigmatizing attitudes and discrimination, and lack of HIV/STD transmission - related education targeting young MSM. These three categories strongly influence the spread and transmission of HIV and syphilis.

Training

The study director has completed the CITI human subject training.

Plans for data management and monitoring

Data obtained from participant's surveys will be kept in a key-locked security bag inside of key locked file cabinet. All information will be kept as a hardcopy until analyzed. Once analyzed, the results will also be secured within a key-locked bag within a key locked file cabinet. At the conclusion of the study, all surveys will be shredded and properly disposed into a locked shred container at the Dougherty County Health Department.

Confidentiality

In an effort to protect the confidentiality of all participants, the activities associated with this study will be restricted to the Dougherty County Health Department. All data will be transcribed within strict accordance to HIPAA compliance policies. All participants will be provided a number for identification to prevent the use any identifiable information. All hard copies of interview responses will be stored in a locked file cabinet behind a key accessed door. Coded data will be password secured and encrypted to minimize any risk for breach of confidentiality. Principal Investigator and field advisor will only have access to all data. At the conclusion of the study all participant information will be properly shredded to prevent improper disclosure.

Informed Consent

Prior to participation in interview, all participants will be provided a written informed consent describing the nature of the study. The informed consent will also inform each participant of his or her rights within the study and at any time during the survey, the

patient can discontinue participation. The Principal Investigator's responsibility in maintaining the patient's confidentiality will also be disclosed within the inform consent.

Limitations

Study limitations will be discussed in the following chapter.

Plans to inform participants of new findings or research results.

The results of this study are intended to benefit you directly. This study is designed to learn more about how the socio-determinants of health impact the incidence and prevalence of HIV and syphilis co-infections in Dougherty County, GA. The study results may be used to help others in the future. The intent and purposes of this study is to establish a foundation for evaluating the process of current prevention and education programs and to also assist in creating new initiatives aimed at preventing the acquisition of STIs' in Dougherty County, GA. The findings will be used to develop programs aimed at preventing the transmission of the syphilis and HIV and participants may be asked to serve in an advisory capacity for establishing this program, the findings will also be shared with the District Health Director of the Southwest Georgia Public Health District 8-2, the District Epidemiologist, and the County STD Program Manager.

Chapter IV: Analysis/ Results

Introduction

From 2015 to 2016, fifteen surveys were administered to patients at the Dougherty County Health Department STD Clinic to explore relationships between specific determinants of health and HIV and syphilis co-infections in Dougherty County, GA. All participants were African American. The survey population consisted of 10 males (66.7%) and 5 females (33.3%) who tested positive for HIV, syphilis or were co-infected with both HIV and syphilis. All male participants associated with being MSM (46.7%), while the remaining participants identified with being heterosexual (33.3%), bisexual (13.3%), and lesbian (6.7%). All respondents reported being knowledgeable of the risk factors for acquiring HIV and syphilis.

The mean age of all respondents was 38.6 years. Sixty percent of those interviewed were unemployed with a median household income of $12,000. The lowest household income reported was less than $5,000 for five participants and the highest income recorded was $35,000 for 2 respondents. In contrast, 87% of those interviewed held a high school diploma and 10 (67%) reported having had some college education. When asked how would you rate your financial situation, 60 percent reported it as being 'fair', while only 20 percent described their finances as poor. All participants were Dougherty County residents and the majority (73.3%) live in census tract 2, one of the most impoverished sectors of the county.

Figure 1 in the Appendix illustrate population characteristics of those who reside in Census Tract 2 within Dougherty County, GA. In 2015, the population was 3,178 total residents, 92 percent of those residents are African American. There are 732 families and

1,056 households. The median household income for this tract is less than $10,000, with an unemployment rate of 23.5 percent. Most of the (59.5%) population live in poverty and 27.3 percent of the households in the census tract are female headed with children younger than 18 years of age.[26]

Having a stable address has been shown to correlate positive STD status. Those surveyed were asked how long they lived at their current address, 27% reported less than a year, 40 percent lived there between one to five years, and 30 percent more than ten years. Thirteen (86.7%) participants said poverty was a big problem in the county and it affected their decision-making and health outcomes. Social outlets and local culture norms were also an issue for those interviewed, many felt there is a lack of social opportunities particularly for the LBQT population.

Key Findings

Participants were asked to express their views on what could be contributing factors towards the increase in HIV and syphilis co-infections in Dougherty County. Responses fell within three categories: 1) sexual risk taking behaviors, 2) stigmatizing attitudes and discrimination, and 3) lack of HIV/STD transmission-related education that target the social reality of young MSM populations. These three categories were strongly felt to influence the spread and transmission of HIV and syphilis. The three categories are closely associated with the systematic issues rooted within the African American culture in the rural south.

Sexual Risk Taking Behaviors

Condom use is statistically less prevalent among black males compared to white males. National studies have shown that individuals living in rural areas are less likely to

use condoms compared to metropolitan areas. The majority (68%) of those surveyed overwhelming reported that sexual risk-taking behaviors play a central role in the spread of HIV and syphilis in this rural community. Areas of sexual risk-taking behaviors reported were: 1) lack of consistent condom use, 2) partner failure to disclose HIV/STD status, 3) not asking status before hooking up, 4) multiple sexual partners, 5) drug use, 6) age mixing, and 7) dating apps. Quotes from ten MSMs surveyed alludes to the current trends associated with sexual risk taking behaviors among MSM in Dougherty County:

> "Asking someone to put on a condom makes it seem like you are already infected with HIV, the person you are hooking up with might say, *why you got something?* So to show that you don't, you just let it go. It might get back to someone, the town is not big enough"
>
> "Here everyone knows everyone – so you use dating apps to meet new people, it's usually a one-time thing … very fast and no exchange of info … anonymous"
>
> "My boyfriend was HIV+, I did not ask him and he didn't tell me – so later I tested positive"

A factor associated with this risky sex behavior in Dougherty County seems to be the dense population among black MSM's. Several respondents reported that they travel out of town to find new dates and to limit others knowing their business. Others reported that age mixing, or pairing young and old partners can lead to HIV transmission. Data from Dougherty County STD clinic partner services, indicate that many young MSM's are rejected by families and are forced to find new living arrangements. The young MSM's are often taken in by older MSM's who become their partners or recruit them for prostitution.

Stigmatizing Attitudes and Discrimination

Of all respondents, 33.4% reported that stigma was a major in factor in the transmission of HIV and syphilis in Dougherty County, GA. The cultural stigma towards the LGBTQ (Lesbian, Gay, Bisexual, Transgender and Questioning) population in rural Southwest Georgia provides a barrier for members of this community to achieve health equity. Social outlets and local culture norms were also an issue for those interviewed; many felt there is a lack of social opportunities that prevented stigmatization. Another contributing factor to stigmatization among the LGBTQ community is the overall culture of Southwest Georgia. Dougherty County, Ga is located in the midst of what many consider the "Bible Belt" of the South. The culture of the "Bible Belt" is thought to have established the religious foundation of the South and many of those values disapprove of the lifestyles associated with the LGBTQ population. This has led to discrimination, rejection, and stigmatization. As a result, it has prevented those who are positive from disclosing their status and has established a transient culture within the LGBTQ community.

Lack of HIV/STD Transmission-Related Education Targeting Young MSM

Lack of education surrounding HIV/STD transmission (33.4%) was felt to be another factor that strongly influences the HIV and syphilis rates in Dougherty County, GA. Majority of the all respondents were older African American MSM who felt that there is a lack in effort in targeting the younger MSM population in this area. Respondents reported that the younger generation are a lot more susceptible to engage in riskier behaviors than the older generations. One respondent stated, "The younger generation have no respect for themselves or no one else. They act reckless because they don't know any better." Another respondent, stated: "Those young boys just don't care about nobody but

themselves, it's not that they don't know what they're doing, it's how they're doing it that's causing the problems." Respondents felt that more education and prevention should be tailored and focused on the younger generation. Prevention strategies and best practices are mainly generalized to a specific audience, but views of the respondents suggest that a more segmented approach is needed to reach sub-populations within those larger target audiences.

Other Findings

Survey findings also revealed that the element of poverty was a consistent theme among all study participants. The median household income for Dougherty County, GA is $31,458.[27] Most respondents reported having a household income far below the median household income for this area ($12,000 annually), while also reporting their financial situation as being fair. The perception of having a fair financial status among most respondents, while having an annual household income less than the median household income for this area alludes to how pervasive poverty is to the area.

Although most respondents were unemployed and earned less than $12,000 a year, their perception of their income status was identified as being fair. The assumption can be made that due to lack of opportunities available in Dougherty County, a diminished quality of life is cultural norm. Unfortunately, for many residents in Dougherty County, living in poverty as the federal government defined it, is a cultural norm.

Respondents also felt that barriers to testing and treatment contributes to the increase in HIV/syphilis. The process used by the Dougherty County Health Department STD Clinic to provide a confirmed HIV or syphilis results involve the collection of blood samples to be sent to the State of Georgia Public Health Laboratory in Decatur, GA or

Waycross, GA. The timeframe from the collection of the sample to the reporting of results can take between 2 to 3 weeks. During this time, many respondents reported experiencing a level of anxiety while waiting for the confirmatory results. Also, respondents reported that many of those who test preliminary positive often continue to engage in risky behaviors. Respondents reported that residents of Dougherty County have a stigma against seeking healthcare services at the Dougherty County Health Department. Participants feel that patient confidentiality would not be upheld.

Chapter V: Conclusion

The purpose of this study was to identify a possible relationship between the social determinants of health in Dougherty County and the incidence and prevalence of syphilis and HIV co-infections. Social determinants of health are described as factors that contribute to the overall quality of life within a given population. Income, education, and access to quality healthcare are all considered to be factors that influence health outcomes within communities. Syphilis and HIV are disparities mostly associated with communities with high levels of poverty. Dougherty County health disparities that plague several communities within rural Southwest Georgia.

Summary of Study:

The HIV and syphilis incidence rates in Dougherty County are 19.48 and 25.97 per 100,000, respectively. This study was conducted with use of 15 survey responses by patients who tested positive for HIV, syphilis or both at the Dougherty County Health Department STD Clinic. Participants were asked various questions regarding their income, educational level, location of their residence within Dougherty County, sexual preference, and the views on HIV and syphilis in Dougherty County. All responses were manually coded and analyzed in SPSS.

The results of this analysis determined that all respondents were African American. Majority of the participants identified with being homosexual. Most of the respondents resided in the most impoverished Census Tract in Dougherty County. Although majority of the respondents reported having some level of education, majority of the respondents reported being unemployed with a household income of $12,000. All respondents reported being knowledgeable of the risk factors associated with acquiring

HIV and syphilis. Majority of the participants felt that the rates of HIV and syphilis are a result of positive individuals failing to disclose their status. Participants' views on the rates of HIV and Syphilis in Dougherty County were categorized in four categories: sexual risk taking behaviors, stigmatizing attitudes and discrimination, and lack of HIV/STD transmission-related education targeting social realities of young MSM population.

Study Limitations

This study was conducted with the use of patients who tested positive for HIV, syphilis or both at the Dougherty County Health Department STD Clinic. Those who tested positive must have received treatment or linkage to care at the Dougherty County Health Department STD Clinic. Although participants tested positive for HIV, syphilis or both, some patients were not eligible for the study because of non-compliance with treatment and care. The patient sample was limited due to the occurrence of positive lab results within the study timeframe. The sample was affected by the use of outside medical providers for testing and treatment and as a result, the intended number of participants were not satisfied. Majority of the patients who visits the Dougherty County Health Department STD Clinic are African American and possible bias in the sample race could have occurred.

Implications

The findings in the study has significant implications on the Dougherty County STD program. Although proper education and counseling is conducted during partner services and clinical encounters, there is still a need to reinforce the importance of limiting risky behaviors and embracing the responsibility of disclosing your status before engaging in those risky behaviors. The findings of this study also place implications on

the City of Albany's Office of Community and Economic Development. Majority of new businesses are located in areas with 0-5% poverty levels (Census Tract 5). If more opportunities were being placed in lower incomes areas, the economic status of these areas would increase.

Recommendations

Based upon the findings of this study, it is recommended that a more segmented approach be taken to address the educational deficiency regarding HIV and syphilis among younger MSM who reside high poverty areas. African American MSM have the highest rates of new HIV and syphilis infections and to reduce to rates, it is recommended that prevention strategy becomes implemented that addresses the current trends among this sub-group. Also, the findings also suggested that the geographical location of this sub-group influences the mode of transmission of both HIV and syphilis. A reduction in this rates could occur if the culture and norms of LBGTQ populations were embraced by members of this Dougherty County community. Bridging this gap could facilitate the opportunity to gain understanding of LBGTQ populations, therefore reducing stigma and rejection.

Based upon the findings from the study, it is also recommended that prevention alternatives such as PrEP be incorporated into prevention and educational strategies to reduce the transmission of HIV. Increasing collaborations between public health, CBO, FBO, City of Albany/ Dougherty County Government, colleges and universities, and Phoebe Putney's Infection Control Department can assist in increasing the level of knowledge being distributed about the transmission of HIV and syphilis in Dougherty County, GA.

Conclusion

Health is affected by where and how we live, work, play, and learn. These social determinants of health were shown to have an influence on the incidence and prevalence of HIV and syphilis co-infections in Dougherty County, GA. Particularly, the general stigma associated with HIV/STD in rural communities, the frequent repression of discussion about sexuality, and extreme pockets of poverty has proven to negatively impact health outcomes. To address HIV/STD outcomes in Dougherty County it will be important to work toward unfettered access to quality sexual health information and to address the association of health outcomes with the unique history and culture of the deep South, particularly among people of color, gay and bisexual men, and transgender people.

HIV and syphilis continues to be a significant burden in many rural communities. Sexual health education is a major determinant that influences the individual attitude and perception of specific sexual health related issues. The lack of sexual education regarding HIV and syphilis has created a barrier that is preventing those who test positive from attaining health equity. Closing the gap between sexual health education and comprehension of HIV and syphilis among Dougherty County residents can reduce stigma and improve coping mechanisms for those who test positive for HIV and syphilis. It can also promote health equity among those who test positive and improve the social effects of being positive for HIV, syphilis or both while residing in a rural community.

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APPENDIX

Figure 1: Census Tract 2 Map of Dougherty County, GA

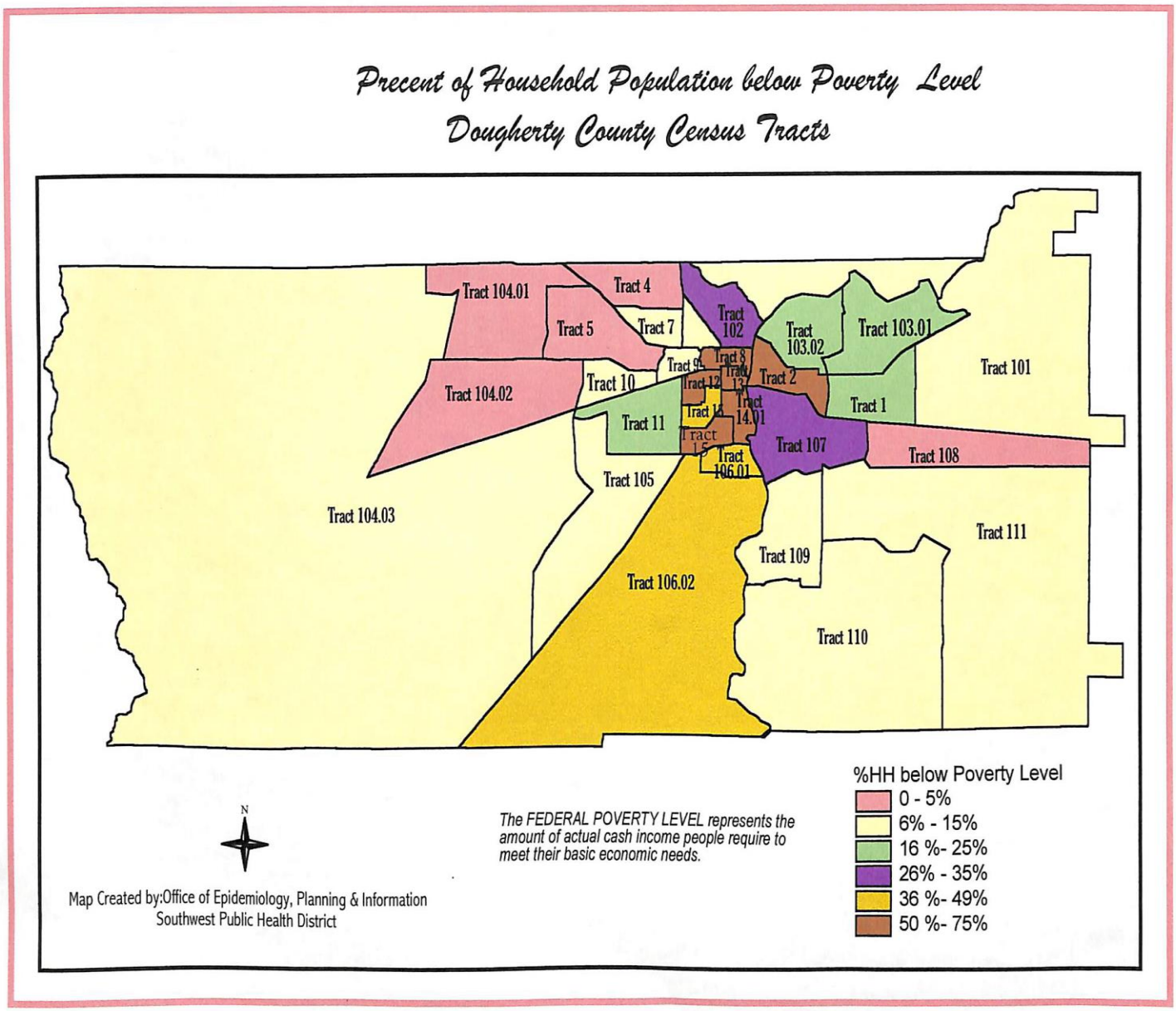
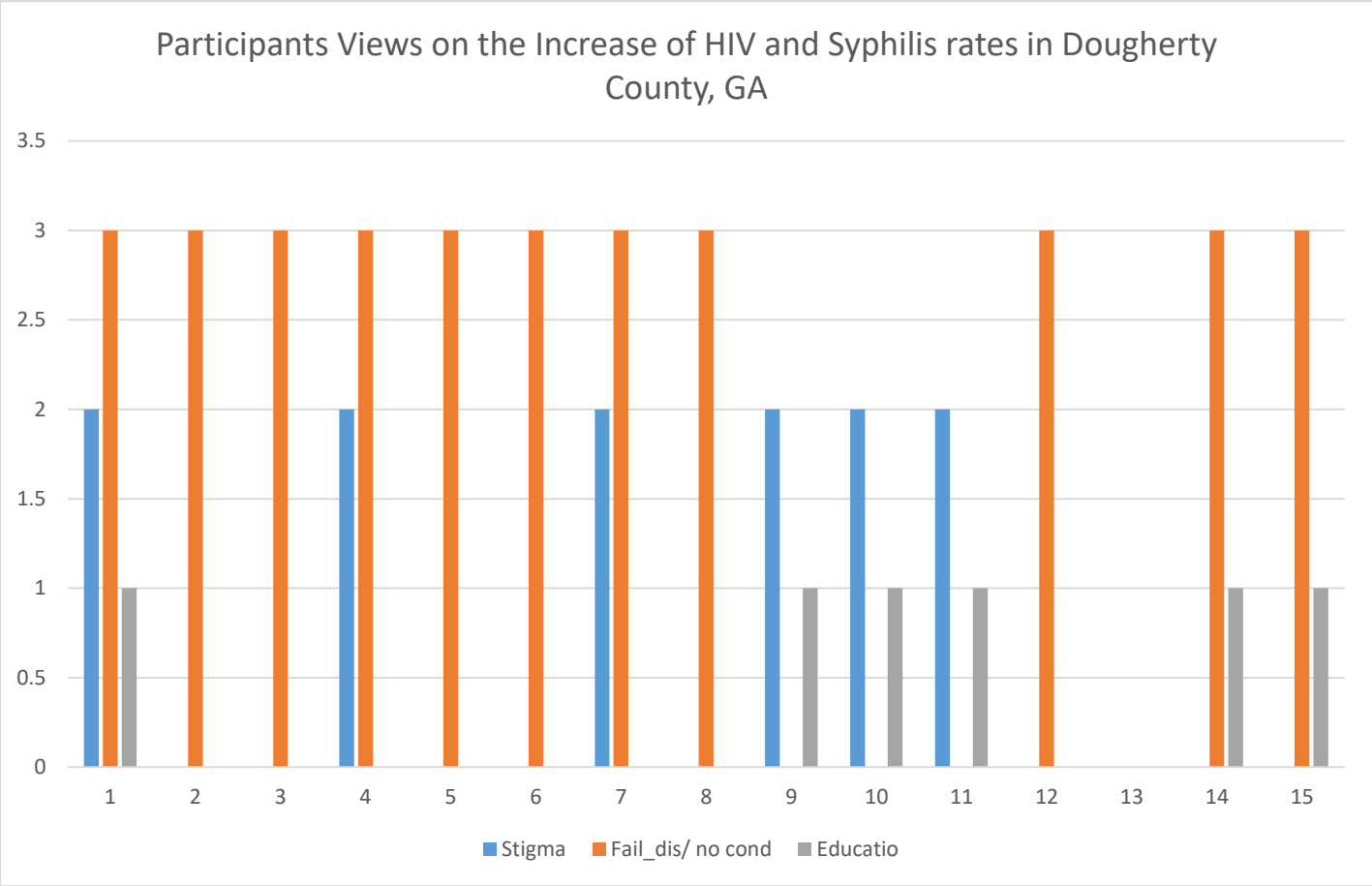


Table 1: Participants Views on the Increase of HIV and Syphilis Rates in Dougherty County, GA



Socio Determinants of Health and HIV and Syphilis Co-Infection in Dougherty County, GA Community Health Survey 2016

This community survey is part of a larger study to help determine influence of socio-determinants of health on the incidence and prevalence of HIV/ Syphilis Co-Infections in Dougherty County, GA. Filling out the survey should only take 10-15 minutes, and your responses are completely anonymous. Your opinion is important.

1. What is your gender? [ ] Male [ ] Female

2. Please check the age range that apply. [ ] 15-17 [ ] 18-25 [ ] 26-35 [ ] >35

3. What is your race?

   [ ] American Indian or Alaskan Native [ ] Asian [ ] African American

   [ ] Hispanic or Latino [ ] White

   Other (please specify) _____

4. Highest educational level completed?

   [ ] less than 12 [ ] High School [ ] Some college [ ] Bachelors Degree [ ] Master's Degree or higher

5. What geographical area of Albany, Dougherty County do you live in? [ ] East

   [ ] North [ ] South [ ] West

6. How long have you lived in Albany, Dougherty County?

   [ ] < One year [ ] 1 to 5 years [ ] 6 to 10 years [ ] 11 years or more

7. How long have you lived at your current address?

   [ ] < One year [ ] 1 to 5 years [ ] 6 to 10 years [ ] 11 years or more

8. How would you rate your own financial situation today? Would you say it is excellent, good, fair, or poor?

   Excellent_____ Good_____ Fair_____ Poor_____

9. Are you currently employed? [ ] Yes [ ] No

10. What is the range of your annual household income?

    [ ] < $5,000 [ ] $5,000- $10,000 [ ] $10,000- $15,000 [ ] $15,000- $20,000

    [ ] $20,000- $25,000 [ ] $25,000- $30,000 [ ] $30,000 - $35,000 [ ] >$35,000

11. How big of a problem is poverty in our society today?

    [ ] A big problem [ ] Somewhat of a problem [ ] A small problem

    [ ] Not a problem at all

12. How you do currently identify yourself as?

    [ ] Heterosexual [ ]Gay [ ] Bisexual [ ] Lesbian [ ] Transgender

13. Are you aware of the risk factors that are associated with acquiring HIV and Syphilis?

    [ ] Yes [ ] No

14. Dougherty County has an increased incidence and prevalence rate of HIV and Syphilis co-infections. What do you feel are the contributing factors to these statistics?