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Attitudes and Behaviors of South African Women and Psychosocial Determinants of Gonorrhea

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Abstract

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Takiyah White Ndwanya

MPH, The George Washington University, 2004

BS, Hampton University, 1999

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The incidence of gonorrhea had declined since the HIV epidemic in the late 1980s, but is now increasing globally due to the emergence of antibiotic-resistant forms of this disease. In South Africa, the incidence of gonorrhea is highest among Black women due to their high co-infection rates with HIV and other sexually transmitted infections (STIs). This study examined the psychosocial determinants of gonorrhea among Black women aged 18 – 35 in the Langa township in Cape Town, South Africa. All participants had reported at least one sexual experience and at least one positive test for gonorrhea in the past two years. Participant recruitment involved flyer distribution at LoveLife, the community partner to the research study. After an initial screening call, 12 women were considered eligible and participated in the study. Interview data were gathered, transcribed, then hand-coded for emergent themes, guided by the tenets of the information-motivation-behavioral (IMB) skills conceptual framework. The findings of the study identified that the women did not have extensive knowledge of gonorrhea but believed that factors such as a sense of vulnerability, stress in relationships, and social/environmental factors increased their risk of contracting gonorrhea disease. These findings have global implications, as they lay the foundation for follow-up quantitative studies and outline policy recommendations for addressing gonorrhea.

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Dedication

I dedicate this dissertation to my mother, Magurtha H. White, whose support, inspiration, and motivation has influenced me to complete this journey.

Acknowledgements

I want to thank my supportive husband, Mandla Andrew Ndwanya, who pushed me daily to complete this dissertation. Again, I would like to thank my rock, my mother, and my family for all of their support during my doctoral studies. Thank you Cape Town, South Africa for allowing me to come into the country a novice of the land and the people and leaving years later with a complete love and understanding of its power as a country.

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Chapter 1: Introduction to the Study

Introduction

Gonorrhea is a sexually transmitted disease caused by a bacterium, *Neisseria gonorrhoeae*. The bacterium is classified as gonococcus, which is a gram-negative diplococcus. Historically, gonorrhea is said to be referenced in biblical times because of the contagious nature of the disease, making it one of the oldest recorded human diseases. Gonorrhea is found in the biblical text of the Book of Leviticus and in ancient Chinese writings (Edwards & Apicella, 2004). The term gonorrhea or "flow of seed" was introduced in A.D.130 when the purulent discharge found in gonococcal urethritis was mistaken for semen (Edwards & Apicella, 2004, p. 965).

James Boswell, biographer of Samuel Johnson, was the first to describe the gonococcal infection as reoccurring and possibly being asymptomatic in women (Edwards & Apicella, 2004). The causative agent of gonorrhea, *N. gonorrhoeae* was found in 1879, but it was not until 1882 that the gonococcus was cultivated in the laboratory (Edwards & Apicella, 2004). In 1936, sulfonamide was used for treatment, and penicillin in 1943, which led to a decrease in prevalence of gonorrhea (Edwards & Apicella, 2004, p. 966). When the causative agent of gonorrhea became identified, even though there was a decrease in the prevalence of gonorrhea due to antibiotics for treatment, there was a peak incidence of over a million reported cases in the United States in 1978 (Edwards & Apicella, 2004) because there was now a formal way to report the identifying bacteria that was causing disease.

In the beginning of the 21st century, an increase in gonorrhea incidence has been observed globally due to the emergence of antibiotic-resistant strains of the disease. According to the Centers for Disease Control and Prevention (CDC; 2011) overall in 2009, 23.5% of isolates collected in the United States from 29 Gonococcal Isolate Surveillance Project (GISP) sites (established in 1986) "were resistant to penicillin, tetracycline, ciprofloxacin, or some combination of those antibiotics." In South Africa, as early as 2006, medical practitioners warned of growing resistance to gonorrhea drug therapy, as a study found that 60% of gonorrhea patients in a Durban clinic showed resistance to ciprofloxacin, a 43% increase over the 42% resistance level in 2005 (Kahn, 2006). Researchers also found that 29% of patients at a clinic in Johannesburg failed to respond to ciprofloxacin, compared to a 16% resistance level in 2005 (Kahn, 2006). These statistics are important because they highlight a growing rate of antibiotic-resistant gonorrhea that has the potential to affect the most sexually at-risk groups inclusive of Black women in South Africa.

The worldwide incidence of curable sexually transmitted infections (STIs), those with established treatment methods, has been estimated only from prevalence data and the estimated duration of infection because few countries outside Western Europe and North America have accurate reporting systems for STIs (Mabey, 2010). Surveillance to monitor susceptibility of patterns of the bacterium *N. gonorrhoeae* is also not a regular feature of the national STI control program in South Africa, as surveillance occurs mainly in research settings (Moodley & Sturm, 2005). It is a regular feature in the United States, as the CDC has both monitoring and evaluation of gonorrhea that is to be reported in all

clinical and community health facilities, and the data are available as a public feature on their website stratified according to demographics and geographic locations within the United States.

Close sexual contact with an infected individual is the primary mode of transmission of the bacteria that causes gonorrhea. Transmission from mother to child during delivery is another mode in which an individual can be infected with the disease. The bacteria are transmitted more effectively from men to women with a 50 to 73% probability than from an infected woman to a man with a 20 to 35% probability (Edwards & Apicella, 2004, p. 967). The reason for this disparity in rate may be correlated with the anatomical differences in the genitalia of males and females and the extended length of time that target membranes are in contact with the pathogen after sexual exposure (Hook & Handsfield, 1999). How the gonococcus colonizes determine the clinical manifestations of the disease affected by the type of strain that initiates state of disease and anatomical site of the infection (Edwards & Apicella, 2004).

Background

Gonorrhea is a gram-negative diplococcus that primarily colonizes and invades the productive mucosal epithelium in humans. This type of sexually transmitted infection continues to be a major global health problem with more than 60 million cases reported annually worldwide (Barh & Kumar, 2009). The incidence of gonorrhea is highest in developing countries although more than 300,000 cases are annually reported in the United States (CDC, 2009). Coinfection with HIV is currently a concern with distribution of gonorrhea among teenagers and young adults whom are at the highest risk of infection

because of the increase in the gonococcus-induced local expression of viral RNA. The conjunction of the viral RNA with acute inflammatory response with gonococcal disease and loss of mucosal integrity is shown to be associated with the increased susceptibility to HIV Type 1 (Edwards & Apicella, 2004). According to Muula (2008), young women in South Africa are at greatest risk of being infected with HIV with the prevalence in the age group 15 to 24 being 16.9% in women and 4.4% in men in 2005. The high prevalence among women is thought to be because of "poverty, violence against women, cultural limitations that promote intergenerational sex, non-condom use and preference for 'dry sex' (sex without lubrication and with inanimate objects), political factors and challenges that possibly prevented an aggressive response against HIV, recreational drug use, and biological factors such as high prevalence of STIs" (Muula, 2008, p. 424).

Antimicrobial resistance (AMR) to gonorrhea is the main bacterial agent that is an issue in South Africa. AMR is driven by factors such as inappropriate antibiotic management and consumption, the regulatory environment, knowledge of health care workers, and patient expectations (Gelband & Duse, 2011). The misuse of antibiotics is also fueled by impoverished living conditions, "insufficient supply of antibiotics to the public sector, the use of degraded and expired medicines, and unreliable access to diagnostic facilities and clinicians" (Gelband & Duse, 2011, p. 552). Because of the high degree of infectious disease, in particular gonorrhea, South Africa has the most active antibiotic surveillance of any African country, which is done by the STI Reference Centre in collaboration with the National Department of Health (NDoH). Public health strategies to combat antibiotic resistance, inclusive of gonorrhea, in intervention form are divided

into three categories: (a) those monitoring the extent of the problem and trends of AMR with informing key policy makers and opinion leaders on how to coordinate surveillance activities, (b) those designed to reduce the burden of infectious disease in susceptible populations and where appropriate, reduce the demand and potential overuse or misuse of antibiotics, and (c) those aimed at containing AMR to prevent the spread of disease (Gelband & Duse, 2011).

Psychosocial Predictors of Risky Behavior Leading to Gonorrhea

Some studies have suggested that there is variability among an individual's perception of susceptibility (DiClemente et al., 2008). Those who perceive that they are at risk for STIs tend to engage in less risky sexual behavior than those who do not have these perceptions. Those who feel confident about using condoms and their ability to negotiate condom use with their partners, those who refuse sexual intercourse without condom use, and those who discuss sexual matters tend to have lower rates of STIs (DiClemente et al., 2008). Other characteristics including low self-esteem, psychological distress, sexual abuse, and depression can place those at risk for STI associated sexual behaviors (DiClemente et al., 2008).

Characteristics in relationships also play an important role in risk behavior and likelihood of STI incidence. Issues that affect women and risk of STIs include lack of relationship control, engagement in short-term relationships, fear of condom negotiation with their male partner, and communicating less frequently with their partner about sex (DiClemente et al., 2008). Moreover, perceived partners' negative attitude toward

condom use has also been related to unprotected intercourse increasing the risk of infection (Brown et al., 1986).

Various societal factors have also been found to have an impact and influence on risky behaviors. Black women continue to be disproportionately affected by STIs relative to other racial/ethnic groups and males, and the influence of race/ethnicity may be confounded by a variety of environmental factors such as neighborhoods devoid of adequate community resources and extreme poverty (Arol & Wasserheit, 1995). In impoverished populations, incidence of sexual abuse is high and may be another reason for susceptibility of STIs (DiClemente et al., 2008).

Statement of the Problem

Black women compared to other ethnic groups in South Africa have disproportionate prevalence of HIV/STIs, in particular young women (Muula, 2008). However, current statistics on the prevalence of gonorrhea in South Africa, and in particular the Western Province, are lacking. Gonorrhea is becoming a health concern globally due to its susceptibility to antimicrobial resistance, and this is a concern particularly for Black women in South Africa. Understanding the psychosocial data that have an effect on the risk of gonorrhea among this population is important because only when we understand the causes of the disease, can we start to practice prevention. In this research, I explored the psychosocial factors of individual susceptibility, societal norms, and the health of the partner relationship inclusive of SES or poverty, education status, gender based violence, and cultural limitations that have a positive relationship with the

incidence of gonorrhea among Black women aged 18 to 35 in South Africa, particularly Cape Town, in the Western Province.

Purpose of the Study

The purpose of this research was to detemine the perceptions and behaviors of women in Cape Town, South Africa regarding the the psychosocial and intrapersonal risk factors for gonorrhea. The study has worldwide significance because of *N. gonorrhoeae*'s ability to develop antibiotic resistance, as current treatment protocol relies on effective antibiotic therapy.

Research Question

What is the experience of South African women regarding the psychosocial determinants of gonorrhea?

Conceptual Framework

According to literature, the IMB model provides a useful conceptual framework to understand the primary determinants of HIV preventive behaviors (inclusive of STIs; Fisher& Fisher, 1992). This model integrates constructs from psychological theories of health and behavior, the theory of reasoned action, efficacy theory, and the health belief model. It assumes that information, motivation, and behavioral skills are the primary determinants of STI/HIV preventive behaviors (Boyer et al., 2000). The model asserts that information about how to transmit and prevent STIs/HIV is a prerequisite of risk-reduction behavior. Motivation (psychosocial factors) to change risk behaviors is a determinant of prevention and affects whether one acts on one's knowledge regarding the

transmission and prevention of STI/HIV and that motivation to engage in preventive behaviors.

The critical factors that influence motivation are perceived vulnerability to STIs/HIV and intention to engage in preventive behaviors regarding STIs/HIV (Boyer et al., 2000). The behavior skills for engaging in preventive behaviors is the third determinant and affects whether even a knowledgeable, highly motivated person will be able to change his or her behavior to prevent negative health outcomes (Boyer et al., 2000). The skills needed to possess and practice these preventive behaviors include the ability to communicate effectively with one's sexual partner about safer sex, refuse to engage in unsafe sexual practices, and properly use condoms, and these are presumed to have a strong self-efficacy in their ability to make changes in their sexual behavior (Boyer et al., 2000).

Nature of the Study

In this study, I used a qualitative research design to identify themes and topics from the study participants in order to better understand sexual habits that lead to gonorrhea. The key concept studied is the IMB theory that was used to define the constructs that affect risk-reduction behavior among Black women. Using the qualitative design methodology through interviews allowed the women study participants to share their ideas on the psychosocial and behavioral manifestations that affect their sexual habits. The study population included Black women from a township called Langa in Cape Town, South Africa. Townships in South Africa are historically black African and first language Xhosa speakers. The sample size was 12 women from one clinic located in

LoveLife (a nonprofit organization for youth in the Langa township). Although it is a small sample size, there were enough participants to elicit rich data for the qualitative study due to the number of interview questions given in the questionnaire.

Data collection included individual one-on-one interviews. Data analysis began with transcription of the focus groups and coding of themes found from the one-on-one interviews with study participants. LoveLife, as the community partner, allowed the use of their volunteers (Groundbreakers) for translation and assistance with distributing study participant recruitment flyers as well as their LoveLife facility in Langa to host the interviews in a confidential area (the boardroom).

Operational Definitions

Antigenic variation: The expression of functionally conserved moieties within a clonal population that are distinct where the genetic information for producing a family of variants is available in the cell, but only one variant is expressed at a given time (Van der Woude & Baumler, 2004).

Antimicrobial resistance: Occurs when an infection caused by resistant microorganisms fails to respond to conventional treatment, resulting in prolonged illness and greater risk of death (WHO, 2011).

Endocervical gonorrhea: The most common form of uncomplicated gonorrhea, usually characterized in women by vaginal discharge (Todar, 2011).

Gonococcal ophthalmia neonatorum: An ocular infection among neonates who are exposed to infected secretions in the birth canal; it is caused by *N. gonorrhoeae, and* can have serious consequences of corneal scarring or perforation (Todar, 2011).

LOS (lipooligosaccharide): A bacterial lipooligosaccharide released by autolysis of cells during infection of gonorrhea (Todar, 2011).

Mode of transmission: The method by which a pathogen enters the body; it can be direct (through direct physical contact) or indirect (when an agent is transferred or carried by some other intermediate means (Merrill, 2010).

Mucosal integrity: Bacteria associated with gonorrhea infection affect mucous membranes of various areas characterized by a purulent discharge usually involving the urethra, cervix, rectum, pharynx, and conjunctiva (Todar, 2011).

Opa (*opacity associated outer membranes*): One or several outer membrane proteins that are subject to phase variation and are usually found on cells from colonies possessing a unique opaque phenotype called O+ (Todar, 2011).

Pathogenesis: The process of how a disease is caused that depends on the immune status of the host, the nature of the species or strain, and the number of organisms in the initial exposure (Fox, 2010).

Phase variation: A reversible switch between an on/off expressing phase, resulting in variation in the level of expression of one or more proteins between individual cells of a clonal population (Van der Woude & Baumler, 2004).

PID (*pelvic inflammatory disease*): Infection of the uterus, fallopian tubes, and other reproductive organs that cause lower abdominal pain and is a serious complication of STIs such as gonorrhea, which can lead to serious consequences like infertility, ectopic pregnancy, abscess formation, and chronic pelvic pain (CDC, 2011).

Porin expression (*PLA or PLB*): A major porin protein in the outer membrane of the bacterium thought to be the invasion that mediates penetration of a host cell (Todar, 2011).

Psychosocial factors: Exposure(s) that may influence a physical health outcome through a psychological mechanism (Macleod & Smith, 2003).

Quinolone-resistance: The process by which bacteria can mutate to acquire quinolone resistance by target alterations or diminished drug accumulation (Martinez-Martinez et al., 1998).

Reservoir: The medium of habitat in which pathogens or infectious agents thrive, propagate, and multiply and can be humans, animals, or certain environmental conditions such as food, feces, or decaying organic matter (Merrill, 2010).

Rmp (*PIII*): The outer membrane protein found in all strains of *N. gonorrhoeae* that does not undergo antigenic variation and is found in a complex with Por and LOS (Todar, 2011).

Superbugs: Bacteria that have mutated and become resistant to multiple classes of antibiotics (Ohnishi et al., 2011).

Susceptibility: Based on level of immunity to which degree an organism is open to impairment of normal operations due to immune weaknesses. Natural immunity can come from the genetic makeup, whereas active immunity occurs when the body develops antibodies and antigens in response to a pathogen invading the body, and passive immunity comes from antibodies entering a baby through the placenta (Merrill, 2010).

Virulence factors: Gene properties that enable a microorganism to establish itself on a host of particular species and enhance its potential to cause disease, such as bacterial toxins or cell surface proteins that mediate bacterial attachment (Chen et al., 2005).

Assumptions, Scope, Limitations, and Delimitations

One assumption of this study was its narrow focus on one city in Africa, and that a convenience sample of 12 Black women aged 18 to 35 in Cape Town, South Africa, would large enough to draw adequate conclusions on psychosocial and behavioral determinants of gonorrhea that could be used as variables in quantitative study.

The scope of this study was the Western province of Cape Town. The data obtained can add to critical scientific evidence pertinent to policymakers in South Africa, nongovernment organizations (NGOs), and the community at large.

Limitations in this study include determination of which actual psychosocial determinant(s) influence risky behavior with gonorrhea. Another limitation is that the responses in the individual interviews were based on self-recall of determinants and behavior that could cause recall bias. The types of responses could affect social desirability or stigma; social desirability bias occurs when respondents provide answers they think are socially acceptable instead of reflecting true behavior patterns, and this could lead to information bias in the study.

Delimitations of the study are women from other age groups, under age 18 and above age 35. The age interval was intentional because of the high rates of infection among this age group. Women under 18 may not fully understand the clinical verbiage used to define degrees of psychosocial determinants, and women over the age of 35 are

not considered significantly at risk of gonorrhea infection. I will also not cover women of other races and ethnicities because based on the epidemiological profile and alarming statistics of HIV/STI infection rates of Black women.

Significance of the Study and Social Change Implications

The social change significance of the research is that it outlines the psychosocial factors that have a significant effect on the incidence of gonorrhea among these women in South Africa, laying the foundation of larger quantitative studies and the development and implementation of tailored intervention programs.

Summary

Gonorrhea is a bacterial sexually transmitted disease that is becoming more prevalent among Black women in South Africa. The concern gonorrhea's AMR is rapidly forming in the country because of the misuse of antibiotics and inappropriate antibiotic management. South Africa is known for its high incidence of infectious diseases, with gonorrhea being one of them, so currently there are public health strategies being put in place to combat the impending resistance prevalence. However, Black women in South Africa continue to have disproportionate incidences of gonorrhea, in particular in the Western Province, the location of this study. The study addressed exploring the individual, interpersonal, and social factors that affect the risk of disease among Black women in the Western Province. The conceptual framework used in this study is the IMB model, which integrates information, motivation, and behavioral methods to determine the risk of a target population to specific health outcomes in this study, gonorrhea. Qualitative data collection and analysis was conducted in Langa Township in the Cape

Town area of the Western Province. The significance of the research is the development and implementation of tailored interventions for target populations of gonorrhea prevalence. In the proceeding chapters, a literature review of gonorrhea globally was reviewed, methodology of the research outlined, results from data collection and subsequent analysis of the data, and a conclusion of discussion and recommendations.

Chapter 2: Literature Review

Introduction

This chapter includes a literature review that addresses the epidemiology of gonorrhea in South Africa and worldwide, clinical aspects of gonorrhea, and the psychosocial constructs that have effects on the incidence of gonorrhea. Gonorrhea is particularly a concern in women because of their susceptibility to chronic complications and the asymptomatic nature of the disease in women. About 45% of infected women are at risk of pelvic inflammatory disease (PID) that can cause infertility or tubal scarring of which *N. gonorrhoeae* is the etiologic agent in 40% of reported cases (Edwards & Apicella, 2004). The purpose of this research was to detemine the psychosocial factors and intrapersonal aspects among women from Cape Town, South Africa regarding the incidence of gonorrhea. The psychosocial determinants found in literature that have an effect on the incidence of gonorrhea in South Africa are identified as per the conceptual framework on the individual level, in partner relationships, and in society. Individual factors include information (knowledge of risk), vulnerability, substance abuse, and mental health. Partner relationship dynamics include sexual power and gender based violence. Society is inclusive of SES and cultural limitations. These factors were assessed in individual interviews among Black women in the Langa township.

Literature Search Strategy

Initial research was done using Walden University's online library using Academic Search Complete, CINAHL Plus with Full Text, Health and Psychosocial Instruments, MEDLINE with Full Text, ProQuest Health and Medical Complete,

PsycARTICLES, PubMed, and PsychINFO during the years 2011to the present to find articles relating to the research of Black women and gonorrhea with emphasis on urban areas and in South Africa using the following keywords individually or in combination: *gonorrhea, women, black, health surveys, incidence, urban, South Africa, risk factors/risk taking, sexual behavior, STIs/STIs, epidemiology, interviews, prevalence, gonorrhea and Africa, gonorrhea and Canada, gonorrhea and America, psychosocial factors and disease,* and *SES as a determinant of disease*. Although some of the research cited in this document is dated, this is the most up-to-date information available on the topic.

Conceptual Framework

The IMB model is a three-factor conceptualization of risk-reduction behavior (Fisher& Fisher, 1992). This model views specific preventive behaviors within the population of interest in order to reduce risk of disease. The fundamental determinants of disease risk reduction are information, motivation, and behavioral skills. The constructs of the model assume that disease-risk-reduction information and motivation work through disease-risk-reduction behavior skills to affect disease-risk-reduction behavioral change as shown in Figure 1.

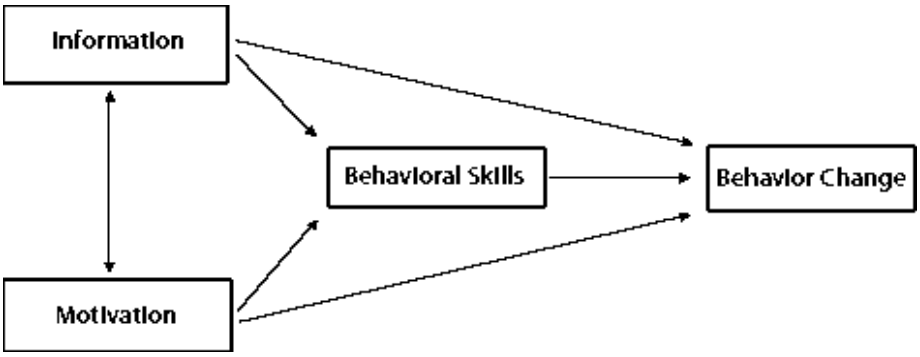

Figure 1. IMB skills model. From "Changing AIDS risk behavior," by J.D. Fisher and W.A. Fisher, 1992, *Psychology Bulletin, 111*(3), p. 465. Reprinted with permission.

Specifically, in regards to this research, the model addressed the constructs that gonorrhea-risk-reduction information and risk-reduction motivation activate behavioral skills resulting in risk-reduction behavioral change and maintenance of change (Fisher & Fisher, 1992) as shown in Figure 2.

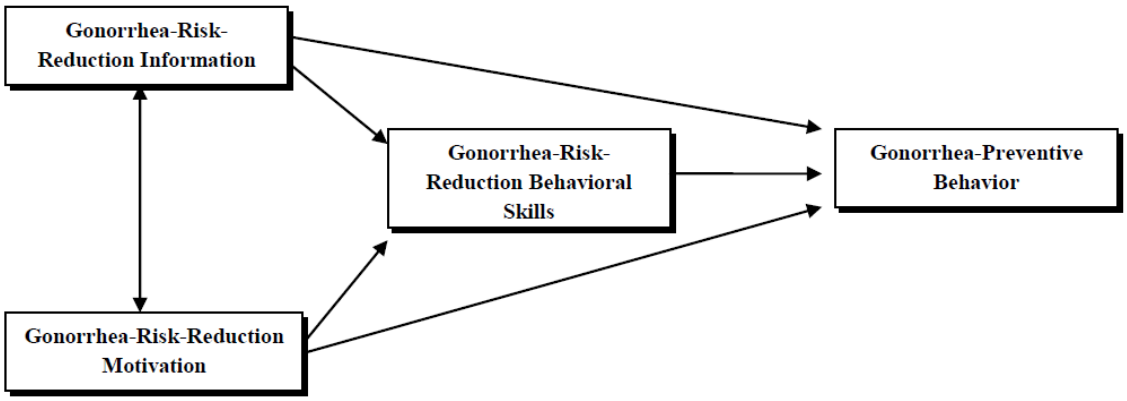

Figure 2. Information-motivation-behavior skills model I created from Fisher's IMB model to make it specific to gonorrhea research.

The research conducted by Fisher and Fisher (1992) began with a literature search of the most effective intervention strategies to combat HIV/AIDs. After evaluating several strategies, the authors selected an intervention that was group-specific and focused on providing AIDS-risk-reduction information, motivation, and behavioral skills; this was judged to be the most "impactful and sound basis for intervention" (Fisher & Fisher, 1992, p. 463). The factors for AIDS-risk behavior change are the following:

- *Information* regarding the means of AIDS transmission and information concerning specific methods of preventing infection are necessary prerequisites of risk-reduction behavior;

- *Motivation* to change AIDS-risk behavior is a second determinant of AIDS prevention and affects whether one acts on one's knowledge regarding AIDS transmission and prevention;
- *Behavioral skills* for performing specific AIDS-preventive acts are a third critical determinant of prevention and affect whether even a knowledgeable, highly motivated person will be able to change his or her behavior in an AIDS-preventive fashion (Fisher & Fisher, 1992, p. 464).

The constructs for the model are considered salient factors for preventive behaviors in any target research population and should be specific to that population being studied. With this, the specific types of information and motivation for Black women in regards to HIV/STIs preventive behavior may be different than for another demographic group. The methods for this conceptual framework have to be varied and tailored to the diverse populations to be effective. The IMB model also outlines steps to applying the conceptual framework to promote disease risk reduction. First, research has to be conducted to identify the population's existing level of disease risk reduction knowledge, the factors that determine the population's motivation to reduce risk, and the existing disease prevention behavioral skills (Fisher & Fisher, 1992, p. 464). Second, with these data, population-appropriate interventions have to be created to invoke change in the knowledge, motivation, behavioral skills, and then specific disease preventive behaviors (Fisher & Fisher, 1992). Lastly, evaluation research has to be conducted to determine if the intervention produced any short- or long-term behavioral changes. The

use of this theory was the basis for the guiding interview questions used in the research study.

A tailored study was conducted in the Western Province of South Africa to examine condom use promotion among Xhosa speaking women living with HIV (Saleh-Onoya et al., 2009). The research findings showed that strong social support and positive coping may reduce transmission risk behaviors among HIV-positive women in South Africa and that personal and partner-related attitude towards condom use, assertive negotiation skills of condom use and positive self-esteem are proximal determinants of the frequency of condom use among the women in this population (Saleh-Onoya et al., 2009). This program was proven effective in reducing unprotected sex and the incidence of *N. gonorrhea* as well as in changing psychosocial determinants of condom use. For this particular study in regards to black African women in the Western province of South Africa, the psychosocial predictors of risky behavior leading to gonorrhea infection will focus on solely on individual, relationships, and society influences aligned to the information, motivation, and behavioral skills construct model.

Incidence and Prevalence of Gonorrhea Worldwide

Gonorrhea is the most common bacterial STI in the world. The World Health Organization (WHO) estimates that over 498 million new cases of STIs are diagnosed each year from ages 15 to 59 years old (WHO, 2008). Among those estimates, about 106 million are cases of *N. gonorrhoeae* (WHO, 2008). There was a 21% increase in the global incidence estimates for 2005 and 2008 in *N. gonorrhoeae* from 87 million cases in 2005 to 106 million cases in 2008 (WHO, 2008). The prevalence of *N. gonorrhoeae* was

found to be 36 million adults infected at any point in 2008 (WHO, 2008). In the recent years, antibiotic resistance has been found in many countries, such as Norway, England, Austria, France, Canada, Vietnam, England, Wales, and Sweden with 31% having decreased susceptibility to treatment (Duplessis et al., 2015). The epidemiology of *N. gonorrhoeae* is different in developed countries, and from the beginning of the 20th century with peaks of reported cases in developed countries occurring during World Wars I and II, and following the "sexual liberation" of the late 1960s and early 1970s (Aral & Holmes, 1990). Since that time, there has been a sharp decline in the incidence of disease in many western countries, occurring first in countries of Northern Europe. This was seen in Sweden where the reported cases decreased from 487 per 100,000 in 1970 to 31 per 100,000 in 1987 and below 10 per 100,000 in 1994 (Ramstedt, 1995). The decline has been attributed to improved screening programs and partner notification of cases of STIs (Alary, 1997).

Incidence and Prevalence of Gonorrhea in Africa

The WHO estimates that the total number of new cases of STIs in the African Region was 93 million and among that number, there were 21 million cases of *N. gonorrhoeae* (WHO, 2008). According to a study based in Ghana, gonorrhea is one of the most prevalent STIs worldwide, with a major percentage found in developing countries (Duplessis et al., 2015). There was variation of STI prevalence among African countries and targeted populations in studies of adults presenting with STI symptoms with a gonorrhea diagnosis of 0.4% in Congo, 5.7% in Benin, 8.4% in Tanzania, 17.1% in Malawi, and 1.4% in Zambia (Duplessis, 2015, p. 20). The study in Ghana was conducted

because of the increasing antibiotic resistance to treatment requiring gonorrhea surveillance and public health response including: (1) expedited identification and subsequent containment of resistant isolates mitigating transmission, (2) optimization of individual-level treatment, (3) contributions to local, regional, and national surveillance, (4) support for epidemiologic investigations, (5) facilitation of lab capacities in cultures, (6) identification of risk factors for gonorrhea and resistant forms of gonorrhea (Duplessis et al., 2015, p. 19).

In Africa, data from surveys show that the bacteria causing gonorrhea is the most important cause of male urethritis accounting for 53 to 80% of cases reported at urban STI clinics in large African cities (Alary, 1997). Among women, the prevalence of gonorrhea ranges from 20 to 40% among prostitutes, and 3 to 10% among pregnant women (Alary, 1997). These high prevalence rates are due in part to poor accessibility to diagnostic tests, inappropriate treatments, including the inappropriate use of antibiotics leading to the development of resistant strains of the disease. In other developing countries with high prevalence of gonorrhea, the gonococcal strains that are resistant to antibiotics are high with penicillinase-producing *N. gonorrhoeae* (PPNG) at 15 to 80% of isolated strains and tetracycline resistance at 20 to 65% (Alary, 1997, p. 2). Chromosomal resistance is also frequently found in countries with high incidences (Knapp et al., 1994). Because there are a few countries outside of Western Europe and North America that have accurate reporting systems for STIs, inclusive of South Africa, the incidence of infections expressed as the number of new cases per 100,000 per year is unknown (Mabey, 2010).

Incidence and Prevalence of Gonorrhea in the United States

Gonorrhea is the second most common notifiable disease in the United States with 333,004 cases reported in 2013 (CDC, 2013). This number is thought to represent an underestimation of the actual disease burden because of under diagnosis and underreporting but was actually estimated to be approximately 718,000 gonorrhea cases in 2000 (Weinstock et al., 2004). After national implementation of gonorrhea control activities in the 1970s, the incidence of gonorrhea in the United States declined with a 74% reduction in rates from 1975 to 1997. Although the rates remained relatively stable over the decade, the rate of reported gonorrhea in the United States was 106.1 cases per 100,000 in 2013, a small decrease of 0.6% since 2012; the rate however during 2009 to 2013 increased 8.2% during these years (CDC, 2013).

By region, in 2013, the South had the highest gonorrhea rate among the four regions of the country, and although the rate declined for years, in 2006 it rose by 12.3% from 2005 to a rate of 159.2 cases per 100,000 people, and is currently at 128.6 cases per 100,000 (CDC, 2013). The rate in the West continued to increase by 15%, whereas the rate in the Northeast decreased by 7.3% and in the Midwest 108.6 cases per 100,000 (CDC, 2013). Demographic trends were identified via the National Electronic Telecommunications System for Surveillance.

The rates of gonorrhea continued to be highest among African Americans in 2013 with 426.6 cases per 100,000 occurring 12.4 times greater than the rate among whites with 34.5cases per 100,000 (CDC, 2013). African American women aged 20 to 24 disproportionately had the highest gonorrhea rate of any ethnicity group of 1,949.1 per

100,000, followed by 15 to 19-year-old African American women of 1,768.5and 20 to 24-year-old black men of 1,734.5 per 100,000(CDC, 2013). The rates were 4.0 times greater among American Indian/Alaska Natives with 137.4 cases per 100,000 and 1.9 times greater among Hispanics with 65.8 cases per 100,000 than whites in 2013. Asians at 17.1 cases per 100,000 were 0.5 times lower than whites in 2013 (CDC, 2013). These data are conclusive that gonorrhea is not only a concern in South Africa, but globally.

In the United States, surveillance data show that there are higher rates of reported STIs among racial and ethnic groups compared to whites (CDC, 2012). The disparity may be due to social and economic conditions such as high rates of poverty, income inequality, unemployment, and low educational attainment, making it difficult for individuals to protect their sexual health (CDC, 2012). Moreover, people who struggle financially who do not have health insurance, Hispanics who have undocumented citizenship status, those who have trouble accessing and affording sexual health services when healthcare is available, the fear and distrust of health care institutions on those seeking services as well as issues on social discrimination provider bias are considered determinants to the risk of gonorrhea among minority groups in America (CDC, 2012).

Incidence and Prevalence of Gonorrhea in Canada

STIs in Canada are a concern in Canada with rates of gonorrhea increasing among adolescents and young adults (Allen & MacDonald, 2014). Female adolescents aged 15 to 19 years old have been increasing more rapidly than men and this is thought to be because of the underestimation of female cases due to the asymptomatic nature of gonorrhea in women (Allen & MacDonald, 2014). An increase in antimicrobial resistant

gonorrhea has also been observed in Canada presently. A comparison analysis was conducted of sexually transmitted infection rates for North America's Arctic countries from 2003 to 2006. In this analysis, cases of gonorrhea in Canada have increased from 26 cases per 100,000 in 2003 to 33 cases per 100,000 in 2006 (Law et al., 2008). The highest gonorrhea rates were in the Arctic with 1,738 cases per 100,000 people, where the rates were high for women and men; the highest incidence was found in young women in their early twenties (Law et al., 2008).

Historically in Canada, the trends have been declining similarly to those in other developed countries and showed a dramatic decrease from 223 per 100,000 in 1980 to 19 per 100,000 in 1995 and occurring in both men and in women. Among women, the highest incidence rate before 1985 was found in ages 20 to 24; from 1985 to 1995, rates were higher among women aged 15 to 19. There was a decline in 1994 among women 15 to 19 and 20 to 24 and declined to 89 per 100,000 and 73 per 100,000 (Alary, 1997, p. 3). In men, the highest rates from 1980 to 1995 were found in ages 20 to 24, but decreased from 1,000 per 100,000 in 1980-1981 to 70 per 100,000 in 1995 (Alary, 1997, p. 3). The Northwest territories (NWT) and Yukon of Canada had the highest rates of gonorrhea, and rates in British Columbia, Manitoba, Saskatchewan, and Alberta were higher than the national rate in 1995; the incidence rate was 164 per 100,000 in NWT compared the national rate of 19 per 100,000. Data from provincial areas in Canada with the highest gonococcal rates are in the regions with high concentrations of "first nation's people"; in the province of Quebec, 106 of the 755 reported cases came from the Nunavik area with Inuit people (Alary, 1997, p. 4). This conclusion was also observed in Manitoba.

Clinical Aspects of Gonorrhea

Gonorrhea is a bacterial disease transmitted sexually in columnar and transitional epithelium that differs in males and females, determining the differences in severity and case of recognition of the disease. Its spread through sexual contact including penis to vagina, penis to mouth, penis to the rectum and mouth to vagina contact and perinatally from mother to child and during birth (Virginia Department of Health [VDH], 1997). In males, the disease is usually symptomatic where the gonococcal infection presents as an acute purulent disease from the anterior urethra with dysuria within 2-7 days after exposure (Heymann, 2008). The gram stain is highly sensitive and specific for the inflammation found in symptomatic males. Only a small percentage of men are asymptomatic for the infection. If left untreated in males, they may suffer from swelling of the testicles and penis as well as sterility due to urethritis.

Gonorrhea is particularly a concern in women over men because of susceptibility to chronic complications and the asymptomatic nature of the disease in women. About 45% of infected women can result in pelvic inflammatory disease (PID) that can cause infertility or tubal scarring of which *N. gonorrhoeae* is the etiologic agent in 40% of reported cases (Edwards & Apicella, 2004). It is considered an exclusive human pathogen that primarily infects the urogenital epithelia. Studies have been conducted to look at the molecular mechanisms used by *N. gonorrhoeae* in disease progression and transmission to build a model of the differences in the gonococcal pathogenesis of the disease found in men versus women.

There are currently no animal models that closely mimic human disease that can efficiently be used to study the pathology of the bacterium. The research has relied on human volunteers, tissue and organ cultures, and immortalized or malignant tissue culture cell lines to study gonococcal pathogenesis (Edwards & Apicella, 2004, p. 967). Found through the study was that the gonococcus senses and adapts to a particular host microenvironment when found from the different mechanisms used by the bacterium to invade mucosal surfaces and to survive in the presence of human serum (Edwards & Apicella, 2004, p. 975). In men, the reason that they are more symptomatic than women is because the bacteria colonizes in the male urethral epithelium in the presence of transferrin or lactoferrin and produces cytokines that contribute to observed cytokine release and inflammation. The bacteria are able to bind to human sperm, which aids to the transmission of gonococci to a sexual partner. In women, the absence or presence of sialic acid on the gonococcal surface highly affects whether transmission from a male to female occurs. The interaction of gonococci with the uterine cervix is "mediated by the cooperative actions of host and gonococcal constituents" (Edwards & Apicella, 2004, p. 975). The results of the study were that there are complex mechanisms that occur in men and in women with the gonococcal bacterium that causes the sexually transmitted disease of gonorrhea, and it is extremely important to understand the pathogenesis of the disease in order to eliminate or ultimately eradicate infection.

In females, most are asymptomatic, but in those that are symptomatic, the infection is followed by mucopurulent cervicitis (MPC), abnormal vaginal discharge or vaginal bleeding may be observed after intercourse. Some women may experience

burning while urinating and abdominal pain. About 20% of women may experience uterine invasion during menstruation, with endometritis, salpingitis or pelvic peritonitis. Prepubescent girls may develop gonococcal vulvovaginitis through direct genital contact with exudates from infected people during sexual abuse (Heymann, 2008). If left untreated in women, complications may develop including pelvic inflammatory disease (PID); a condition that occurs when the infection spreads throughout the reproductive organs that can make women unable to have children or cause risk for ectopic pregnancy.

Specifically in women and homosexual males, pharyngeal and anorectal infections can occur. Gonococcal pharyngitis is clinically indistinguishable from any other bacterial pharyngitis and asymptomatic in about 60% of the cases (Nelson & Williams, 2007). Natural history studies have demonstrated that gonococcal pharyngitis is a self-limited syndrome and uninfected patients become culture-negative after 4-6 weeks, but transmission through oral sexual exposure can occur when asymptomatic (Nelson & Williams, 2007). Although infection of the pharynx and rectum may be asymptomatic, in anorectal infections approximately 50% may have pruritus, constipation, rectal pain, tenesmus and discharge. Anorectal disease can occur in women with endocervical gonorrhea and who have not necessarily had receptive rectal intercourse, but in those cases infection presumed to have occurred in secretion across the perineum; 30% of those women have coexistent rectal infection (Nelson & Williams, 2007).

Gonococcal conjunctivitis in newborns can result in blindness if not rapidly treated. It can be transmitted by direct exposure to an infant passing through the birth

canal of an infected cervix, and is estimated to happen to about 42% of infants exposed in this way (Heymann, 2008). It is a severe public health problem in developing countries and can be prevented by inexpensive prophylaxis. Septicemia may occur in 0.5-1% of all gonococcal infection and can result in arthritis, skin lesions and although rare, endocarditis and meningitis (Heymann, 2008). Commonly seen in women during pregnancy, gonococcal septicemia is also more common in persons with deficiencies of the terminal complement components (Nelson & Williams, 2007, p. 971). Arthritis can produce permanent joint damage if appropriate antibiotherapy is delayed and death is rare except for persons with endocarditis or other underlying health conditions.

Gonorrhea is diagnosed through cultures that involve operational considerations that are logistical and environmental. Nucleic acid amplification techniques (NAAT), i.e. polymerase chain reaction and standard displacement are widely used and represent 75% of gonorrhea tests performed because they are highly sensitive and can be used with nongenital samples such as urine that makes screening more convenient to populations that may not have accessible clinical services (Nelson & Williams, 2007). According to Heymann (2008), diagnosis made by gram stain of discharge, bacteriological culture on selective media, or tests that detect gonococcal nucleic acid. To be considered diagnostic in males through urethral smears, typical gram-negative intracellular diplococci have to be present; in women are considered diagnostic if seen in cervical smears with a sensitivity of 90-97%, but are not considered sufficiently sensitive in women to reliably rule out infection (Heymann, 2008, p. 262). Selective media cultures, presumptive identification with both macroscopic and microscopic examination, biochemical testing,

and nucleic acid detection tests are sensitive and specific and in order to satisfy accurate diagnosis because of legal implications at least two different methods are recommended (Heymann, 2008).

Treatment of gonorrhea infection depends on the complexity of the case and area of infection. In non-complicated cases, clinician use a single-dose regimen that they know will be as close to 100% effective as possible at all infected sites in order to have a very high efficacy (Moran, 1994). Having high efficacy is important to minimize the chance of complications in the patient, to eliminate the spread of infection to others, and to avoid the need for follow-up test of cure which is expensive and inconvenient (Moran, 1994). Specifically, the single-dose regimens, preferably given orally, but also offered by injection, are usually effective against the bacteria causing the disease. Current regimens include quinolone or a third-generation cephalosporin, but all patients recommended for treatment with chlamydia as well, with either Azithromycin 1 gram (single dose) or Doxycycline 100 mg twice daily for 1 week (Moran, 1994).

The chlamydia recommendation is based on the high rate of coinfection with gonorrhea at 30-40% (Nelson & Williams, 2008, p. 972). It is also recommended to treat both simultaneously in order to inhibit the emergence of antimicrobial-resistant gonococci. Treatment failure is rare but in high-risk patients, retesting is recommended after 3 months in order to detect asymptomatic infections. Patients with gonococcal infections are at increased risk of HIV infection so counseling and testing of HIV is recommended (Heymann, 2008). Even though antibiotics tend to be effective at most of infected sites of men and women including the male urethra, cervix, and rectum, but can

be more difficult to cure in pharyngeal infections (Moran, 1994). In the case of pharyngeal infections, treatment include ceftriaxone IM (125 mg single dose), or ciprofloxacin PO (500 mg single dose) in areas without widespread quinolone resistant *N. gonorrhoeae* (QRNG) (Moran, 1994).

A study was conducted by Moran (1994) to look at the efficacy of antimicrobial regimens against *N. gonorrhoeae* infection of sites other than the urethra and cervix. The goal of the study was to learn whether modern anti-gonococcal agents eradicate infections at mucosal sites less reliable than other sites. The design of the study was a review of published therapeutic controlled and uncontrolled trials of various regimens for the biological cure of uncomplicated mucosal *N. gonorrhaoeae* infections; the data aggregated by treatment regimen and cure rates calculated by site of infection. The results showed that out of 16,737 evaluable infections, 96.4% were cured. The cure rates were between 95.3% and 98.4% at all rectal and urogenital sites; cure rates significantly lower at the female pharynx at 83.2% and male pharynx with 79.2%. A correlation found between efficacy at the male urethra and pharynx, with most regimens being highly effective at the male urethra also being effective at the pharynx with 80%, and most regimens less effective at the male urethra were less effective at the pharynx at 67.4% (Moran, 1994, p. 40). This research is important because of the transmission implications that saliva can carry the bacteria and the risk of transmission depend on transmissibility and how long pharyngeal gonorrhea is infectious, which can have potential complications in the individual including symptomatic pharyngitis and disseminated gonococcal infection (Moran, 1994, p. 42).

Explanations given in the study as to why pharyngeal infections are resistant to treatment are that some gonococcal strains that infect the pharynx are, on average, less susceptible to antimicrobials. Additionally, persons that expose their pharynges to gonococcal strains in high-risk sexual behavior (i.e. commercial sex workers) are more likely to become infected with strains that have decreased susceptibility to antimicrobials because of a link between engaging in oral sex and behaviors associated with being infected by less susceptible strains (p. 42). Another possible explanation is that antimicrobials are less effective against gonococci in the pharynx than at other sites of infection. A limitation of the study was that the data used in the study were gathered from published reports rather than from prospectively gathered data in a study designed specifically to answer the research question, which could have presented bias to the study.

An alarming trend in microbial resistance of gonorrhea among high risk populations is currently affecting South Africa at a rapid rate. As surveillance to monitor the susceptibility patterns of *N. gonorrhoeae* is not currently a part of the national STI control program in South Africa, but occurs mainly in research settings, testing of the susceptibility of the *N. gonorrhoeae* isolates have been done since 1995 at the Prince Cyril Zulu Centre for Communicable Disease in Durban (Moodley & Sturm, 2005). Up until 2002, all isolates were susceptible to the treatment of ciprofloxacin, but in November 2003, reports of treatment failures due to ciprofloxacin-resistant *N. gonorrhoeae* appeared at a prevalence rate of 22% (Moodley & Sturm, 2005). As a result of this new data from the clinic, the National Department of Health in South Africa

(DoH) decided to do susceptibility surveillance at a few clinics in the Durban area. From January to March of 2003, 259 isolates were obtained from the clinics and the prevalence of the ciprofloxacin-resistant isolates was 24%, resulting in the DoH changing its guidelines from retreatment of patients with ciprofloxacin to ceftriaxone in patients whose disease failed to respond to the first-line treatment (Moodley & Sturm, 2005).

A major threat to treatment of gonorrhea is that the rate of QRNG is continually increasing in the U.S. As a result of this, recommendations are in the process of changing. Based on previous recommendations, the focus was on areas of Asia, the Pacific, California, Hawaii, and high-risk populations of men who have sex with men (23.8%) (Van Vranken, 2007). In 2004, 6.8% of gonococcal isolates were collected by the CDC's Gonococcal Isolate Surveillance Project and resistant to ciproflaxin (Van Vranken, 2007, p. 1828). Even though gonorrhea is more common in homosexual men, the rate of quinolone-resistant *N. gonorrhoeae* continues to increase among heterosexual men at a rate of 2.9%. The prevalence of gonorrhea rose from 0.9% in 2002 to 3.8% in 2005 and in 2006, 6.7% (Van Vranken, 2007, p.1829). Because of the increases in prevalence, the CDC no longer recommends quinolones as treatment for *N. gonorrhoeae* infection.

A follow-up susceptibility survey was done again at the Cyril Zulu center in Durban in January 2005 and the study revealed that the prevalence of ciprofloxacin-resistant isolates among men with urethritis had risen to 42% (Moodley & Sturm, 2005). With a drastic increase of the prevalence of the resistance to first-line treatment of gonorrhea, a call to order has been sent out to the DoH with hopes that the DoH will

conduct nationwide surveillance, although this has yet to be done. Without this pertinent surveillance, the implications of transmission of not only *N. gonorrhoeae*, but also HIV because of its coinfection properties and thus inappropriate treatment can result in the continuance of resistant isolates of the diseases respectively. The non-responding gonococcal disease also increases the duration of mucosal inflammation, which has the ability to increase the likelihood of the transmission of HIV (Moodley & Sturm, 2005).

Psychosocial Determinants of Gonorrhea in South Africa

Women who contract gonorrhea tend to be affected by societal and psychosocial factors that include poverty, unemployment, illiteracy, lack of information and accessible health services and cultural practices (Lamprey, 2002). There have been increasing efforts to better manage bacterial STIs for which there is treatment, where in South Africa, is part of the comprehensive services offered at the public health clinics and is offered at no charge. Although there has been some success with nurse-driven preventive services offered at the antenatal and family planning clinics in South Africa, many STIs remain untreated as health seeking behaviors are influenced by recognition of symptoms, access to health services, attitudes of service providers and gender (Frohlichet al., 2007). There have also been major efforts to conduct surveillance of the prevalence of STIs, inclusive of gonorrhea as a key priority in public health because the sexual transmission of HIV occurs more readily in the presence of other STIs (Johnson & Budlender, 2002), although that has yet to be done.

The need for more research on psychosocial constructs is demonstrated by the tailored pilot study of condom use promotion among isiXhosa speaking women living

with HIV in the Western Cape Province, South Africa. The study was conducted in order to review if a health education intervention would enhance psychosocial coping skills and continuous condom use among HIV positive women that attended primary health clinics in the Western Cape. The importance of this study was that it specifically studied Black women of Xhosa decent (the demographic of the research study group of this dissertation) from large black communities of Khayelitsha and Gugulethu in Cape Town (the geographic area of the research study group of this dissertation) that have high prevalence values of HIV with 33 and 29.1%, respectively (Saleh-Onoya et al., 2009). Although it focused primarily on HIV, the WiLLOW intervention that was initiated in America among Black women living with HIV was a success in improving condom negotiation in this population, thus an adapted version was developed for use in South Africa for Xhosa women living with HIV. The WiLLOW intervention addresses psychosocial issues of social support, self-esteem, HIV and STI knowledge, and self-efficacy and skills towards correct condom use and negotiation (Saleh-Onoya et al., 2009).

More specifically, it demonstrated to be successful in reducing unprotected vaginal intercourse and incidence of *N. gonorrhea* (NG), among other STIs and also in changing psychosocial determinants of condom use (Saleh-Onoya et al., 2009). After the intervention was given to both the experimental and control groups, the prevalence of NG within the control group was 14% and the intervention group 8%. At the three-month follow-up, the incidence for NG in the control group was 29% versus the intervention group 4% (Saleh-Onoya et al., 2009).

Statistical analysis showed that there was an increase in the frequency of condom use at the three-month follow-up resulting in the decrease in NG incidence among the intervention group, but that incidence reduction could have resulted from the intervention having a positive effect on STI treatment adherence. What was also found in the study was that the psychosocial determinant self-esteem was significantly higher in the intervention condition compared with the control condition (Saleh-Onoya et al., 2009). As with the purpose of this dissertation study, this study addressed the need for other studies to identify pertinent psychosocial determinants relating to condom use behavior and the necessity of developing and testing successful intervention to increase protective behaviors among HIV positive women in South Africa (Saleh-Onoya et al., 2009).

In a study coordinated by the University of Cape Town, it was found that for HIV and syphilis, there is nationally representative data of their prevalence, but for other STIs, there are only sentinel surveillance studies, but the results are difficult to compare because of difference in the populations sampled and in the differences in diagnostic methods used (Johnson & Budlender, 2002). The studies were mainly conducted among users of public health facilities, with few studies of STI prevalence in individuals from a higher socioeconomic community. This research study focused on sentinel populations frequently studied including women attending antenatal clinics and family planning clinics, commercial sex workers, men and women in the general population, patients with STIs, patients with genital ulcer disease (GUD), and men with urethritis (Johnson & Budlender, 2002).

A total of 47 studies were included in the research after applying exclusion criteria and of these, 34 were conducted in urban areas, 11 in rural areas, 1 was conducted in both rural and urban areas, and one could not be classified. Twenty-five of those studies were conducted in KwaZulu-Natal, 14 in Gauteng, three in Western Cape (where Cape Town is located), one was conducted in all three provinces, four in other provinces in South Africa, and only two studies conducted among users of private health facilities (Johnson & Budlender, 2002).

The results of the inquiry with sentinel surveillance of gonorrhea was that this STI accounts for the majority of urethritis cases in men, and men attending STI clinics have extremely high prevalence rates and the prevalence of the disease in women attending family planning and antenatal clinics is around 5% (Johnson & Budlender, 2002). Also, the prevalence of the disease in women is significantly higher in high risk groups, i.e. sex workers and women attending STI clinics (10-31%) (Johnson & Budlender, 2002). A significant find in this review of sentinel studies is that STIs continue to be a major health burden in South Africa and the prevalence rates are high even when compared to other African countries. Because of this fact, addressing social and structural barriers that increase vulnerability to HIV, STI and TB infection and preventing new HIV, TB and STI infections are two of the key strategic objectives from the South African National AIDS Council's National Strategic Plan on HIV, STIs and TB 2012-2016 (SANAC, 2011). The high prevalence in South Africa is inferred to be because of the high levels of migration into this country from other African nations, the legacy of the migrant labor system during the apartheid era, and maybe because the HIV/AIDS epidemic in South

Africa is less mature than the epidemic in other African countries (Johnson & Budlender, 2002). Other findings from this study are that the prevalence of STIs in South Africa is high, although STI prevalence varies substantially between sentinel populations and that there is a need for more nationally representative STI prevalence studies in South Africa and more periodic cross sectional studies that can be used to monitor prevalence trends and the success of STI treatment initiatives (Johnson & Budlender, 2002).

Specifically, delineation of the specific factors on an individual level, partner relationships, and society that contribute to an increase of risk of infection will be addressed.

Individual Factors

Information (Knowledge of Risk)

To change the behavior of those at most risk of infection of gonorrhea, people need to have some basic knowledge of HIV/STIs and be aware of their risk of infection. They must be taught "a set of protective skills and offered access to appropriate services and products, such as condoms" (Lamptey, 2002, p. 208). Knowledge and belief about HIV/STIs among South Africans is a major risk factor to burden of disease. Many South Africans know about HIV/STIs and know that it is spread sexually, but there are many misconceptions about other forms of transmissions and cure(s) for the disease (Johnson & Budlender, 2002). The misconceptions are mainly found among women in rural areas and among the unemployed population (Johnson & Budlender, 2002).

A national survey of teenagers found that 7% of teenagers believed that a person could be cured of HIV/AIDS by having sex with a virgin, 13% believed that traditional

African medicine had a cure for HIV/AIDS, and 15% believed that Western medicine had a cure (Johnson & Budlender, 2002). They also believed that HIV positive people could be identified by their symptoms. With the false sense of knowledge of HIV/STIs can also give a false sense of risk of infection that could lead to risk-taking behavior (Johnson & Budlender, 2002).

A study was done among university students at two tertiary institutions to determine their beliefs, behaviors, and sources of HIV and AIDs information. The study was based on conflicting literature regarding whether non-governmental organizations in South Africa used appropriate communication messages to educate the public on HIV and AIDs. The programs that relayed the messages evaluated fell into the categories of information, education and communication, behavioral risk reduction and peer education (Reday & Frantz, 2011). Higher Education AIDS and HIV program (HEAIDS) was developed as a result of the concern of the epidemic infection rate of HIV/STIs among undergraduates estimated at 22% TO 33% in 2005 (Reday & Frantz, 2011). HEAIDS coordinated the effort of the study to include structures to respond to the epidemic through the core functions of learning, research management and community involvement. One institution was found in Western Cape and the other institution KZN with 387 and 385 study participants, respectively. Students were given anonymous self-administered questionnaires; one was the HIV-Knowledge questionnaire, the National College Students Health Risk Behavior Survey (from the Center of Disease Control and Prevention), and the Assessing AIDS-related Beliefs questionnaire.

The results of the study suggested that the majority of participants scored highly on HIV knowledge with a median knowledge of 34.98 out of 45 or (77.7%) and participants scored lowest on the transmission modes of HIV/AIDs. The source of HIV/AIDS information among university students was primarily through television and billboards and was frequently mentioned with (79.9%), then public service announcements on the radio (79%) and information from university health promotion programs (71.9%) (Reday & Frantz, 2011). Students in the Western Cape felt less of a risk of infection although analysis showed that students were engaging in more 'high-risk' behavior with earlier sexual encounters, and more sexual partners (Reday & Frantz, 2011). The findings of this study suggest that "adequate knowledge of HIV/AIDS is not sufficient enough to promote behavior change among South African students" (Reday & Franz, 2011, p.169). The lack of constant exposure to information concerning HIV/STIs makes more people susceptible to the virus which is of concern regarding the results from the study and that formal education even at the tertiary level is important to eliminate the epidemic of disease.

Vulnerability

Vulnerability refers to the individual factors that increase risk of HIV/STI infection (Lamptey, 2002). UNAIDS considers that vulnerability includes factors outside the control of the individual, which reduces the ability of individuals and communities to avoid the risk of HIV/STIs (Nzewi, 2009). Some of the individual factors include unemployment, illiteracy, and gender inequality. These factors can also be characterized as social, but in the context of this psychosocial study determinant factor, they will be

classified as individual susceptibilities. Vulnerable persons in many countries can include adolescent girls and women. If any of those factors come into play, such as illiterate women with limited skills, few job opportunities, and limited access to health information and services, are more likely than other women to engage in unprotected sex for money increasing their vulnerability and risk of infection (Lamptey, 2002). Women are also considered vulnerable to rape and violence in their relationships and tend to have limited control over their sexual relationships (Johnson & Budlender, 2002). Promiscuity is also a risk factor found in literature and women are put at risk because of whom they have sex with rather than how many people they have sex with (Johnson & Budlender, 2002). Interventions that address vulnerability to create economic opportunities for those at most risk, can decrease vulnerability and risk of infection among the most affected groups.

Substance Abuse

Substance abuse, mainly alcohol consumption and other drug use (AOD) increases vulnerability to HIV/STIs, because it encourages sexual risk taking, and weaken the immune system. Women are especially vulnerable when they trade sex for AODs or use AODs to cope with sex trading (Myers et al., 2013). HIV/STI prevalence in the Cape Town area of Western Cape is highest in predominately Black African townships of Khayelitsha and Gugulethu, and second highest in the predominately Colored area of Mitchell's Plain ('colored' refers to people of European, African, and mixed ancestry), where AOD use is disproportionately high.

A study was conducted to address the differences in AOD use and AOD-related risks for HIV among vulnerable Black African and Colored women in Cape Town, South

Africa. The study design used a community-based randomized controlled trial to test an HIV/STI risk-reduction intervention for AOD-using women in Western Cape from 2008-2011 (Myers et al., 2013). Women that were recruited had to have used at least two drugs (one inclusive of alcohol) at least once a week for the past 3 months, been sexually active with a man in the past month, and had not participated in any related studies. The socio-demographic variables were ethnicity (Black African or Colored), age, education, unemployment status, and average monthly income and the outcome variables were self-reported heavy drinking, and recent cannabis and methamphetamine use (Myers et al., 2013). The outcome variables of interest were whether the participants' last sex act was AOD-impaired and unprotected as well as whether their partner was AOD-impaired during their last sex act (Myers et al., 2013).

The findings of the study were that Black African women had significantly lower incomes than Colored women and were significantly younger. Both populations were mostly unemployed and had not completed high school. Colored women were more likely to report heavy drinking than Black women, although more Black women tested positive for cannabis use compared to Colored women. Over a third of the participants reported being AOD impaired and having unprotected sex during their last sexual encounter and almost half of the sample reported that their sex partner had used AODs before or during the last sexual encounter (Myers et al., 2013, p. 178).

A 1998 national household survey conducted of about 13,000 individuals in South Africa found that one-third of female respondents reported risky drinking on most weekends with 5 or more drinks per day (Wechsberg et al., 2008). In addition to this

research, it was found that with the extensive alcohol consumption, there is also an increasing demand for drugs (i.e. methamphetamine, cannabis, and cocaine). Substance use especially in high risk populations in Western Cape, South Africa inclusive of Black townships, may lead to an impairment of judgment and decision making thus leading to risky sexual behavior and increase in risk of HIV/STIs (Wechsberg et al., 2008).

Another study was conducted in Western Cape for Black African and Colored South African women to examine differences between the two populations of women across pre- and post-intervention measures of alcohol and illicit drug use and sex risk behaviors as adapted from the Women's Co-Op, an intervention developed for substance-abusing African-American women in the United States. Recruitment of study participants involved street outreach in Black townships and Colored communities, respectively. Women were eligible if they reported alcohol or illicit drug use on at least 13 of the past 90 days and an income of less that R2000/month. The pilot study used a gender-based prevention intervention in both individual and group formats to evaluate if in this format, there would be a reduced risk of disease among the two target populations. The results showed that, regardless of the intervention format, women did have a change in risky behavior in regards to substance use over a short follow-up period and responded well to intervention follow-up (Wechsberg et al., 2008). There were differences in the patterns of methamphetamine use between the women, with more colored women use of this drug, whereas there were higher rates of alcohol and cannabis use among Black women (Wechsberg et al., 2008). Both Black and Colored women indicated that alcohol and other drugs are ways to cope with interpersonal conflicts and physical, sexual, and

emotional abuse and are more likely to have unprotected sex when under the influence, thus fueling the trend in HIV/STI infections among these groups of women in South Africa (Wechsberg et al., 2008).

Mental Health

The mental health status of South Africa women is an often neglected topic according to literature. According to Moultrie & Kleintjes (2006), women are significantly more likely than men to suffer from depressive disorders and most anxiety disorders and psychological distress and local research in South Africa has begun to review social correlates of depression and anxiety in women and correlations (if any) to poverty, gender violence, and HIV/STIs. A consensus estimate of the prevalence rates of selected mental disorders in Western Cape, found prevalence of 25% for adults, 17% for children and adolescents and among adults, 15% for major depressive disorder, 6% for generalized anxiety disorder, 6% for post-traumatic stress disorder, and 5% for simple phobia (Moultrie & Kleintjes, 2006).

From a meta-analysis review of literature concerning the mental health of women and HIV/STIs in South Africa, there are significant correlations between HIV positive status and mental health disorders, namely delirium, dementia, personality disorders, mood disorders, post-traumatic stress disorder (PTSD), and suicide (Moultrie & Kleintjes, 2006) than with HIV negative women. Clinical studies found higher rates of depression and PTSD in HIV positive women than in HIV positive men and that there may be a presence of comorbidity of HIV/STIs and mental health (Olley et al., 2005).

Partnership Factors

Sexual Inequalities

Gender-based sexual power inequality among men and women is a well-established variable that affects sexual risk-taking in relationships. This phenomenon has been researched in South Africa, where multiple sexual partners are said to be condoned among men, whereas women are expected to be in monogamous relationships and unquestioning of their partner's behavior (Pettifor et al., 2004). If women refuse sex, or negotiate not to have sex with their partner could result in suspicions of infidelity. Studies in South Africa have found that women's status or power in the household have effects on contraceptive use. For example, Pettifor et al. (2004) conducted a study of sexual power data and HIV/STI risk behaviors among women aged 15-24 in South Africa. Sexual power was measured through two factors: relationship control and recent experiences of forced sex. Other participant characteristics and sexual practices theorized to affect condom use consistency were also reviewed. The relationship between sexual power and condom use consistency, and between sexual power and HIV status, was reviewed. The results were that most women reported inconsistent condom use, and there was no significant association between low relationship control and HIV infection (Pettifor et al., 2004). Women that were HIV positive were likely to have had more than one lifetime sexual partner, to be 20-24 years of age, not completed high school, to be Black African, and single. They were also significantly more likely to be inconsistent condom users and have low relationship control. Women who reported low condom use self-efficacy were also at increased risk of inconsistent condom use with the strongest

predictor of inconsistent condom use was not having talked to the most recent partner about condoms (Pettifor et al., 2004). According to this study, sexual power is associated with inconsistent condom use, which was significantly associated with HIV infection.

Gender Based Violence

According to the WHO, gender based violence (GBV) is often ignored and has significant implications for health (WHO, 2013). It is considered one of the most common forms of violence against women and is often done by a husband or male partner. It is an "invisible" practice because it normally happens behind closed doors and some legal systems and cultural norms do not perceive it as a crime and that is a "normal" part of life (WHO, 2013). In the context of GBV and STIs, in particular gonorrhea among South African women, the literature is not vast because the links between gender roles, GBV, and HIV/STI risk among these women is culturally specific and undocumented. South Africa, especially the Western Cape is home to 12 official languages and many different cultures, making conclusions to how sexual risk and GBV is an inter-related complex. One study however, did investigate "how women and men in two black communities in the Western Cape, South Africa, constructed their gender identities and roles, how they understood gender-based violence, and what they believed about the links between gender relations and HIV/STI risk," (Strebel et al., p.518, 2006).

South Africa is home to only 10% of the world's population but to more than 60% of all people living with HIV (UNAIDS/WHO, 2005) and there are more people living with HIV in South Africa than anywhere else in the world. It also has one of the highest rates of violence against women globally, with over 53,008 cases of rape reported to

police in 2000 and 123 women reporting rape or attempted rape per 100,000 and the Western Cape Province being among the highest in South Africa (Strebel et al., 2006). Because of this alarming statistic, women in South Africa, and in particular the Western Cape province are at a higher risk of HIV/STIs and was evidence in a study by Dunkle et al., (2004) based in antenatal clinics in South Africa, where the findings were that women with violent or male partners that were controlling were at an increased risk of STI/HIV and was the "product of partner characteristics and male dominated relationships (Kalichman et al., 2005 by Strebel et al., 2006).

Gender-based violence (GBV) was found to be a major problem in the communities, with men being seen as the initiators of the violence and the women, families, and children being seen as the victims. There are a variety of factors leading to GBV, including women's empowerment and overturning of traditional gender roles, high rates of unemployment among men resulting in his loss of self-esteem and subsequent male violence toward those closest to him—women and children (Strebel et al., 2006). Also, participants felt that male domination was due to men feeling that they were entitled to beat their women and tolerated by the African culture and seen mostly among working class men with less education where violence is predominately found. Abuse of alcohol was also strongly linked to domestic violence combined with poverty in the communities.

HIV/AIDs are considered a significant problem in the communities. The perception is that the epidemic is mostly found in the African communities and not so much in the 'coloured' communities (Strebel et al., 2006). The risk factors for HIV/AIDs

and STIs were: having sex with multiple partners, truck drivers and prostitutes, alcohol use leading to the less likely use of condoms and are more likely to engage in other forms of risky sexual behavior and even more so if they test positively for the virus. Use of condoms remained problematic and were not seen as being used consistently where women have a difficult time negotiating use, myths about condoms not being safe, and cultural beliefs about 'real men' not needing condoms and also women did not insist on their partners using condoms. The links between GBV and HIV/AIDs were that men might beat their partners if they refused sex, the use of alcohol could lead to sexual violence, increasing the risk of HIV infection and disclosure by a woman of HIV-positive status could lead to physical assault by a male partner.

The main conclusions drawn from this study were that traditionally, men still dominate in the communities studied, but that these traditional gender roles were being challenged by women that had begun to start working and gaining independence. The implication that men were losing their power in their families and communities was found to be a foundation to the predisposition to GBV. The shifts in power however, are not visibly seen in regards to the level of sexual negotiation with safer sex practices. GBV among all studied groups and in both communities is regarded as a major problem with underlying issues with poverty, unemployment, and changes in gender roles that are fostering unsafe sexual practices increasing risk of HIV/AIDs and other STIs inclusive of gonorrhea.

Social Factors

SES/Poverty

In order to slow infections of HIV/STIs, interventions that focus on reducing risky behaviors must be targeted at the general population or at high risk groups. High risk women must perceive their environment as supportive of changing or maintaining safe behaviors (Lamptey, 2002). Behavior change interventions that address what places people and communities at risk and why they are at risk can have an impact on risk of infection. Another key factor of reducing risk of transmission is the economic and political stability of the community. An individual's risk of HIV/STI infection is determined by her socio-economic status, the socio-economic profile of the community that she is living in, her ability to attract sexual partners, and access to STI treatment and ability to protect themselves from infection (Johnson & Budlender, 2002).

Epidemiological texts define poverty as having several dimensions: socio-economic status, unemployment and level of education (Patel & Kleinmond, 2003). In South Africa, women make up the majority of the unemployed with a rate among African females at 37%, which is 10 times higher than that of White males and about one time higher than that of African males (Moultrie & Kleintjes, 2006). Low socio-economic status (SES) that is found among African women can place severe constraints on personal choice and can heighten the impact of other stressors like decision making and can be accompanied by chronic feelings of social adversity and severe life events like burden of disease (Moultrie & Kleintjes, 2006). Other factors linked to low SES and poverty

include poor nutrition, lack of access to health care, poor sanitation, limited resources to basic needs, heightened conflict and infectious diseases (Kalichman et al., 2005).

A study was conducted in Western Cape to look at community stressors as it pertained to transmission of AIDs in South Africa. The research took place in a Black African township and in a Colored community on the outskirts of Cape Town. Demographic characteristics were collected including age, race, years of formal education, employment, and marital status (Kalichman et al., 2005). Perceptions of community stressors were evaluated: housing, transportation, insufficient food, HIV/AIDs, unemployment, discrimination, poor education, violence and crime (Kalichman et al., 2005). HIV risk history was recorded and asked participants the number of male and female sex partners over the previous 3 months, whether they had vaginal or anal sex with or without condoms. The lifetime history of STI diagnosis and symptoms were assessed with participants reporting if they had ever had a diagnosis of an STI and if there had ever had an open sore on their genitals. Once there was a positive diagnosis for STI, if there was a follow-up HIV test. Forty-eight percent of participants were Black, 45% were Colored, and the remaining 7% White or Indian. AIDs considered as serious as unemployment, violence, and crime and Africans rated poverty-related stressors as a serious problem in their community. The study found that poverty-related stressors were associated with HIV/STI risk in the African Black community and the more that basic resources were lacking to meet basic needs, as well as frequency of alcohol and drug-use, the higher the risk for HIV transmission. In the Colored

community, there were no found associations between perceptions of community stressors and HIV transmission risks, but that drug-use history was related to HIV risks.

Cultural Limitations

Current day South Africa still maintains a predominately male-dominated society in most cultural environments. Cultural beliefs in South Africa tend to believe that women that are considered 'good' are considered less informed about sex and not as knowledgeable as men in sexual behavior and experience (Nzewi, 2009, p. 6). They are not considered to understand risk reduction behavior and young women that are virgins are assumed to be less sexually active and are pursued by men that have the belief that being sexually intimate with them will cleanse HIV (Nzewi, 2009, p. 7). Males are the main source of income for the family and in most relationships. Although women are slowly beginning to find independence through education and seeking professional careers, the power struggle continues and in most social circles, power and status are mostly given to males. Because of this perceived power imbalance, women's risk of both sexual assault and STIs are increased (Stebel et al., 2006).

The study conducted by Strebel et al. (2006), had the primary aim of gaining knowledge about the socio-cultural, interpersonal and individual factors that motivate gender-based sexual risk behavior and gender-linked violence in Cape Town, South Africa. The purpose of the study was to find ways to develop sexual behavior interventions that were sensitive to an understanding of the gender system from both men and women perspectives in order to be successful at changing the knowledge, attitudes, motivation, and behavior of those at highest risk.

The study was conducted in two target communities in Cape Town, where one community was in a mostly African township and the other in a recently developed residential area with a mixed population of African and ‘coloured’ population. After interviews and eight focus groups were conducted with male and female general members of the community by trained field workers in the respected languages, several themes and findings were found among the groups. From the interviews, there was recognition in the traditional gender role of women staying at home to raise the family and men going out to work to provide for the family and that women were expected to be submissive to their husbands, who were expected to be the decision-makers. They also found that there was a shift beginning in this where women were now going to work and becoming heads of the household and also breadwinners giving women more power albeit it slowly.

Mental Health and Violence against Women in the United States

Individuals with histories of trauma are also more likely to report increased rates of sexual and other sexual behavior. Intimate partner characteristics seen in women in urban communities and in ethnic minority women were found to be at an increased risk of contracting HIV/STIs because of the association with gender and power in relationships, a lack of ethnic mixing for sexual partner choice, concurrent relationships (Sharp et al., 2010). Low relationship power among women due to gender inequalities at the individual level can be associated with physical violence, forced sex and inconsistent condom use and on the societal level labor and economic imbalances resulting in women living in poverty that can all contribute to increased risk of disease. Sexual behavior

through networks found among African Americans where they tend to choose partners from their own ethnic group at higher rates compared to other racial and ethnic groups provide a high opportunity for the spread of STIs and HIV (Sharp et al., 2010). Concurrent relationships are sexual relationships that overlap in time and can cause an increase in the spread of STIs and HIV because of high numbers of individuals being infected simultaneously compared to infections spread through new, sequential sexual partners (Sharp et al., 2010).

Poverty in Canada

In Canada, aboriginal women are more likely to live in poverty compared with non-aboriginal women and structural and system discrimination facilitate poverty through geographic segregation among these women (Sharp et al., 2010). In geographic areas that have high HIV/STI prevalence, sexual networks and residential segregation are ways that facilitate increased transmission by restricting the number of non-infected partners available in a geographic area. Poverty restricts one's ability to travel outside of densely infected regions for sexual partners due to travel expenses and lack of transportation and reduces the ability to leave a high-risk relationship especially when it provides financial support (Sharp et al., 2010, p. 69). Although in Canada health care is universal, HIV/STIs services are less susceptible in Black Canadian neighborhoods and in low socioeconomic neighborhoods and the difference in those seeking HIV/STI preventive care or even determinant tests is due to "greater social stigma, fewer HIV services, or difficulty accessing care because of lack of a regular medical provider in poorer neighborhoods (Sharp et al., 2010, p. 69).

Summary

Gonorrhea is the most common bacterial STI in the world. It affects women at an alarming rate compared to men and is mostly contracted through heterosexual sex. The clinical aspects of gonorrhea are complex due to its pathogenesis not fully being known. The reason for the review of the gonococcus *N. gonorrheae* in this particular study is because Black women are disproportionately affected by the STI and although the microbial resistance is not yet common in this population. Specifically, the purpose of this research was to detemine the psychosocial factors and intrapersonal aspects among women from Cape Town, South Africa regarding the incidence of gonorrhea. The psychosocial determinants found in literature that have an effect on incidence of gonorrhea in South Africa are identified as per the IMB conceptual framework is found on the individual level, in partner relationships, and in society. Individual factors include information (knowledge of risk), vulnerability, substance abuse, and mental health. Partner relationship dynamics include sexual power and gender based violence. Society is inclusive of SES and cultural limitations. The IMB skills theory was used in this research as the framework to help construct the interview questions and frame the results. South Africa, the geographic target of this study is a sentinel area for study because even now there is no national surveillance being done in regards to gonorrhea rates to coincide with HIV and syphilis epidemiological rates, although it is drastically necessary because of the impending pandemic crisis of QRNG currently being seen in the United States and other countries abroad. A method to prevention that can be done to assist in deterring QRNG from affecting Black women in high risk environments and populations specifically in the

Western Cape of South Africa (Cape Town area) is to focus on psychosocial aspects that can have an impact on burden of disease, whether they are on an individual, relational, or social level. Psychosocial conditions began as a result of the need for epidemiologist to understand how disease and social experiences affect health outcomes. These factors are found around the world as affects to STIs and in particular, gonorrhea. This study addressed the factors sentinel to risk of gonorrhea among Black women in Cape Town, South Africa and will contribute to literature concerning tailoring interventions among populations at high risk of gonorrhea.

Chapter 3: Research Method

Introduction

This study addressed the perceptions of Black women in South Africa and the psychosocial determinants of gonorrhea. The demographics and psychosocial factors of this particular test group associated with a higher susceptibility to STIs have been described in literature. This study is a qualitative study, to allow for study participants to speak freely and without restrictions concerning the experiences and motivations that may have led to their increased risk of STIs, in particular gonorrhea.

Research Design and Rationale

The research question is as follows: What is the experience of South African women regarding the psychosocial determinants of gonorrhea?

The use of qualitative methods for this study was chosen after reviewing the literature with an emphasis on Black women regardless of geographic location because it allowed the participant to feel more at ease with the process of the research being in their home area. Particularly in South Africa, many research studies are ongoing that are mainly focused on maternal and child health and vaccine research. In particular, HIV studies are quantitative in nature, so this study design may be a refreshing change to allow for the participants to have a voice.

The key concept being studied is the IMB theory that is used to define the constructs affecting risk-reduction behavior among Black women. The hypothesis is that if psychosocial determinants are considered among Black women from Cape Town, then the risk of gonorrhea will decrease. Using the qualitative design methodology, the data

collection methods used individual interviews to allow the women study participants to share their ideas on the psychosocial and behavioral manifestations that affect their sexual habits. Qualitative analysis goes beyond counting words or extracting content from texts to examine meanings, themes, and patterns to allow the researcher to understand social reality in a subjective but scientific manner (Zhang & Wildemuth, 2009). With an understanding of social determinants of health among this population, study participants have to have a feeling of trust and security in order to open up about personal occurrences in their life. Qualitative research is mainly inductive and draws inferences from topics and themes and attempts to generate theory (Zhang & Wildemuth, 2009).

The IMB skills theory (Rudestam & Newton, 2007) used in this research was the framework to help construct the interview questions and frame the results. The theory defines the constructs in which women can share their ideas on the psychosocial and behavioral manifestations that affect their sexual habits to examine similarities with Black women. In order to do this, themes from open-ended questionnaires and focus groups that are characteristic of qualitative methodology would be the theoretically ideal structure for this study. Looking at specific elements in the research to either support or reject tested hypotheses or address the same from previous empirical research, quantitative would be better suited for this research. From the literature search, there have been no other studies conducted from an epidemiological standpoint to find out if psychosocial and behavioral factors contribute to risk of gonorrhea, so quantitative reasoning would not apply here. Moreover, quantitative content analysis requires that the

data selected use random sampling to ensure the validity of statistical inference (Zhang & Wildemuth, 2009), where in qualitative analysis and as well in this study, the texts are purposively selected in order to inform the research questions. Lastly, in quantitative research, numbers are manipulated using statistical methodology, whereas in contrast, the qualitative approach uses expressions from subjects reflecting how they view the social world to be understood by the investigator and readers of the study results (Zhang & Wildemuth, 2009). Because qualitative analysis tends to look at the meaning of phenomenon rather than the statistical significance of occurrences, once again, it will be the best way of data collection for this research.

Role of Researcher

The role of the researcher was as the interviewer for personal one-on-one interviews of the 12 study participants. The logic for the completion of the open-ended interview independently is to rule out the risk of response bias from the participants of answering with socially responsible replies that may not be reflective of the true nature of their sexual behaviors. I conducted the one-on-one interviews in order to capture any deficiencies or incomplete sentences and to go deeper with the participants to discover the specific factors that led to the illness, how the illness might have been prevented, or how it can be prevented in the future. To establish trust and for the participants to get a feeling that I had their best interest at heart and was not part of another study that will not include them when the results are finalized, I volunteered at the Langa LoveLife clinic before and after the data collection process. I also gave all participants my contact details if they had any questions or concerns prior and after the analysis.

Methodology

Townships in South Africa are historically predominately Black African with a majority Xhosa in traditional ethnicity and language. In Langa, one of the townships that was studied , Black Africans make up 99.5% of the population, the highest percentage of the population is the age group 18 to 34 with 37.3%; unemployment is 56%, and females make up 52% of the population according to the 2001 Cape Town Census. Out of the female population, 8% have no schooling, 7% have a Grade 1 to 6 education, 4% have a Grade 7 education, 22% have a Grade 8 to 11 education, and 10% have a Grade 12 education. With females as the predominate gender in Cape Town, the probability of reaching study participants was greater, thus the choice to use as a comparison in this particular study. Strictly speaking, one of the main reasons for the choice to study in this particular area was because these populations have high incidences of HIV and STI among Black females.

To be eligible for the study, participants had to be a Black female, aged 18 to 35 years old, read and speak at least intermediate English (although all literature was translated in Xhosa for research in South Africa in order to increase the chances of greater participation), and have had at least one sexual experience and at least one positive test for gonorrhea in the past 2 years. The goal was to recruit as many participants who had received a positive test for gonorrhea within the past 2 years with a goal of no less than 10 participants. Ten was the minimum target because in a review of prevalence studies within this geographic area and population, it was not difficult to recruit participants. Because of the number of studies that have been done in the clinics

with HIV, the women are aware of how studies are conducted. Compensation was given to participants for volunteering their time to participating in the study.

This research was undertaken in a government-funded clinic in the Langa township. Many of the local residents use these facilities due to the accessibility and the free services and the fact that most residents do not have national health insurance. The clinic has trauma services, mental health services, a pharmacy, obstetrics, a HIV/AIDS and STI unit, and psychiatric services, among others, making them full-service health facilities. The LoveLife organization is a nonprofit group that caters to young adults and comprehensive sexual preventive services. LoveLife is very visible in the local area and works with the local schools to deliver education about how to practice safe sex and other sexual preventive methods to curb the high rate of HIV/STIs in the area.

Although this study had a small sample, this is normal in qualitative studies to allow the time for the researcher to establish trust with each participant and dig deeply into their thought processes and feelings. In order to recruit as many participants as possible to give a detailed understanding of the psychosocial effects of the women affected by gonorrhea, I asked LoveLife to assist in passing out flyers for participant recruitment. Walden's IRB board recommended this way of recruitment as opposed to clinic nurses and doctors asking participants directly to avoid participants being coerced into being in the study.

Instrumentation

The data collection instrument used in this research contained questions on individual susceptibility, partner relationships, and society. All focus groups and

interviews were audiotaped using a voice recorder and a voice recorder app on an IPad as a secondary source of backup in case of any technical complications. The qualitative interview guiding questions were derived from DiClemente et al. (2008) and are attached (Appendix A). The study by DiClemente (2008) focused on psychosocial predictors of HIV-associated sexual behaviors of at-risk adolescents in the United States. From DiClemente's study, variables were identified that parallel the identifying themes from the guiding questions in the present study that would establish sufficiency and appropriateness of the data collection instrument to answer the research questions. With the research question aimed to identify psychosocial factors that affect risk of gonorrhea among black South African women and by using DiClemente's research that focused on a similar demographic and an at-risk group in regards to psychosocial factors and disease, content validity could be established.

Data Collection

Data collection was conducted through scheduled individual interviews. I set up the schedule when the study participant called with interest to be part of the study. The interviews were conducted in the local community LoveLife facility in order to alleviate issues with transport once the eligible women were identified. Prior to the interview, demographic data were collected through a demographic survey of closed-ended questions about marital status, education level, employment status, and income. The interviews were audio-taped to make sure that the entire conversation was recorded for later transcription.

Data Analysis

Data were analyzed after data collection and a transcription of the personal one-on-one interviews. Coding for interviews was placed in various categories determined throughout the data collection process with the focus of determining what (if any) psychosocial variables affect risk of gonorrhea among Black women. Data for a qualitative study may comprise written texts like documents or field notes and/or audible and visual data that can be a recording of interviews, focus groups, or consultations (Bailey, 2008). Recordings are then transcribed into written form to be studied in detail and linked with analytic notes and/or coded; studies can give the impression that transcribing is a straightforward task, but in many cases, this is not so (Bailey, 2008). This is because original data from transcripts have to consider verbal and nonverbal interactions to shape communicative meaning and to capture how things are said because words can be shaped by the way in which something was said in addition to what was said (Bailey, 2008, p. 128).

There are many ways to analyze data, but in this research, the transcripts were analyzed thematically, meaning that the coding contained the content of the "topics" of talk (Bailey, 2008, p. 128). Thematic synthesis has three stages: the coding of text line by line, the development of descriptive themes, and the generation of analytical themes, and it is through research considered as a tried and tested method that preserves an explicit and transparent link between conclusion and the text of primary studies (Thomas & Harden, 2008). Hand-coding was used to generate, organize, and classify codes, which was important because it allowed the performance of data manipulation procedures such

as creation and insertion of codes, indexing, and selective retrieval of text (Ulin et al., 2005, p. 151) from participant interview responses that were recorded, transcribed, and coded for themes. Demographic data about marital status, education level, employment status, and income were also analyzed.

Trustworthiness

Internal validity in this research refers to how well the experiment is done and whether or not there is one explanation over another in regards to psychosocial factors and gonorrhea. One strategy to establish credibility and dependability used in this research is methodological triangulation. This type of triangulation involves using more than one method to gather research data, and in this study, questionnaires were given to the participants and then one-on-one interviews to account for any changes that occurred in the setting of the research. Another strategy to establish validity was member checking that occurred during the interview where I summarized the information given to determine accuracy. This was used to help improve the accuracy and credibility of the study as a form of quality control of what was recorded during the interviews (Harper & Cole, 2012). It also served to decrease the incidence of incorrect or misinterpretation of data to provide findings that are "authentic and original" (Harper & Cole, 2012, p. 511). External validity was established by thick description involving writing out detailed descriptions of the participants and the setting of the study.

Ethical Considerations

After receiving acceptance to conduct the study from the Institutional Review Board of Walden University, the participants were recruited from the Langa clinic

through distribution of study flyers. During the entire process, participants were reassured that their identity would be held confidential and were thoroughly informed of the risks and benefits of their participation. There were no risks to the participants of this study. There were no ethical concerns related to the recruitment materials as the participants were recruited with assistance in flyer distribution by the trusted members of the respective clinic.

As mentioned, all data were taken and held confidentially, and I transcribed and kept audio-tapes that only I have access to. Data are stored on my laptop and are saved on a hard drive to eliminate the potential loss of data. Data will not be destroyed for 5 years. Dissemination of data will come in the form of data analysis in the final draft of the dissertation. There are no conflicts of interest as the study was done outside of my work environment and participants were of no relation to me and do not cause any selection bias or other form of bias associated with recruitment.

Summary

The experience of South African women regarding the psychosocial determinants of gonorrhea among Black women in Cape Town, South Africa was the focus of this study. Qualitative methodology was the study design for this research in order for participants to be able to be open with their responses to give the research rich data to draw conclusions from. The IMB theory framework allowed for conceptual understanding of the individual motivation and behavior of the target population in regard to the risk of disease and how to best prevent future occurrences of the same. I facilitated the one-on-one interviews, which took place in a major black township in the Cape Town

area of Langa, where there are high incidences of HIV/STIs. Eligibility for the study was that the participant must be black African, aged 18 to 35, read and speak at least intermediate English, have had at least one sexual experience, and have had at least one positive test for gonorrhea in the past 2 years. The data collection instrument was open-ended questions in the form of individual interviews that were audio-taped. Data were analyzed through transcription and coding to find themes to draw conclusions about the research. Internal and external validity was established through various forms in order to account for credibility and transferability of the research to other parties and/or future research. Ethical considerations were maintained throughout the entire study and IRB approval as part of the research protocol. The IRB approval number was 09-05-14-0132506**.** The participants' identity and research responses are being kept confidential, and risks and benefits were expressed to each participant prior to participation in the research.

Chapter 4: Results

Introduction

The purpose of this study was to explore the perceptions and behaviors of women in a a predominately African Black township located outside of Cape Town, South Africa regarding the psychosocial and intrapersonal risk factors for gonorrhea. The psychosocial factors were delinated into Individual factors, Partnership factors, and Social factors. Within these components, various more specific questions were asked to get a better understanding within the IMB conceptual context. The primary research question was the following: "What is the experience of South African women regarding the psychosocial determinants of gonorrhea?" In this chapter, I will look at the research setting, demographics of the participants, data collection and analysis procedures, evidence of trustworthiness, and results of the study.

Setting and Demographics

The data collection of the study was based in Langa, which is a suburb township in Cape Town that is well known for its history during the Apartheid. Langa means "sun" and is one of the oldest townships in Cape Town. After a meeting with the Regional Manager of LoveLife to request that LoveLife be the community partner of the researcher, Langa was recommended to be the host of the research because of the lack of supervision opportunities and interview facility at the other locations in Nyanga and Khayelitsha townships. According to the 2011 Census Suburb Langa, the population in Langa is 52,401, the number of households 17,400, and the average household size 3.01 (City of Cape Town, 2013). This population is predominately Black African at 99%, 40%

of those aged 20 years and older have completed Grade 12 or higher, 60% of the labor force (aged 15-64) is employed, 72% of households have a monthly income of R3,200 or less, and 58% of households live in formal dwellings (City of Cape Town, 2013). The demographic profile of Langa is that the area is 50.1% female and 49% male (Black African). The majority of the population is aged 25 to 64 years old at 51%, with the next percentage of 20.7% 15 to 24 years of age (City of Cape Town, 2013).

In regards to the research participants (Table 1), 92% of the women were unemployed, 58% were high school graduates (25% had less than a grade 12 education, and 17% were university students). All of the participants considered themselves single, but 67% were in a relationship, and 33% were single, not in a relationship. The average age of the study participants was 21.7 years old. I used LoveLife, a nonprofit organization as the community partner, which has a facility in Langa that was the site of the participant interviews and where participant flyers were housed and distributed for recruitment. There were no personal or organizational conditions that influenced participants or their experience at the time of the study that would influence interpretation of the study results.

Table 1

Demographic Data From Study Participants

Measure	Total sample (N = 12)
Sociodemographic variables	
Age (years, average)	21.7
Unemployed (Yes)	92%
High school education completed	75%
Single (Not in a current relationship)	33%

Data Collection

After flyer distribution at the LoveLife facility in Langa was coordinated with the Regional Manager and LoveLife volunteers (that included the clinic housed in LoveLife), possible participants were asked to call if interested in being part of the study. When the potential participants called about being part of the study, I asked if they had tested positive for gonorrhea in the past 2 years. They were also asked their age, for eligibility, as well as fluency in English and if there was a need for a translator in the interview. If the women met the requirements, they were given a date and time for the interview at LoveLife, and for those who did not meet all of the requirements, they were not given a date and time but were thanked for the interest and time for inquiring about the research.

The Walden University Institutional Board (IRB) during the application process felt that the focus groups initially proposed would not be conducive to participants sharing sensitive and confidential information, so the accepted IRB application called for only one-on-one interviews. The IRB also asked that consideration for possible

translations be a part of the data collection in the case that a person who wanted to be a part of the study but could not speak English fluently or was not confident in the language could not be excluded due to a language barrier, which was satisfied through LoveLife that had translators available for my use. The IRB felt that the research should not personally use workers in the clinic to help with recruitment, as it could cause selection and participant bias in the validity of the research, so only flyers could be distributed in the facility and the interested parties that tested positive for gonorrhea could call me to schedule a time and date to participate in the research of their own volition.

A total of 12 participants were included in the study (out of 20 incoming calls requesting more information about the study) for a one-on-one interview that was audio taped by two sources—a digital voice recorder and a voice recorder application on an IPad just in case there were any technological glitches in the process of recording the interviews. The proposal had requested a minimum of 10 interviews, so this number satisfied above the minimum amount. A conference boardroom was used at the Langa LoveLife facility for all of the interviews, and each participant was asked if a translator was needed before beginning the interview process. There were approximately four participants who asked for a translator to be part of the interview. Before the interview began, I went over the Informed Consent form and received consent from each participant.

The demographic survey that was given to the participants to complete asked for the highest level of education achieved, employment status, marital status, and age.

Interviews were held on several Fridays during the month of October 2014 (October 10th, 24th, and 31st) for approximately 3-4 hours, depending on the time and length of the interviews (varied according to question responses). Participants were given a grocery store voucher valued at R50 (USD $5) for their time. There were no unusual circumstances encountered in the data collection.

Data Analysis

The interviews were transcribed and hand-coded on a line by line basis (Thomas & Harden, 2008). From this process, descriptive themes were then deciphered from the variables outlined with the psychosocial variables previously discussed. There was no need to use a qualitative software package because the themes and codes could be deciphered from hand-coding. There were three thematic categories: Individual factor themes (knowledge of risk, vulnerability, substance abuse, and mental health), Partnership factor themes (sexual inequalities and GBV), and Social factor themes (community/environment and cultural limitations). This process allowed for the discovery of a similarity of interactions of the participants in relation to their language, communication, and community. There were no discrepant cases found in the research to be factored in the analysis.

Evidence of Trustworthiness

The use of methodological triangulation to establish credibility and dependability was established in the data collection and analysis stages, respectively, as participants were given a questionnaire prior to the interview to gather demographic information. When the research questions were given in the individual interview, more probing

questions were asked for clarification if more analysis was needed from the participant responses. Member checking occurred at the completion of the interview through replaying the audio-tape to determine if the responses were accurate and if they reflected the true outcomes that the participant wanted to relay to me. If clarification or addition to responses was needed, I made field notes to reflect the additional data so that when the audiotapes were transcribed, these data would be added to the transcripts. This process was used to improve the accuracy and credibility of the study in the form of quality control.

External validity was established through thick description. When the participants left the boardroom, I wrote descriptions of the mannerisms of the participants and any other pertinent information about the setting at the time of the interview. I continuously checked and rechecked the data through the two sources of audio taping and transcription documents accounting for the confirmability concerns in trustworthiness of the data. There were no discriminating or bias characteristics about the participants or setting that would result in any issues in internal or external validity within the research.

Results

The research question was as follows: "What is the experience of South African women regarding the psychosocial determinants of gonorrhea?" To answer this question, the following themes emerged from the data.

Individual Factors

The first theme associated with Individual factors was knowledge of risk, specifically participants' awareness of their risk of gonorrhea. This corresponded to the

Information portion of the IMB model. Other themes associated with Individual factors were vulnerability (Theme #2), alcohol consumption (Theme #3), and stress or depression (Theme #4). These corresponded to the Motivation portion of the IMB model, specifically the motivation to practice safer sexual practices.

Theme 1: Knowledge of risk. Based on the interviews, few women understood their risk of gonorrhea. One of the participants commented that although prevention information is given at local clinics and NGOs, the knowledge is not practiced.

> Participant #6:
>
> Yes, we do [get education on gonorrhea and HIV] and no one takes it seriously. Or they know and don't really want to practice it in their lives. It passes through their mind.

The women found that the relationships and casual encounters that they obtained gonorrhea from were not conducive to a constant reminder and communication about the possibility of the risk of any diseases.

> Participant #6:
>
> Not much [to the type of discussion had regarding STIs before the positive result]. Nothing like that we talked about. STIs, we literally didn't talk about it.

The conversation in many of the cases was delayed and tended to occur after the positive diagnosis and subsequent treatment.

> Participant #6:
>
> No, [did your partner ever tell you that he had gonorrhea or any STIs] and I didn't ask as well.

Participant #8:

"No, we didn't talk about it. Didn't think about it actually. I didn't know we would get to that stage so soon. So it just happened."

The participants who tended to have more education, that is, those who were currently in varsity or receiving formal tertiary education, were more vocal on the impact that having consistent conversations with partner(s) have on positive, gonorrhea re-infection free relationships.

Participant #8:

Not, very much [confidence with using condoms and condom negotiation]. It's very important to use condoms, especially after that experience at a very young age. After that, I was like condoms all the way. If there are no condoms, there is no sex. It's just like that. We don't even have to discuss it.

Although the participants were well aware of the publications, activities, and services offered by LoveLife, including a television soap opera that nationally promotes safe sex to avoid HIV/AIDs, the women were still unaware that they were at risk of getting gonorrhea.

Theme 2: Vulnerability. Vulnerability focuses on the individual factors that increase the risk of HIV/STI infection that are out of the control of the individual. Several of these factors came out in the interviews including unemployment and gender inequality. The majority of women stated that they do not work and rely on family and boyfriends for basic needs that at times results to violence in relationships with limited control in the relationship.

Participant #8:

For most of them [women that stay in violent relationships], it's because they are dependent on the guy--financially and emotionally. For them, they come from a broken home so they look at the boyfriend as a refuge because when you go home, there is no food, mom is drunk and dad is drunk; no one has their story on. You go to your boyfriend's house and then everyone welcomes you there with warm hands, you can sleep there, they buy you clothes, everything. Behind closed doors, he beats you up-blue eyes. The mom wouldn't be concerned and would ask about the blue eye, but once you smile, they want to shower you with gifts. So that you forget the abusive relationship so I think [they stay] because of broken families and depending on the person.

Having multiple partners was found to be a factor in the data collection in the form of women seeking out affection and self-gratification from someone other than their main boyfriend.

Participant #9:

No, I didn't know [who gave her gonorrhea]. There was one time I did have a risky situation. So, it happened then, so I wasn't sure. I thought he [the boyfriend] would say it was from you, you came to me with this thing. But I had to speak to him about it to go to the clinic. When the time came to have sex, I couldn't so I had to be open why. But I didn't tell him about the risky decision I had on the side. [Tell me more about the risky decision you had on the side] It was a guy I was chatting with and then the feelings developed and went to another level but

> after we did that, I just saw that it was wrong. I was flattered with the words he was saying, and then I did that [had unprotected sex].

Vulnerability is an important psychosocial factor to predetermine among high risk groups because it lowers the ability to make safe choices in relationships or home dynamics that contribute to risk of disease.

Theme #3: Alcohol consumption. This was found to be an issue with some of the women who participated in the study. One of the participants admitted that the contact she has had with alcohol has had an ill effect on sexual behavior.

> Participant #9:
>
> With alcohol, I am weak when I drink. I can drink one cider and that is enough for me. [They] caught him before he took advantage of me.

Another participant made the association with alcohol use and the vulnerability that comes with substance abuse with women in her community that attend taverns (informal bars that are located in the township).

> Participant #10:
>
> Because some other girls are weak, so they get drunk and become weak, so people get their chances to take the, go with them, do things with them like rape them.

A final participant explained that she and her partner use alcohol frequently and attend taverns together. According to her, this has limited the amount of cheating that occur in the relationship according to her accounts and that when they used to drink independent of each other, it influenced and affected their relationship negatively. Based on the interviews, there were no issues with other drug use (AOD).

Theme #4: Stress or depression. Mental health concerns were found to be true with some of the women in the study. Mainly as a result of relationship issues and mistreatment by their partner were the main causes of stress leading to depression and low self-esteem. When asked if the participant (#12) ever felt depressed or stressed in her relationship with her boyfriend, she responded by saying,

> Yes [because of depression or stress] that time when I had gonorrhea and he left and didn't come back. When he came back, he shouted and said he didn't want me. And then I go and then sometimes when you love a person, you love serious. And I go and ask him, please come back with me I love you, but he came for that time and left and left and stayed with me when he saw that I love him. We are in a good relationship now.

Some of the depression came as a result of the positive gonorrhea result at the clinic:

> Participant (#10):
>
> I was depressed when I heard that I've got—when I went to the clinic and found out that I had gonorrhea. So I was very depressed because I trusted him a lot and now to have this like it was very painful and stressful.

Feelings of depression or sadness affected progress while in school:

> Participant (#8):
>
> I think so at some point [stress or feelings of depression or sadness] there is cheating. I felt betrayed because he said so many things and when you are in love, you believe. So I believed him and trusted him with my life by not using a condom. I could have contracted anything and I did. I wasn't depressed to the

> max. Imagine if it was HIV, I would still have it. So, I was like okay and couldn't concentrate in school, but was able to pass that year. Not with the marks I wanted, but I did make it through.

Although none of the participants stated that they suffer from clinical mental disorders, they do however have stress and anxiety because of instances concerning their relationships and lack of home structure and security (poverty). One participant (#9) stated:

> Me, yes [things at home that stress you out] there is a lot. Which is why I don't think a relationship is good for me right now. If someone passes away, like my grandmother, we got split up and that caused a lot of issues and fights in my family. With my boyfriend, I felt safe and happy to be there. When it was time to go home, I wasn't happy because there were fights about food, who must cook and clean and you become tense. When I go home I keep quiet, I go to my room, lock the door and keep to myself. I have a diary and write in it. I took my problems out in the diary and no one can read it. When I read it, I cry, and listen to my music, but it helps me. At least I'm taking stress out in my diary. I am coping.

Another participant (#10) noted stress from home due to family concerns:

> I have a brother in gangsterism, whenever there is a dead person reported, you wonder where he is because he is not home and that is the stress that I get.

Relationship Factors

The themes associated with Relationship Factors were: Sexual Inequalities (Theme #5) and Gender Based Violence (Theme #6). These correspond to the 'Behavior' portion of the IMB model and address condom use skills, condom use self-efficacy, and behavior influences that affect risky sexual practices.

Theme #5: Sexual inequalities. Gender-based sexual power inequality was observed through the study participants that included issues with infidelity with partners and lack of relationship control leading to inconsistency in condom use. One participant (#9) stated when asked "How confident are you with using condoms? Are you able to talk to your partner about using them" that:

> I'm 100% confident. I have been taught at school and at home, but it becomes a challenge when it is you and your boyfriend when he doesn't want to use a condom and then you have to settle with him and you don't want him to leave you. If he doesn't want to use one, then maybe you should go for a contraception, but the chance for getting HIV and STI is 100%, but only the pregnancy will be safe with contraception.

Another participant realized that with lack of sexual power in the relationship can result in a lack of self-esteem:

Participant (#7):

> Sometimes we fight about using condoms because he doesn't want to use condoms most of the time. [Why is that? Is it because you are in a relationship?] Yes because we are in a relationship. There is no use in using condoms. [Do you

> have high self-esteem or low self-esteem? What type of person are you?] Low self-esteem. I really don't know. [What were your feelings of control in the relationship? Did you feel in control of the relationship?] He is very controlling.

The lack of fidelity was seen in a relationship and had a major factor in relationship dynamics resulting in physical violence.

Participant (#12):

> I did get it from him [gonorrhea from my boyfriend] because he was cheating with the neighbor next to me. That girl used to be in taverns and when I told him it was him, we started fighting. [Before getting gonorrhea, did you ever talk about using condoms or STIs?] We always talk about it and use condoms. When he say no condoms today, I say no and we fight about it. And when I say no, I say no. Even when I don't want to have sex and he wants, I say no I don't want. No is no. [Is he fine with that now?] Yes, he was not fine before, but now he ends up knowing me when I say no I mean no.

Theme #6: Gender based violence. Among some of the study participants, violence was observed with physical indicators of this violence. A few of the women had visible marks that they said was due to their partners abusing them after fights and the majority of those said women are still currently with their partners. This was evident in the responses from one participant (#12):

> My boyfriend used to cheat with me and when I tried to cheat also he kicked me right. When I tried to defend myself, [he said] no you can't fight with me although you are cheating. When I tried to get out and go to the police station, he

> locked me in the house. [Do you live with him?] No, I live with my parent. He left me in his house for 2 days. No one came to see me until I said I'm sorry and it wasn't my fault. [How long have you been with this boyfriend?] Three years and yes, I am still with him. [When you told him you had gonorrhea, he got upset with you?] I was upset with him when I went to the clinic and was told I had gonorrhea. I came back with the mind that it was him. So we fight and fight and when someone fights with me, I fight strong.

A participant (#8) has tried to coax her boyfriend into violence by saying the following:

> Physical violence? Never. He can't hit me. I don't know if he can. I've tried so much. I wouldn't lie, I haven't. But then I know a lot of people around me that have. And every time, I would be amazed because they act so normal and it's not right. They would say, yeah I got choked today and it's not right.

At times the violence involves family members interceding on behalf of the abused (participant #12):

> [How does your family feel about your boyfriend?] They don't want him--serious. Because we are always fighting and one day he stabbed me with a fork in the back and I came home with blood. They said I must leave him and must not stay with him and they said he will kill you. And you see this finger was not working because he bent it backwards and my family was not comfortable. They see we are better now but don't talk to use about the relationship.

A participant (#10) cited that she knew of someone that experienced violence in a relationship and alcohol was a factor in the abuse:

> [Have you ever experienced violence in a relationship or know anyone that has?] Not me, but my friend. I didn't understand because she would always have blue eyes, but would go back each time. We knew that when it was weekend time and both were drunk, maybe on Saturday, on Sunday there would be something on her face each week. She is still with the same person and she is fine with it. When you talk to her about it, she says you are jealous. [Alcohol has a big influence on relationships you think?] Yes.

Social Factors

The themes associated with Social Factors were: Community/Environment (Theme #7) and Cultural Limitations (Theme #8).

Theme #7: Community/environment. The environment that one lives in can have an effect on supporting changing or maintaining safe behaviors especially in underserved communities. Identifying risks within a community can also have an impact on risk of infection. In Langa, many areas are poverty-stricken and riddled with unemployment. Some of the informal settlements are without clean water and sanitation, which can place constraints on personal choice and decision making when it comes to safe sexual behavior practices because of a lack of basic needs. Pressures within the community, i.e. pressures among peers and family can also be influential on these practices. One participant (#9) responded to this by saying:

> You get pressure from your friends. You may want to put yourself in their situation if they are happy so you will do things you don't want to do to be on her level. You aren't satisfied and feel used because you go for anyone that make you

> happy but that person doesn't see anything in you but just giving you what you think you want or maybe what you think will be better for you.

Another statement regarding pressure from friends (participant #12):

> [Do you feel that your environment has an influence on you sexually? Your behavior? Do you get pressure from your friends, your family to have sex?] Yes, my friends. Since then [after the positive diagnosis], they say you must have sex with your boyfriend when I had the problem. I decided to listen to them. They say I must get another boyfriend and leave my boyfriend. But I really love him (the first time I met him) so I don't want to leave him.

Although one participant (#10) mentioned pressure from friends, they maintained self-empowerment despite the pressure:

> [The last question is about the environment. And you said you stay in Langa. Does Langa and being in a township setting, have an influence on you and your behavior sexually? Do you get peer pressure from your friends, from family, from your boyfriend to have sex?] Um, from friends--they have children and I don't, so they tell me not to use a condom so I will have children, but I don't listen. They want me to have children while I'm still young because I'm 25 with no children. [So do you think it's a bad thing to have kids?] It's a bad thing. You are still a child at home and you bring in another child. In our townships, fathers are denying the children which is the most thing happening to us. Or maybe if they agree that that is their child, then his family would cut him off. [So mainly they are doing it because their family doesn't want to assist them, is this new thing?] It's

not new. It's been happening for a while. I want a proper job and then I can provide for my child and then I can have a child.

Another (participant #6) cited pressures from the community in regards to sexual behavior:

> …in the community you get pressure into things like sexual things. You get pornography and you don't get concrete information with teaching about STIs. You make an effort to do it. A lot of young people don't care to study about infections, and just want to enjoy life. That's what people are in my community. They just want to live life the way they want to.

Theme #8: Cultural limitations. In the Western Cape of Cape Town, South Africa, most African Blacks are of Xhosa descent. Within this culture, there are still many cultural practices that are carried out and traditions that are maintained, especially in township settings. The cultural beliefs are that males are the dominant and that women should be more submissive and maintain that in relationships and subsequently in marriage. The power struggle remains and continues with sexual behavior in most relationships. According to one respondent (participant #3) when asked what kind of things in tradition is she subject to in her relationship, she said,

> When my boyfriend wants to have sex now, I must have sex now.

Another stated (participant #9),

> When you get married at an early age, or get pregnant before marriage, you will be pressured to get married. Many times they want to have a lot of kids and

> maybe you aren't ready for that and do not matter if that is something you want to do.

Traditionally, men at a certain age are sent to "the bush" to learn about becoming a "Xhosa" man and to get circumcised as a reflection of his journey into manhood. One participant (#10) brought this up by saying,

> Culture is a very important thing to us. If he is still a boy, it is a problem because it's like the penis has a thing (foreskin) and I've heard it gets dirty and he doesn't want to use a condom and that dirtiness comes to your vagina, so it's better if he is a man. [Are there more men doing circumcision in the clinic now, or are they still going to the bush to do it?] Since it's been introduced (in the clinic), I believe the ones that go to the bush are criticizing the ones that went to the clinic. It's better to do it in the bush for respect, although it's much safer in the clinic, but then culturally, better to do in the bush. When a boy becomes a man, they have to sit alone and will compare you to a boy if you do it in the clinic from my own understanding.

With time comes change and women are slowly becoming more independent with education and employment, but in the township, this is still yet to be the standard. This slow shift in the change in tradition was seen in a couple of responses from the participants. One (participant #8) said after being asked if there were limitations on sexual behavior in regards to culture:

> At first I thought so, but after having sex for the first time, I've lost it—what the hell it's not coming back. You know you say I want to save it for marriage, and

> when it happens, it happens and you can't do anything about it. So now I can't follow culture and religion. At church they say you should save virginity until marriage, but it is past that now.

Another responded (participant #6) to the question, "Do you feel that your culture has an influence on your sexual behavior," by stating:

> I think it prevents us from having sex. Xhosa women are supposed to get married first and be a virgin. But it's not happening at all. Now, young women party, have sex and there is definitely a change from what it used to be.

Summary

The research question of this study asked, "What is the experience of South African women regarding the psychosocial determinants of gonorrhea?" The answer to this question is tri-fold. The answers come in three different aspects of the women being studied. The individual factors that affect women—the access to risk reduction *information* (from the IMB model) or lack thereof with consistency and their *motivation* (from the IMB model) to change risky behaviors that are affected by sense of vulnerability to how much control they have in their relationship, which for many women is high because of high unemployment and dependence on their partner. Some of the women with an association of higher education—currently in tertiary education, tend to have more information, self-esteem, and knowledge of preventive behaviors, resulting in positive motivation for providing contraception for HIV/STI preventive behavior especially after having a positive diagnosis of gonorrhea previously. Other individual factors such as alcohol dependence especially during social activities, and stress and

depression from relationship woes tend to lower vulnerability has negatively affected risk-reduction *behaviors* (from the IMB model) increasing risk of gonorrhea among other STIs and HIV.

Partnership factors such as sexual inequalities where the males have prevalence of sexual power and control, tend to make risk-reduction information and motivation out of the hands of the women also lowering risk-reduction sexual behaviors in women creating preventive behavior null and void. Gender based violence in the African black township community is so pervasive that most women know or have experienced this in their relationship. The result of this violence is reoccurrence and increased vulnerability to the women for basic needs and thus, lack of motivation to practice preventive sexual behaviors.

Social factors involving the environment can consist of many pressures found among the women, i.e. friends and family that influence women to maintain a relationship in order to have personal needs or family needs met when poverty runs rampant in their community. Cultural limitations still prevail in the African Black townships and this was also seen among the women where the men are seen as dominant and of the greatest power in the relationship. Women look to them as being responsible for contraception, although culturally and spiritually, pre-marital sex is not favorable. Even though this was seen among some women, there were some that felt more emancipated and independent and felt that high self-esteem and education are important in being motivated to make preventative decisions about sexual behavior.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to determine the perceptions and behaviors of African Black women in a township located in the suburbs of Cape Town, South Africa regarding the psychosocial and intrapersonal risk factors for gonorrhea. The nature of the study was to identify themes and topics from the study participants in order to better understand the sexual habits that led to a positive gonorrhea diagnosis. The study used the IMB theory that helped define the constructs that affected risk-reduction behavior among the African Black women surveyed. Twelve one-on-one qualitative interviews were conducted in an impoverished township in Cape Town that was hosted by the community research partner LoveLife, a nonprofit preventive sexual health organization in South African that has facilities throughout the country, inclusive of the Langa Township where the research was conducted. The reason the study was conducted was to contribute to the existing literature that currently has a gap with regards to psychosocial determinants that have a positive relationship to the etiology of gonorrhea among African Black women in Cape Town, South Africa. It was also conducted to form the basis of larger quantitative studies and development and implementation of tailored intervention programs tailored to black South African women as a model for other at-risk women around the world.

One key finding in this study was that the access to risk reduction information or lack thereof with consistency and motivation to change risky behaviors is affected by the women's sense of vulnerability to how much control she has in her relationship. Another

finding was that interpersonal factors such as sexual inequalities where the males have prevalence of sexual power and control tend to take risk-reduction information and motivation out of the hands of the women, also lowering risk-reduction sexual behaviors in women by creating a lack of preventive measures. Lastly, environmental and cultural limitations tended to cause pressure and stress among the women to engage in risky behaviors that also led to an increased risk of gonorrhea.

Interpretation of the Findings

In the literature review of this dissertation, I focused on the high incidence of STIs among Black women, especially from impoverished areas around the world. More specifically, gonorrhea was a concern in women because of psychosocial determinants found individually, interpersonally through relationships, and in society. The findings from the individual interviews with the women in Langa confirmed that these factors do contribute to an increased risk of HIV/STIs, but extend the knowledge that they work synergistically and not always independently of each other to influence motivation and sexual behaviors.

As stated in Chapter 2, it was evident that there are significant efforts to manage STIs in South Africa as most townships inclusive of Langa have free public health clinics where women can get tested and treated for STIs. The women from the study were recruited from a public health clinic based in the LoveLife facility where flyers were distributed. Gonorrhea prevalence still has yet to be conducted with epidemiological surveillance methods because HIV is still the major priority in the research community of Langa. The WiLLOW intervention conducted in the United States did address some of

the psychosocial aspects that this research reviewed, that is, self-esteem, self-efficacy, and condom negotiation with a similar conclusion that these variables have to be considered when developing any intervention program that targets a high risk group.

This research also confirmed that addressing social and structural barriers that increase vulnerability to STI infection—two of the key strategic objectives for the South African National AIDS Council's National Strategic Plan--is critical to decreasing sexual disease epidemics that affect the country, in particular impoverished areas that have limited basic resources. The research supports and confirms that there is a need for more nationally representative STI prevalence studies to monitor trends and success of STI treatment facilities and initiatives, especially in township clinics. Many of the women were treated and sent away with no follow-up on at-risk behavior changes and risk of reoccurrence of gonorrhea, as some of the women claimed that their partner would not go to receive treatment due to the unbelief that they had contracted gonorrhea out of the relationship or that they were given the disease by their partner.

Antimicrobial resistance was found to be the case in three of the participants interviewed or 25% of the subject population. Though not probed with questioning, three of the women stated that they had to be retreated at the local clinic due to the first round of antibiotics not working. One of the women said that it was probably due to her partner refusing to seek treatment and inferred that her being retreated was probably due to re-infection by her untreated partner. For the other two cases, the women were given another round of antibiotics (presumably ceftriaxone) whose disease failed to respond to the first-line treatment of ciprofloxacin.

The conceptual framework of the research, the IMB model, is a three-factor conceptualization of risk-reduction behavior that views specific preventive behaviors in the population of interest in order to reduce the risk of disease. The findings of this research can be delineated within the three fundamental determinants of gonorrhea, risk-reduction information, gonorrhea risk-reduction motivation, and gonorrhea risk-reduction behavioral skills, resulting in gonorrhea preventive behavior. The framework is not linear, as the modules can work synergistically with each other to obtain the desired result of no disease within an at-risk population.

Individual Factors/Information

This refers to the means of disease transmission and information concerning methods of preventing infections as a requisite of risk-reduction behavior.

Theme 1: Knowledge of risk. I found that South African women were knowledgeable about STIs, but not specific STIs, including gonorrhea. The respondents frequent LoveLife, which is a nonprofit organization that promotes positive sexual choices and prevention of sexually transmitted diseases in underrepresented communities in South Africa. The organization is well funded by overseas donors and has a broad reach in many untouched township areas that are devoid of many resources that are offered in more affluent communities in South Africa, in particular Cape Town. Although the participants were well aware of the publications, activities, and services offered by LoveLife, including a television soap opera that nationally promotes safe sex to avoid HIV/AIDs, the women were still very susceptible to STIs, in particular gonorrhea, which they were positive for.

Gonorrhea is not a household word used; and even at LoveLife, gonorrhea is grouped under the heading of STIs. The women were shocked and did not feel at risk for this disease because they were unaware of the burden of the disease other than it could be cured through antibiotics. In the township clinics, the nurses do not typically give statistics and risk factors for gonorrhea, which poses a significant threat to this population becoming sentinel to resistant forms of gonorrhea due to the lack of understanding and knowledge of the disease.

Most of the women did not speak to their partners whether casual or in exclusive relationships, and, in most cases, the conversation only began after receiving a positive diagnosis and subsequent treatment. Many of the women were trusting of their partner and felt that contraception should be his responsibility, and if protection was not used, it was a sign of commitment or exclusivity. This false sense of knowledge of STIs did lead to a false sense of risk of infection that was found in the research by Johnson and Budlender (2002) as mentioned in Chapter 2.

These findings extend the knowledge of what we know about this target population and also confirm that the lack of constant exposure to information to not only STIs in the general context but to particular types of STIs will make the population more susceptible to the disease. Even tertiary level education participants are in need of constant information exposure to eliminate the risk of gonorrhea and could be used as a resource to spread preventable behavior information to the less educated and younger groups in the townships to help to eliminate the potential epidemic of the microbial resistant form of gonorrhea. This research coincided with the findings of the study among

university students done by Reday and Frantz (2011) at two tertiary institutions in South Africa where it was found that there are more sources and resources of information, but the risk will not decrease unless there is an intention to provide consistency in support and exposure to accurate information.

Individual Factors/Motivation

This is the desire to change at-risk behavior in order to prevent STI transmission and prevention. The majority of women in the study were adamant that after having a positive gonorrhea diagnosis, they are fully confident and motivated to practice safer sex.

Theme 2: Vulnerability. Vulnerability affected the women's motivation to change at-risk behavior because the control was out of their hands. The overwhelming majority, 92% of women, were unemployed and dependent on their partner and his family (in some circumstances), which lowered their sexual power and ability to make decisions about sexual behavior. About half of the women continue to stay in abusive relationships with the partner who gave them the disease; for some, the partner never received treatment due to lack of believing that he was infected which makes for the answering of particular questions in the interview related to this determinant difficult to decipher among those women. The questions related included the following:

1. Why would you refrain from sexual contact if you or your partner had gonorrhea?
2. How confident are you with using condoms and are you able to negotiate with your partner to use condoms if you are not in a monogamous relationship?

3. How confident are you to refuse sexual intercourse with your partner if they choose not to use a condom?

This finding from the research coincided with the study by Johnson and Budlender (2002) that women are put at risk because of whom they have sex with (as found with the majority of women) rather than how many people they have sex with although in a couple of cases with the participants, affection and self-gratification was sought by casual encounters.

Theme #3: Alcohol consumption. This affects motivation to change risky behavior because it encourages sexual risk taking. As found in the research by Myers et al. (2013), for women in the Langa Township, a predominately Black African township, alcohol use is significantly high among women. The main question used to find out use of substances and their influence on sexual behavior during the interview was as follows:

1. Could you tell me about any contact you have had with substance abuse (alcohol or drugs) and how that might have affected your sexual activities?

Conversely to the research by Myers et al. (2013) and Wechsberg et al. (2008), the women did not report drug use with heavy drinking. The drinking did, however, contribute to risky sexual behavior, and the women did get gonorrhea as a result of this behavior. One woman in particular was placed in a dangerous position of almost being raped as a result of becoming weak while drinking, and another reported that she has seen many women in informal taverns or bars get taken advantage of while drinking heavily.

In this particular theme, there was no finding that extends the research but concurs with the notion that alcohol consumption does have an effect on motivation to engage in risky behaviors that have led to gonorrhea.

Theme #4: Stress or depression. This affects the mental health of women because relationship issues and mistreatment influences the motivation of whether a woman will prevent risky behavior or not. These stressors led to depression and low self-esteem among many of the participants. Questions in the interview relating to this psychosocial factor included the following:

1. Have you ever had feelings of depression due to individual stress from your relationship? Tell me how depression was a cause for engaging in sexual behavior.
2. Has low self-esteem ever been a reason to engaging in sexual behavior? How have you made this connection?
3. What type of things stress you out at home?
4. How does this stress affect your relationships?
5. How have feelings of loneliness or depression affected your sex life?

The women noted that they are often not asked about coping mechanisms and ways of dealing with stress and depression, as also found in literature that this phenomenon is often neglected in South African women. In Moultrie and Kleintjes's (2006) research, women were found to be significantly more likely than men to suffer from depressive disorders, and this research can conclude that a majority of the women deal with depression and anxiety because of poverty, lack of a stable home structure, and issues in

their relationship. One of the women, however, did find a resource in writing in a diary and listening to music when there is violence and instability at home.

The findings from this study add to the literature that mental health among this population is important to further explore in relation to sexual behaviors. The women have stressors that should not be ignored in the home and in her relationships. Once her mental health has been evaluated by trained health practitioners through caring networks, support structures among peer groups and family should be instituted to help with establishing coping mechanisms that can raise self-esteem and empowerment among this high risk group.

Relationship Factors/Behavioral Skills

Behavior skills refer to performing specific gonorrhea-preventive acts. The women felt that better communication and insistence of monogamy in her relationship were factors that allowed for more positive preventive sexual behaviors. For the majority of women, when diagnosed with gonorrhea, they refrained from sexual contact with their partner unless he was tested and treated (if a positive diagnosis) for the disease. This was only observed in the women that showed sexual power within her relationship.

Theme #5: Sexual inequalities. This refers to women's status or power in the household and in relationships and their effects on contraceptive use. Participants in the study were either very confident and had high self-esteem and self-efficacy when it came to condom negotiation and use after receiving a positive gonorrhea diagnosis or had a lack of sexual power in the relationship resulting in low self-esteem and low self-efficacy in condom negotiation. It was certain that women were taking more responsibility for

contraception than before the diagnosis because it became aware that although the majority did not feel at risk initially for STIs, they are actually susceptible to sexually transmitted diseases and are now fearful of getting an untreatable disease that could affect their lives, thus behavior change is greater than before getting gonorrhea.

In those relationships where sexual inequality was identified, issues in partner controlling behavior and relationship dynamics where physical violence was evident, infidelity was found to be common in the interviews. Questions in the interview to identify sexual inequalities were as follows:

1. What sexual practices would you refrain from performing if you or your partner had gonorrhea?
2. How confident are you with using condoms and are you able to negotiate with your partner to use condoms if you are not in a monogamous relationship?
3. How confident are you to refuse sexual intercourse with your partner if they choose not to use a condom?
4. What are your feelings of personal control in your relationship or with sexual partners?

The findings in this study confirm that gender based sexual power inequality is found among the women and does affect sexual behavior in casual and monogamous relationships. As found in the research by Pettifor et al. (2004), infidelity was found to be common among the women's partners but not for them, and if the women questioned the behavior, in some cases, violence and other abuses occurred. It was also found that women who tested positive for gonorrhea had more lifetime sexual partners, had the

average age of 21, and were unemployed. This was found in the statistics by Pettifor et al. (2004). I also discovered an association of sexual power and reliability of condom use and gonorrhea infection. With low condom use, self-efficacy was an increased risk of inconsistent condom use. What this study adds to the literature is that after a positive diagnosis among women, more educated (students in tertiary institutions) women tended to have more confidence in sexual condom negotiation and stronger choices about whether or not to stay in dysfunctional relationships than women who did not complete high school or did not further their education after high school.

Theme #6: Gender based violence. This was found to be a problem among the women that live in Langa. Langa is an impoverished area and most of the study participants live in informal settlements, where violence is typical of daily life. Relationships are no exception. Similar to what was documented by WHO (2013), GBV is ignored in the community and as a result, women continue to suffer health and disease burdens behind closed doors. There was a split among the women in the study. There were some women that are very traditional minded—meaning that they are comfortable with the traditional gender role of staying in the home while their partner or his family provides for the household, where other women were breaking those norms and becoming educated and getting jobs to have independence and more control in decision making as was also found in the study done by Strebel et al., (2006). Among those solely dependent on their partner, most cases of GBV were found. As documented in literature, male domination was found in those cases of dependence and alcohol abuse was indicated as well. This was found though the following questions in the interview:

1. Have you ever been a product of sexual abuse, or know of anyone that has been abused sexually? Please explain.
2. Have you ever experience violence in your relationship? If so, what were some of the things that angered your partner?

Adding to the literature, this study identified that GBV is still found to be a concern in the township and women are still suffering from abuse physically and mentally. Although all women had gonorrhea at some point, the behavior change after the diagnosis of more protective contraception was determined by factors such as GBV. Still being able to practice African traditions and respect among the genders is important to continue the culture in the future, but roles should be more defined and respected by both parties to reduce the burden of disease. Unfortunately, women are the effects of the division of the two genders and among the study participants that have visible and mental scars from the abuse they suffer, have no recourse to making their situation better and in most cases, are still with the partner even after countless situations of abuse. Because of this, re-infections occur and women become even more susceptible to other infections like HIV/AIDs and other STIs.

Social Factors/Behavioral Skills

Social factors of community/environment were found to have an influence on sexual behavior among the women. Influences of poverty, unemployment, lack of resources, and Xhosa traditional practices were found at times to increase risk of unprotected sexual encounters.

Theme #7: Community/environment. The community/environment has an influence on the impact on the risk of infection. Langa is a majority African black township community that is riddled with unemployment and poverty. Questions asked in the interview relating to this theme included:

1. How do you feel society has an influence on sexual behavior?
2. How does the environment that you live in play a part in your sexuality or sexual contact?

The majority of the women interviewed was unemployed and live in the informal settlement area of Langa with no means of finances except for government pensions and vouchers. Most of the informal settlements have shack dwellings without clean water and sanitation which leaves most of the women without resources that are crucial for proper decision making and safe choices, which was true from the research findings of Moultrie & Kleintjes (2006). This makes it hard for the women to perceive their environment as supportive and welcoming to positive behaviors when it comes to sexual activity. Women get pressure from family and peers to maintain unhealthy relationships due to community stressors such as adequate housing, violence, insufficient food, and lack of reliable healthcare resources. This was also found to be true in the study by Kalichman, et al. (2005). This research adds to the literature that environment dynamics have a major effect on perception of safety, support, and comfort among high risk women. When there is apathy towards living in impoverished conditions to suppress dire conditions faced with, there can be a major effect on taking risky behaviors with sexual practices to do

whatever feels good or right at the moment and not necessarily contemplate consequences of actions.

Theme #8: Cultural limitations. Cultural limitations are placed on women at a very early age. In the Xhosa culture, men are dominant and the providers in the household. Not only this, culture maintains that traditions are the way of life in regards to health, religion, and choices in daily life. As times change and women become more modern and independent comes the power struggle that some of the study participants find to be difficult when navigating through relationships and sexual practices, especially as was found in the study by Nzewi (2009) that women are perceived to be less informed about sex and not as knowledgeable in behavior and experience as the men that pursue them. Women are to maintain their virginity for marriage, and most of the women find that this practice is becoming more and more of an old tradition that is sure not to change with time. Some of the questions asked of the women about cultural limitations were:

1. Have you ever been considered "inexperienced" when it came to sex with your partner?
2. What are some cultural limitations placed on you in regards to sexual activity?

This research adds to the literature that pressures from family and friends within the Xhosa culture did have a small influence on sexual behaviors among a small majority of women, but ultimately they felt that with more modern times, the pressures from these sources were slowly coming to an end albeit it not supported by some of the male partners and family in regards to religion and cultural practices and standards.

Limitations of the Study

The limitations thought to be a challenge before the study was conducted was the determination of which psychosocial determinant(s) influenced risky behavior with gonorrhea. The answer to this after conducting the interviews was that most of the determinants whether individual, partnership factors, or within society had some influence on sexual behavior among the women. Once broken down into variables within each context, specific psychosocial factors such as level of education, sexual control, issues in vulnerability, economic status, and social and cultural influences all have an effect on whether preventive measures are taken to reduce incidences of gonorrhea among Black women.

There were no issues in recall bias as most of the women had to only recall sexual behavior within the past couple of years of their positive diagnosis of gonorrhea. Their reactions and responses to the questions were readily answered without pause or time to recollect their memory, which served as evidence that they did not have an issue with self-recall. There were however some responses that I felt were social desirable answers that could introduce social desirability bias and did not reflect true behavior patterns because a few of the women were more interested in appearing to have a positive, strong stigma within the LoveLife facility (and in the few cases where a LoveLife translator was used, even more so) that is known to provide sexual preventive information, than to tell the truth that they made unsafe and unwise decisions regarding sexual practices. Because of this, I had to consider their responses untrue and may have led to some information bias within the study.

Recommendations

Recommendations for further research should include a wide vast of women in surrounding townships in Cape Town inclusive of Khayelitsha (one of the largest townships in Cape Town) and Nyanga, and also townships within the greater Johannesburg area. Because of the interest of the women to "tell their story" and to have a say about their life, concerns, and behaviors, this study could easily expand to not only South Africa, but to all parts of the world. A comparison study of Black women in South Africa with Black women in populated areas in the United States could really give salient information about the information, motivation, and behaviors of sexually vulnerable women in regards to relationships and relevant target focused support interventions could be established all over the world. The effectiveness of the targeted interventions could have a significant impact on the disproportionate incidence and prevalence of HIV/STIs among Black women globally. The interventions have to allow the participants to speak freely about their vulnerabilities and influence of peer and family pressures on sexual behavior, and lack of economic and social support in their understanding of sexual behavior information and knowledge to actually make a difference in consistent practices of preventive sexual behaviors. Individual interviews is ideal to gather information with someone experienced and understanding of impoverished communities to incite real and authentic conversations among the participant group in regards to personal conversations about sexual behavior.

Implications

This topic is important to continue to study because, in the coming years, this population will be exposed to microbial resistant forms of gonorrhea, and the evidence is currently available that these women are not exposed to, or articulate about, the various forms of STIs. They are considered a vulnerable population because of the high rates of HIV/STIs and are thus in need of interventions that utilize the methodology from this and other similar studies.

The potential impact of this study for positive social change at the individual level is the confidence and sexual power that a vulnerable woman can develop. Women's understanding of the importance in maintaining confidence (information and motivation) in providing and using contraception whether in a monogamous or causal relationship is imperative in reducing the burden of disease among this population. Defining which psychosocial factors give a woman the highest risk of disease is imperative in order for a significant change in social sexual behavior to occur.

Within a family dynamic, women especially at younger ages may feel a sense that they must hide relationship woes especially when abuse in relationships is observed. The plight of women not securing jobs and not completing education make it very difficult for women to open up about sexuality for fear that the assistance given by the boyfriend or the boyfriend's family will be taken away and that they will go back to worrying about where the next meal will come from or where to secure clean clothes and other basic needs. Families have to have a significant change in conversation and dynamic in order for a woman to feel secure enough to trust those around them to speak up and not hide

concerns when they feel a sense of vulnerability to their sexual behaviors and relationships.

Developing social groups that are minimal in size and grouped according to locality can assist in opening up the dialogue necessary for women in the population to feel a sense that others believe and are open to discussing sensitive topics and are offering support to ignite a change in risky behavior, which can be implemented by local nonprofit organizations that are found in the townships in Cape Town. Community Health Workers (CHWs) are people in the communities that work specifically with vulnerable populations in regards to health and wellness and offer at-home assistance with health and social concerns, but it would be beneficial to include women at risk for HIV/STIs to be included in those that are in need of services. This is not looked upon as important currently within health based organizations because of the dire need to assist those with chronic illnesses, i.e. diabetes, hypertension, cancer, etc. A big concern as well is the funding implications that would be required in order for the social groups and home visits to occur and the logistics that would follow.

Having knowledge of the impact of education and economic factors on women of reproductive age can be resourceful in establishing job creation and awareness of the importance of education to extend options and form a way out of impoverished households and abusive relationships that can lead to high risk and burden of disease that can be addressed at the societal and policy levels, respectively. Most of the stakeholders and advocates of social change in regards to HIV/STIs affecting vulnerable populations found in townships and in rural areas of South Africa link together with other human

rights organizations (i.e. Treatment Action Campaign (TAC)), to spark movements of change, but are currently under sourced and underfunded. If this continues to occur, health challenges in communities in most need will continue to be disenfranchised and under-represented. According to Treatment Action Campaign (TAC, 2014), TAC is continuing to work to advocate for "quality healthcare" but has faced difficulty with the governing and lack of infrastructure in the public health system. This is where national and provincial government need to step up to provide guidance, support, finances and sustainable recommendations to not only decrease the burden of disease in the most vulnerable populations found in South Africa, but to provide sustainable resources to community based organizations to continue to make significant impacts on the communities they serve.

As found in this research, the qualitative methodology was an important research tool to get a good look at the true reasons why Black women continue to be disenfranchised when it comes to sexually transmitted diseases. Individual interviews by a qualified researcher who is aware and understanding of the population being studied is crucial for trust to be established for women to put their guard down and be open and frank in their responses. Identifying crucial themes through this type of research is imperative for follow-up quantitative studies that reach a greater number of women to get statistical results that will be important in outlining empirical implications that will be relevant in research papers and policy recommendations. The IMB theory was used as the framework to understand the individual information, motivation, and behavior constructs of the target population to outline specifically the psychosocial factors that affect risk of

disease within the population studied. This theory assisted in shaping the questions used in the research and would be the recommended choice for similar studies in the future to get a holistic view of the sexual nature of an individual, how they interact within a relationship, as well as in the society or cultural belief that they are engaged in.

The main recommendation for practice in a community such as Langa is that it is imperative to first get a sense of the dynamics of the community that is involved in the research. This allows dialogue to maintain consistency and also limit risks associated with studying a vulnerable population. Also, development of relationships by the researcher with the community partner assisting in the research from the executive level to the entry level is crucial in maintaining integrity and support throughout the data collection and data analysis stages of the research. At the end of the research, a presentation given by the researcher to the stakeholders in the community—inclusive of the community partner and its' stakeholders allows those involved and even those not directly involved to understand that they were a significant partner in the outcomes of the research done in their community.

Conclusion

This study focused on the attitudes and behaviors of Black women in the township of Langa in regards to their understanding of the variables that impacted their diagnosis of the STI gonorrhea. The literature stated that this population was most at risk for HIV/STIs and this research has showed that more work needs to be done to consider the individual components of sexual behavior among this population, partnership dynamics, and social/environmental influence. Although preventive methods have been

implemented by NGOs like LoveLife, inclusive of their local establishments and clinics, more continuous work is needed to keep the at risk group informed about their risk. The findings from this study can be of great social influence globally because regardless of age, SES or educational level, women feel a need to discuss behavior in a medium that is not judgmental or instructive, but one that fosters openness and support. Quantitative follow-up studies should be conducted to get access to the quantifiable psychosocial determinants of a larger population of women in order to tailor support groups and workshops to each particular variable to impact this sentinel group.

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Appendix A: Guiding Questions-English

Data Collection Tool for the study, "A Qualitative Study of the Attitudes and Behaviors of South African Women Regarding the Psychosocial Determinants of Gonorrhea"

Principal Investigator: Takiyah White (Ndwanya)

Qualitative Interview Guiding Questions-English

Individual
1. What type of relationship were you in when you contracted gonorrhea? 2. What kind of discussion about STIs did you have with your sexual partners prior to your positive test results? 3. Why do you believe you are at risk or not at risk for contracting gonorrhea? 4. Why would you refrain from sexual contact if you or your partner had gonorrhea? 5. What sexual practices would you refrain from performing if you or your partner had gonorrhea? 6. How confident are you with using condoms and are you able to negotiate with your partner to use condoms if you are not in a monogamous relationship? 7. What kind of discussion do you have with your sexual partners about using condoms? 8. How confident are you to refuse sexual intercourse with your partner if they choose not to use a condom? 9. Have you ever had feelings of depression due to individual stress or from your relationship? Tell me how depression was a cause for engaging in sexual behavior. 10. Has low self-esteem ever been a reason to engaging in sexual behavior? How have you made this connection? 11. Have you ever been a product of sexual abuse, or know of anyone that has been abused sexually? Please explain. 12. Could you tell me about any contact you have had with substance abuse (alcohol or drugs) and how that might have affected your sexual activities?

Partnership Factors
1. How long have you and your partner been in a relationship? (Was this the person that you contracted gonorrhea with or gave to? 2. Did your partner disclose his status with you prior to the positive test result? 3. If it was disclosed, what was your reaction and did you continue to have unprotected sex with him? 4. Why would you refrain from sexual contact if you or your partner had gonorrhea? 5. What sexual practices would you refrain from performing if you or your partner had gonorrhea? 6. What are your feelings of personal control in your relationship or with sexual partners? 7. How confident are you with using condoms? 8. What kind of discussion do you have with your sexual partners about using condoms? 9. How long has been your longest relationship? 10. What are your feelings of responsibility for contraception in your relationship or with

your sex partners?
11. What would you do if your sexual partner refused to use a condom?
12. How is your communication with your partner?
13. What is your comfort level with telling him your status or your feeling that he was maybe the one that gave you the disease?

Society

1. How do you feel society has an influence on sexual behavior? (Do you feel that society plays a role in sexuality?)
2. What type of environment do you reside in (i.e. township, suburb, urban setting?)
3. What type of things stress you out at home?
4. How does this stress affect your relationships?
5. How does the environment that you live in play a part in your sexuality or sexual contact?
6. Are you employed? If so, where do you work and if not, have you ever been employed?
7. What is your highest qualification? (i.e. Matric, FET or HET qualified, etc.)
8. How many times a week do you socially drink alcohol? (1-5 times/week, 6-10 times/week, >10 times /week)
9. Have you ever been considered “inexperienced” when it came to sex with your partner?
10. What are some cultural limitations placed on you in regards to sexual activity? (i.e. Xhosa culture women are not considered in authority when it comes to whether or not to use a condom)
11. How have feelings of loneliness or depression affected your sex life?
12. Have you ever experienced violence in your relationship? If so, what were some of the things that angered your partner?

Appendix B: Guiding Questions-Xhosa Translation

Data Collection Tool for the study, "A Qualitative Study of the Attitudes and Behaviors of South African Women Regarding the Psychosocial Determinants of Gonorrhea"
Principal Investigator: Takiyah White (Ndwanya)

Qualitative Interview Guiding Questions-Xhosa Translation

Ifomu yesivumelwano sokuthatha inxaxheba kuphando lwe IRB

Umphengululi oyintloko: Takiyah White (Ndwanya)

Uphononongo lwe IRB #**09-05-14-0132506**

Uyacelwa ukuba uthathe inxaxheba kwizifundo zophando. Umphandi umema onke amakhosikazi antsundu akwiminyaka ephakathi kweshumi elinesibhozo (18) ukuya kumashumi amathathu anesihlanu (35) awakhe anesifo sobhobhozo kwiminyaka emibini edlulileyo, abandakanyeke koluphononongo (study).Oluxwebhu lubizwa ukuba yifomu yokwazisa isivumelwano. Nceda ufunde esisaziso ngobulumko uthathe ixesha lakho phambi kokuba uthathe isigqibo.

Ndiyakucela ukuba uthathe inxaxheba kuphando lophononongo olubizwa ukuba yi :

"***Uhlobo lophononongo lwezimvo Nokuziphatha kwamanina ase Mzantsi Afrika malunga nokudibanisa ingqondo ngokumisiweyo kwesifo sobhobhozo."***

Umntu owongamele ezizifundo zophando ngu Takiyah White Ndwanya, MPH, doctoral student e Univesithi yase Walden. Lomntu ubizwa ukuba ngumphengululi oyintloko.

Ol uphando lwakuqhutyelwa kwi kliniki yakwa Lovelife kwa Langa nase Khayelitsha kliniki ezilokishini.

Injongo yoluphononongo

Injongo yoluphononongo kukuba:

- Injongo yoluphononongo kukuhlola ubungozi , ubudlelwane, ubumebezemfundo, impilo yeqabane kunxulumano iphembelela ubungozi besifo sobhobhozo phakathi kwamanina antsundu akwiminyaka elishumi elinesibhozo ukuya kumashumi amathathu anesihlanu ase Kapa e Mzantsi Afrika.

Inqubo yoluphononongo:

Ukuba uthatha inxaxheba koluphononongo , uyacelwa ukuba u:

- Thatha inxaxheba kudliwano –ndlebe phakathi kwakho nomphengululi oyintloko ozakuqhuba olu dliwano-ndlebe nge audio-tape kangangemizuzu engamashumi amathathu.
- Xa kusiyiwa ekupheleni kolu dliwano-ndlebe kuzakubakho"ilungu elizakuphicotha intlangano"lonto ithetha ukuba lonke ulwazi olufumaneke kolu dliwano-ndlebe luzakuxoxwa kunye nomthathi nxaxheba ukuqinisekisa ucoselelo oluthe lwafumaneka kolu dliwano-ndlebe.
- Oluphando luyakwenziwa ngoqhagamishelwano ne Lovelife Organization kwa Langa Nase Khayelitsha ngoncedo lwabo.

Nantsi eminye imizekelo yemibuzo:

1. Wawukunxulumano olunjani ukosulelwa kwakho sesisifo sobhobhozo?
2. Nibanengxoxo ezinjani wena neqabane lakho lokwabelana ngesondo ngendima yokusebenzisa iikondom?
3. Kwakuthatha ixesha elingakanani ukuba nonxibelelwano olude?

Umyalelo wokuzithandela ukwenza oluphononongo:

- Awunyanzelekanga ukuba uthathe inxaxheba koluphando loluphononongo. Akukho namnye kwa Lovelife ozakuphatha ngendlela eyahlukileyo ukuba uthe wathatha isigqibo sokungabandakanyeki koluphononongo. Ukuba uye wagqiba ekubeni uthathe inxaxheba koluphononongo ngoku, ungakwazi ukutshitsha ingqondo ethubeni. Ukwala okanye ukuyeka phakathi ekuthatheni inxaxheba akusoze kudumaze iimpembelelo zokubanako ukufumana iinkonzo kwa LoveLife. Ungayeka naninina.

Uncedo oluthi lufumaneke:

Uncedo olunokwenzeka ngokuthatha kwakho inxaxheba koluphando lophononongo

Lubandakanya:

- Ngokufaka igalelo koluphononongo liqhutywa yi Doctoral student enenjongo yokudibanisa nokuphucula imeko yokosulelana ngezifo zokwabelana ngesondo ukukhusela inqubo eyenzelwe amakhosikazi antsundu ekuhlaleni.

Ubungozi okanye ubunzima:

- Oluphando kucingeleka ukuba linobungozi obuncinane. Lonto ithetha ukuthi obubungozi budityaniswa noluphononongo bubungozi esidibana nabo umhla nezolo,

abukho ke obunye ubungozi obengezelekileyo kwabo bazakuthi bathathe inxaxheba koluphononongo

Iimbambano zomdla:

- Akukho zimbambano zomdla nomphandi, ukuthatha inxaxheba koluphononongo kunye ne LoveLife okanye omnye wabathathi nxaxheba.

Intlawulo:

- Uyakunikwa irisithi yokutya yasezivenkileni exabisa amashumi amahlanu erandi (R50) xa uthe walugqiba udliwano-ndlebe kwakunye nophicotho (olwakuthi lwenziwe lugqitywe kwangemini enye)njenge nxalenye yoluphononongo.Ukuba uthe warhoxa nangaziphina izizathu koluphononongo phambi kokuba lugqitywe awuzokuyifumana le risithi.

Ukhuseleko lwemfihleloyakho:

- Naluphina ulwazi othe wanikisa ngalo apha lwakugcinwa ngokuthembekileyo nokuyimfihlo. Umphandi akasoze asebenzise imfihlelo yobume bakho kwezinye izinto ezingaphandle koluphando. Kwaye umphandi soze alifake igama lakho okanye into ezakwazisa kwingxelo yoluphononongo. Ubume bamagama buyakugcinwa kwi (hard drive)isixhobo se (computer)isigcini-lwazi sakhe yedwakwaye obubume bamagama buyakugcinwa kangange minyaka emihlanu (5years)njengoko I yunivesithi ifuna njalo.

Inkcukacha Kwakunye nemibuzo:

Ungabuza nayiphina imibuzo onayo ngoku. Okanye ukuba unayo ngelinye ixesha uyakuthi unxibelelane nomphandi apha. Ukuba ufuna ukuthetha emfihlakalweni malunga namalungelo akho njengomntu othatha inxaxheba, ungatsalela umnxeba ugqirha [redacted]. Yena omele iyunivesithi yase Walden ongathi uxoxe nay eke iinombolo zakhe nazi [redacted]. Inombolo yase yunivesithi yase **09-05-14-0132506** Walden yesiqinisekiso soluphononongo ngu kwaye iphelelwa ngomhla we **September 4, 2015**.

Ingxelo yesivumelwano:

Ndiyifundile yonke le nkcukacha ingaphezulu kwaye ndiluqonda oluphononongo kuloko ndithatha esisigqibo ukuzibandakanya .ngokutyikitya kwam apha ngezantsi okanye ngokutsho ngokwam ukuba “ndiyavuma”,Ndiyayiqonda ukuba ndiyavumelana nemithetho nemiqathango ecaciswe ngasentla kwaye ndizakuyithatha inxaxheba koluphononongo.

Igama lomthathinxaxheba

_____

Usuku lwesivumelwano

_____

Isayini Yomthathinxaxheba

_____

Isayini Yomphandi

_____

Appendix C: Demographic Survey

Data Collection Tool for the study, "A Qualitative Study of the Attitudes and Behaviors of South African Women Regarding the Psychosocial Determinants of Gonorrhea"

Demographic Survey

Instructions: Please answer the following questions to the best of your ability.

Unique Identifier Number: _____

1. Name of township where you stay:

2. Highest Level of Education Achieved (Please check one):
   _____ Primary School
   _____ Less than grade 12
   _____ Passed Matric with a certificate
   _____ University
   _____ Honors degree
   _____ Masters degree
   _____ Doctorate degree

3. Are you currently employed?
   _____ Yes
   If yes, what is your average monthly income? _____
   _____ No

4. What is your marital status?
   _____ Single
   If single, are you currently in a relationship? _____
   _____ Married
   _____ Widow
   _____ Divorced

5. Age _____

Appendix D: IRB Consent Form-English

IRB Consent Form-English

IRB Consent Form to Participate in Research

Principal Investigator: Takiyah White (Ndwanya)

IRB Study # 09-05-14-0132506

You are being asked to take part in a research study. The researcher is inviting Black women aged 18-35 that have had gonorrhea within two years to be in the study. This document is called an informed consent form. Please read this information carefully and take your time making your decision.

I am asking you to take part in a research study called:
"A Qualitative Study of Attitudes and Behaviors of South African Women Regarding the Psychosocial Determinants of Gonorrhea."

The person who is in charge of this research study is Takiyah White Ndwanya, MPH, doctoral student at Walden University**.** This person is called the Principal Investigator.

The research will be conducted at LoveLife Clinics in Langa and Khayelitsha township clinics.

Purpose of the study:
The purpose of this study is to:

- Explore individual risk, and how community, education status, health of partner relationship influences risk of gonorrhea among Black women aged 18-35 from Cape Town, South Africa.

Study Procedures:
If you take part in this study, you will be asked to:

- Participate in a one-on-one interview with the principal investigator that will be audio-taped for approximately 30 minutes.

- At the completion of the individual interview, there will be a "memberchecking session" which means all information obtained in the interview will be discussed with the participants to ensure accuracy was obtained in the interview.

- The research will be done through the LoveLife organization in the Langa and Khayelitsha facilities.

Here are some sample questions:

1. What type of relationship were you in when you contracted gonorrhea?
2. What kind of discussion do you have with your sexual partners about using condoms?
3. How long has been your longest relationship?

Voluntary Nature of the Study:

- You do not have to participate in this research study. No one at LoveLife will treat you differently if you decide not to be in the study. If you decide to join the study now, you can still change your mind later. Declining or discontinuing participation will not negatively impact your ability to receive services at LoveLife. You may stop at any time.

Benefits:

The potential benefits of participating in this research study include:

- Contributing to a study that is conducted by a doctoral student that has the goal of adding to research to better Sexually Transmitted Infections (STIs) prevention programs tailored to Black women in their community.

Risks or Discomfort:

- This research is considered to be minimal risk. That means that the risks associated with this study are the same as what you face every day. There are no known additional risks to those who take part in this study.

Conflicts of Interest:

- There are no conflicts of interest with the researcher to take part in this study with LoveLife or any of the participants.

Payment:

- You will be given a R50 grocery store voucher to thank you for your participation in this study.

Privacy:

- Any information you provide will be kept confidential. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by hard drive on her

personal computer and data will be kept for a period of 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher. If you want to talk privately about your rights as a participant, you can call [redacted]. She is the Walden University representative who can discuss this with you. Her number is [redacted]. Walden University's approval number for this study is **09-05-14-0132506** and it expires on **September 4, 2015**.

The researcher will give you a copy of this form to keep.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing below or by giving verbal consent of "I Consent", I understand that I am agreeing to the terms describe above and will participate in the study.

Printed Name of Participant _____

Date of Consent

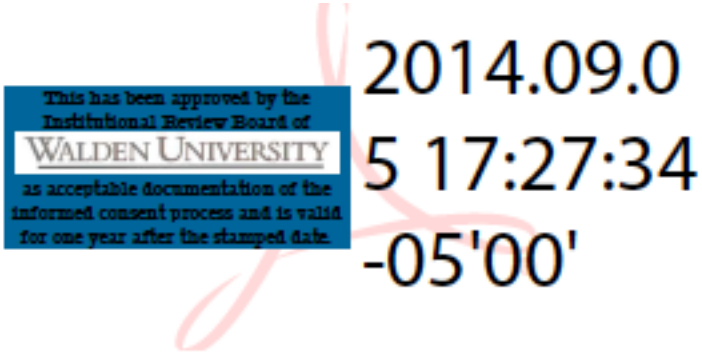
_____

Participant's Signature

_____

Researcher's Signature

_____



Appendix E: IRB Consent Form-Xhosa

IRB Consent Form-Xhosa

Ifomu yesivumelwano sokuthatha inxaxheba kuphando lwe IRB

Umphengululi oyintloko : Takiyah White (Ndwanya)

Uphononongo lwe IRB **# 09-05-14-0132506**

Uyacelwa ukuba uthathe inxaxheba kwizifundo zophando. Umphandi umema onke amakhosikazi antsundu akwiminyaka ephakathi kweshumi elinesibhozo (18) ukuya kumashumi amathathu anesihlanu (35) awakhe anesifo sobhobhozo kwiminyaka emibini edlulileyo, abandakanyeke koluphononongo (study).Oluxwebhu lubizwa ukuba yifomu yokwazisa isivumelwano. Nceda ufunde esisaziso ngobulumko uthathe ixesha lakho phambi kokuba uthathe isigqibo.

Ndiyakucela ukuba uthathe inxaxheba kuphando lophononongo olubizwa ukuba yi :

"***Uhlobo lophononongo lwezimvo Nokuziphatha kwamanina ase Mzantsi Afrika malunga nokudibanisa ingqondo ngokumisiweyo kwesifo sobhobhozo."***

Umntu owongamele ezizifundo zophando ngu Takiyah White Ndwanya, MPH, doctoral student e Univesithi yase Walden. Lomntu ubizwa ukuba ngumphengululi oyintloko.

Ol uphando lwakuqhutyelwa kwi kliniki yakwa Lovelife kwa Langa nase Khayelitsha kliniki ezilokishini.

Injongo yoluphononongo

Injongo yoluphononongo kukuba :

- Injongo yoluphononongo kukuhlola ubungozi , ubudlelwane, ubumebezemfundo, impilo yeqabane kunxulumano iphembelela ubungozi besifo sobhobhozo phakathi kwamanina antsundu akwiminyaka elishumi elinesibhozo ukuya kumashumi amathathu anesihlanu ase Kapa e Mzantsi Afrika.

Inqubo yoluphononongo :

Ukuba uthatha inxaxheba koluphononongo , uyacelwa ukuba u :

- Thatha inxaxheba kudliwano –ndlebe phakathi kwakho nomphengululi oyintloko ozakuqhuba olu dliwano-ndlebe nge audio-tape kangangemizuzu engamashumi amathathu.

- Xa kusiyiwa ekupheleni kolu dliwano-ndlebe kuzakubakho"ilungu elizakuphicotha

intlangano”lonto ithetha ukuba lonke ulwazi olufumaneke kolu dliwano-ndlebe luzakuxoxwa kunye nomthathi nxaxheba ukuqinisekisa ucoselelo oluthe lwafumaneka kolu dliwano-ndlebe.

- Oluphando luyakwenziwa ngoqhagamishelwano ne Lovelife Organization kwa Langa Nase Khayelitsha ngoncedo lwabo.

Nantsi eminye imizekelo yemibuzo :

1. Wawukunxulumano olunjani ukosulelwa kwakho sesisifo sobhobhozo?
2. Nibanengxoxo ezinjani wena neqabane lakho lokwabelana ngesondo ngendima yokusebenzisa iikondom?
3. Kwakuthatha ixesha elingakanani ukuba nonxibelelwano olude?

Umyalelo wokuzithandela ukwenza oluphononongo:

- Awunyanzelekanga ukuba uthathe inxaxheba koluphando loluphononongo. Akukho namnye kwa Lovelife ozakuphatha ngendlela eyahlukileyo ukuba uthe wathatha isigqibo sokungabandakanyeki koluphononongo. Ukuba uye wagqiba ekubeni uthathe inxaxheba koluphononongo ngoku, ungakwazi ukutshitsha ingqondo ethubeni. Ukwala okanye ukuyeka phakathi ekuthatheni inxaxheba akusoze kudumaze iimpembelelo zokubanako ukufumana iinkonzo kwa LoveLife. Ungayeka naninina.

Uncedo oluthi lufumaneke:

Uncedo olunokwenzeka ngokuthatha kwakho inxaxheba koluphando lophononongo

Lubandakanya:

- Ngokufaka igalelo koluphononongo liqhutywa yi Doctoral student enenjongo yokudibanisa nokuphucula imeko yokosulelana ngezifo zokwabelana ngesondo ukukhusela inqubo eyenzelwe amakhosikazi antsundu ekuhlaleni.

Ubungozi okanye ubunzima:

- Oluphando kucingeleka ukuba linobungozi obuncinane. Lonto ithetha ukuthi obubungozi budityaniswa noluphononongo bubungozi esidibana nabo umhla nezolo, abukho ke obunye ubungozi obengezelekileyo kwabo bazakuthi bathathe inxaxheba koluphononongo

Iimbambano zomdla:

- Akukho zimbambano zomdla nomphandi, ukuthatha inxaxheba koluphononongo kunye ne LoveLife okanye omnye wabathathi nxaxheba.

Intlawulo:

- Ngo kuthabatha inxaxheba koluphando uyaku nikwa ivoucher ye R50.

Ukhuseleko lwemfihleloyakho:

- Naluphina ulwazi othe wanikisa ngalo apha lwakugcinwa ngokuthembekileyo nokuyimfihlo. Umphandi akasoze asebenzise imfihlelo yobume bakho kwezinye izinto ezingaphandle koluphando. Kwaye umphandi soze alifake igama lakho okanye into ezakwazisa kwingxelo yoluphononongo. Ubume bamagama buyakugcinwa kwi (hard drive)isixhobo se (computer)isigcini-lwazi sakhe yedwakwaye obubume bamagama buyakugcinwa kangange minyaka emihlanu (5years)njengoko I yunivesithi ifuna njalo.

Inkcukacha Kwakunye nemibuzo:

Ungabuza nayiphina imibuzo onayo ngoku. Okanye ukuba unayo ngelinye ixesha uyakuthi unxibelelane nomphandi apha. Ukuba ufuna ukuthetha emfihlakalweni malunga namalungelo akho njengomntu othatha inxaxheba , ungatsalela umnxeba ugqirha [redacted].Yena omele iyunivesithi yase Walden ongathi uxoxe nay eke . iinombolo zakhe nazi [redacted].Inombolo yase yunivesithi yase Walden yesiqinisekiso soluphononongo ngu 09-05-14-0132506 kwaye iphelelwa ngomhla we _____.

Ingxelo yesivumelwano:

Ndiyifundile yonke le nkcukacha ingaphezulu kwaye ndiluqonda oluphononongo kuloko ndithatha esisigqibo ukuzibandakanya .ngokutyikitya kwam apha ngezantsi okanye ngokutsho ngokwam ukuba “ndiyavuma”,Ndiyayiqonda ukuba ndiyavumelana nemithetho nemiqathango ecaciswe ngasentla kwaye ndizakuyithatha inxaxheba koluphononongo.

Igama lomthathinxaxheba _____

Usuku lwesivumelwano _____

Isayini Yomthathinxaxheba _____

Isayini Yomphandi _____

This has been approved by the Institutional Review Board of WALDEN UNIVERSITY as acceptable documentation of the informed consent process and is valid for one year after the stamped date.

2014.09.05 17:27:50 -05'00'

Appendix F: Copyright Permission

Gmail by Google

Takiyah White [redacted]

Request for permission to use the IMB figure in dissertation.

3 messages

Takiyah White [redacted] Tue, Apr 14, 2015 at 12:07 PM
To: JEFFREY.FISHER[redacted]

Hello Dr. Fisher,
My name is Takiyah White Ndwanya, Doctoral student at Walden University. I was wondering if I could get permission to use your figure of the IMB model in my dissertation research. I have used the model as my conceptual framework for my research.

Thank you for your time and consideration of the use of your work.

Regards,
Takiyah

Takiyah W. Ndwanya, MPH
Ph.D. Candidate in Epidemiology, Walden University
Owner, Metropolitan Hair/Pinecrest Beauty School

Jeffrey Fisher [redacted] Tue, Apr 14, 2015 at 12:24 PM
To: Takiyah White [redacted]

You have my permission. Best of luck with your work! Jeff

Sent from my iPhone
[Quoted text hidden]

Takiyah White [redacted] Tue, Apr 14, 2015 at 1:03 PM
To: Jeffrey Fisher [redacted]

Thank you!

Takiyah

Takiyah W. Ndwanya, MPH
Ph.D. Candidate in Epidemiology, Walden University
Owner, Metropolitan Hair/Pinecrest Beauty School

[Quoted text hidden]