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Exploring Associations between Theory of Gender & Power Constructs and STI Risk among
Detained African American Girls

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By

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B.S. Public Health
Saint Louis University
2016

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An abstract of
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Abstract

Exploring Associations between Theory of Gender & Power Constructs and STI Risk among
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By Genevieve R. Rizzo

Introduction: Over 20 million new cases of sexually transmitted infections (STIs) occur each year in the United States. Previous research has shown that detained African American girls are more likely to experience compounded STI risk due to social determinants of health affecting their intersectional identities. Having an STI increases risk of acquiring human immunodeficiency virus (HIV), which highlights a need for intervention and research aimed at addressing these underlying risk factors. This study aimed to retroactively apply a theoretical framework, the Theory of Gender & Power (TGP), to determine how the TGP constructs of sexual division of labor (SDL), sexual division of power (SDP) and structure of cathexis (CATH) influence girls' risk of acquiring STIs and HIV.

Methods: A secondary data analysis of baseline IMARA study data was conducted among 188 detained African American girls. Three independent composite risk variables were created to represent acquired TGP-related risk, and six dependent STI risk variables of interest were selected based on the literature. Bivariate associations and multivariate logistic regression models were used to assess which of the TGP constructs could serve as statistically significant predictors of STI risk.

Results: Bivariate association analyses indicated statistically significant relationships between relationship control and all three TGP constructs of SDL ($p=0.032$), SDP ($p<0.001$), and CATH ($p=0.021$). Only the SDP composite variable was significantly associated with fear of condom negotiation ($p<0.001$), refusal self-efficacy ($p<0.001$), unprotected sexual encounters ($p<0.001$), and lifetime sexual partners ($p<0.001$). Condom use skills were not significantly associated with any TGP constructs. Multivariate logistic regression models showed that SDP composite risk is a significant predictor of low levels of relationship control (AOR=1.319; 95%CI=[1.054, 1.651]; $p=0.016$), high fear of condom negotiation (AOR=1.826; 95%CI=[1.409, 2.367]; $p<0.001$), low refusal self-efficacy (AOR=1.754; 95%CI=[1.359, 2.264]; $p<0.001$), more unprotected sexual encounters (AOR=1.445; 95%CI=[1.132, 1.845]; $p=0.003$), and more lifetime sexual partners (AOR=1.708; 95%CI=[1.335, 2.185]; $p<0.001$).

Discussion: HIV prevention intervention efforts should intervene upon the sub-constructs of sexual division of power risk, including physical exposures and behavioral risks. Findings align with similar studies and strengthen the body of literature surrounding theory-driven secondary data analyses within compounded risk populations.

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1   Introduction

Despite continuing advances in medical care and technology, human immunodeficiency virus (HIV) remains an epidemic in the United States. Nationally, more than 1.1 million people are living with HIV, and adolescents between the ages of 13 to 24 years are a particularly vulnerable population (SMAIF, 2017). As of 2014, more than 70,000 American youth were living with HIV (CDC, 2017). Today, one in four new HIV infections occurs among adolescents, and nearly 60% of new diagnoses are African American youth (CDC, 2017). When examined by region, the devastation of this disease is compounded; southern states account for over 50% of new HIV diagnoses each year (AIDSVu, 2017). In Atlanta, Georgia, more than 32,000 people are living with HIV and over 1,200 of them are under the age of 24 (AIDSVu, 2017). Additionally, youth are at increased risk for contracting and spreading sexually transmitted infections (STIs). Adolescents constitute over 50% of new STIs each year, with southern states suffering from some of the highest rates across the country; Georgia ranks among the top ten states with the highest rates of common STIs, such as chlamydia and gonorrhea (CDC, 2016).

These staggering STI statistics are particularly important when considering HIV prevention among this population, since the presence of a STI can increase an individual's likelihood of becoming infected with HIV (CDC, 2017). People who contract syphilis, gonorrhea, or herpes often either already have HIV or are more likely to become infected with HIV in the future (CDC Fact Sheet, 2017). This is because sexual risk factors and behaviors that increase risk of getting an STI can also increase risk of getting HIV (CDC Fact Sheet, 2017). These risk behaviors include having unprotected vaginal, oral, or anal sex (sex without a condom), having multiple partners, and having sex while intoxicated or under the influence of drugs (CDC Fact Sheet, 2017). In addition, STIs such as chlamydia and gonorrhea can cause sores on the skin of the genital areas, making it easier for HIV to enter the body and infect an individual (SERC, 2018). Once infected, treating and controlling HIV viral loads can be difficult,

especially without proper access to antiretroviral therapy medications (ART) and skilled infectious disease healthcare professionals.

Research shows that a majority of HIV-positive adolescents have uncontrolled viral loads and face the risk of transmission to uninfected sexual partners and re-infection for themselves. The term "serodiscordant" describes couples with one person who is HIV-positive and one who is HIV-negative, since their blood serum status is different due to the presence or absence of infection, respectively. People in mixed-status relationships face a unique set of issues related to this discordance, including an unbalanced amount of focus on each partner's health, the physiological effects of the disease, side effects of antiretroviral medication regimens, self-esteem issues, and anxiety surrounding sexual activity and intimacy (AIDS InfoNet, 2014). Among serodiscordant couples in particular, HIV prevention and care are dependent upon an accurate understanding of the positive partner's suppression status. Because beliefs about a partner's viral load may factor into sexual decision-making as well as choices surrounding risk behaviors, open communication about HIV status is vital within relationships (Conroy et al., 2016).

However, many HIV-positive adolescents are either unaware of their HIV status, or are fearful of disclosing their status to partners out of fear of rejection and isolation (POZ, 2018). Gender power inequalities can play a significant role in relationship dynamics and status disclosure, especially among serodiscordant couples, because gender roles shape the environment in which HIV-positive men and women have these conversations. Despite this understanding, partner communication about suppression status is low and complicated by fear, anxiety, and mistrust between partners, making effective communication difficult (Bhatia et al., 2017). Both STI and HIV prevention should be viewed as collaborative processes between sexual partners, since it is in both partners' best interest to minimize the risk of transmission for the sake of their health. In order to apply this perspective, it is imperative to explore how relationship dynamics and gender constructs influence men and women's perceived roles in the relationship with respect

to STI and HIV prevention and risk reduction (Leonard, Markham, Biu, Shegog & Paul, 2017; Orengo-Aguayo & Perez-Jimenez, 2009).

To most effectively examine the role that these interacting factors play in public health, research must be theory-driven and evidence-based, and address the social determinants of health that influence the experience of these diseases and the individuals affected by them. Therefore, the intersection of theory, research, and practice cannot be overlooked. Behavioral science theory provides a set of interrelated concepts and propositions that allow for a systematic view of health conditions and events by specifying relationships among predictor variables (Glanz, Lewis, & Rimer, 2015). By considering the individual-, interpersonal-, and environmental-level circumstances and factors present in an adolescent's life, researchers can gain a better understanding about missed opportunities for care and services among vulnerable populations. Overall, social determinants of health compound sexual and reproductive health issues faced by women on multiple levels.

Therefore, to address these compounded risks, this study applies the Theory of Gender & Power (TGP) as its foundational theory in order to better characterize the health outcomes among women. TGP is considered to be a "critical theory", a term that describes public health perspectives that are less operationalized and traditional than classical behavioral science theories (DiClemente, Crosby, & Kegler, 2010). One key underlying idea of TGP is the concept of intersectionality. Intersectionality is a framework for understanding how multiple social identities (i.e., race, gender, sexual orientation, socioeconomic status, and disability) intersect at the micro-level of individual experience to reflect interlocking systems of privilege and oppression at the macro-social level (Crenshaw, 1989). Essentially, the theory postulates that an individual's social identities experience complex interactions rather than function independently. This core idea allows public health professionals to conceptualize disparities and social inequalities as multidimensional, and has been used in many other studies to explore women's health (Bauer, 2014; Bowleg, 2012; Wingood et al., 2013; Wingood & DiClemente, 2000). This

concept can therefore provide context to the STI and HIV disparities seen among individuals with multiple identities, such as detained Black girls (Figure 1).
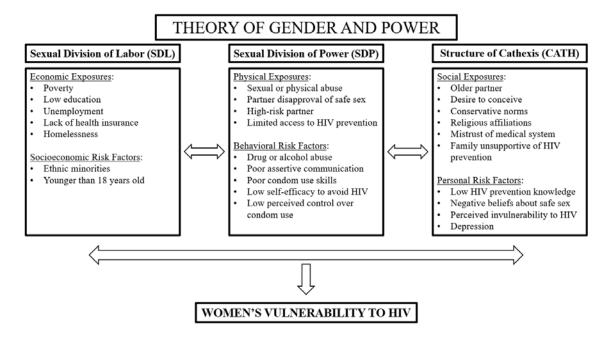

Figure 1. Theory of Gender and Power Model (Wingood & DiClemente, 2000).

Despite its use in other behavioral science studies, there is a gap in literature with regard to TGP's application in compounded risk populations. While extensive research has explored the application of TGP with respect to sexual and reproductive health outcomes, very little research has examined its role in the lives of marginalized populations, including detained females (Bauer, 2014; Bowleg, 2012; Wingood et al., 2013). Most applications of TGP are in the context of intimate partner violence, and are not necessarily directly involved in risk reduction and prevention efforts (Panchanadeswaran et al., 2008). Additionally, TGP is more commonly used in research allowing for primary data collection, since it can guide the development of interview questions, variable creation, and analyses (Wingood & DiClemente, 2000). Applying this theory in a secondary data analysis and attempting to map theoretical constructs onto existing variables retroactively is uncommon among quantitative studies, and is an innovative aspect of this research.

Overall, this study aims to explore the intersecting influences contributing to detained Black girls' HIV and STI risk, guided by theoretical constructs from TGP. Therefore, the purpose of this study is to identify which of the TGP constructs are significantly associated with STI risk factors among this population, and to subsequently examine the extent to which the TGP constructs can predict the girls' sexual health risk.

2   Literature Review

2.1   Introduction

Most contemporary research in HIV has been conducted among men who have sex with men, oftentimes ignoring the burden of disease faced by women, even though women have been affected by the HIV epidemic since it began in the 1980s (CDC, 2013). Women account for more than 20% of new HIV infections, and comprise one in four deaths among people with HIV diagnoses (KFF, 2014). This risk, however, becomes compounded when additional social and gender identities are applied. This review of existing surveillance data, literature, and previous studies highlights the unique burden of sexual health diseases faced by detained African American adolescent girls in today's society, as well their sexual health risk factors and determinants contributing to these disparities. It also highlights the applicability of TGP among marginalized populations, and provides justification for the present study.

2.2   HIV and STIs

The United States continues to face challenges addressing the incidence of STIs and HIV. Estimates show that there are over 20 million new cases of STIs each year, which contributes to a significant economic burden of over $16 billion annually for American healthcare systems (CDC Fact Sheet, 2016). Some of the most common types of STIs include chlamydia and gonorrhea, which are bacterial infections that are difficult to diagnose and treat because they are often asymptomatic (SERC, 2018). More than 1.5 million cases of chlamydia and almost 500,000 cases of gonorrhea were reported in 2016, which was the highest recorded number to date (CDC Fact Sheet, 2016). Chlamydia in particular can have devastating consequences for women, who account for nearly half of all reported cases (CDC Fact Sheet, 2016). When chlamydia and gonorrhea are left untreated, women are at increased risk of developing pelvic inflammatory disease (CDC Fact Sheet, 2016). Nevertheless, disease prevalence remains high despite

connections to care and treatment, with 110 million total infections among men and women across the country (CDC Fact Sheet, 2013).

Perhaps one of the most serious communicable sexual health conditions is HIV. While antibiotics can cure chlamydia and gonorrhea, untreated conditions can result in chronic pain, reproductive health complications, infertility, and HIV (CDC Fact Sheet, 2016). This is because STIs like chlamydia and gonorrhea can result in swelling or sores on the skin, which makes it easier for HIV to enter the body and infect the individual (SERC, 2018). Once infected, HIV weakens the body's immune system over the course of several years and makes it harder for an individual's body to fight off other illnesses (SERC, 2018). Eventually, HIV can develop into acquired immune deficiency syndrome (AIDS), which is the most serious stage of HIV infection and is characterized by the body's inability to combat opportunistic infections (AVERT, 2017; SERC, 2018).

While there is no cure for HIV or AIDS, proper treatment and antiviral medications can help control the HIV infection and prevent further development into AIDS by keeping the person's viral load low (SERC, 2018). Therefore, it is imperative to treat and control sexual health conditions such as HIV and STIs, since receiving timely access to testing and services can prevent the progression of these diseases and reduce the risk of transmission to sexual partners (CDC, 2015). Furthermore, common STIs generate both direct and indirect medical costs to the country, in the form of lost productivity due to pain and suffering (CDC Fact Sheet, 2013).

Various populations experience the burden of HIV and STIs differently, and intersectionality of identities can contribute to increased risk of transmission and infection. Most HIV research has been conducted among men who have sex with men (MSM), since they are considered the highest risk group; these research studies employed mixed methods to better understand their experiences with the disease (Levy et al., 2014; Lorenc et al., 2011; Malebranche, Peterson, Fullilove & Stackhouse, 2004; Maulsby et al., 2014). However, surveillance data shows that while less commonly infected, women and adolescents are more

affected by these sexual health outcomes, and certain sub-populations within these groups are at even higher risk (CDC Fact Sheet, 2013).

2.3   Burden of Disease in Vulnerable Populations

2.3.1   African American Women

        In Atlanta, there are almost 17,000 people living with HIV, and 72% of them are African American (Hixson, Omar, Del Rio, & Few, 2011). Racial disparities in HIV disproportionately impact Black individuals, with African American women experiencing even higher risk. In general, women comprise 25% of all people living with HIV in the United States, and account for one in five new HIV diagnoses each year (AIDSinfo, 2017; CDC, 2018). Women are most likely to acquire the infection through sexual transmission during intercourse with a positive male partner, with heterosexual transmission as the cause behind 87% of HIV diagnoses among women (AIDSinfo, 2017, CDC, 2018). Having unprotected sex (without a condom) or having sex with intravenous drug users can also increase a woman's risk of infection (AIDSinfo, 2017). In addition, receptive sex is riskier than insertive sex, meaning that women are at higher risk for contracting HIV through penetration compared to men (CDC, 2018). Research has shown that women who have experienced sexual abuse are more likely to engage in sexual risk behaviors, including unprotected sex, sex with multiple partners, or sex in exchange for money or drugs (CDC, 2018).

        While diagnoses among African America women have declined 20% over the past few years, over 61% of women diagnosed with HIV are African American, indicating a significant racial disparity and disproportionate burden of disease among this population (CDC, 2018). In general, women tend to have sex with partners of their same race and ethnicity, meaning that African American women face a greater risk of HIV infection because they are having sex with African American men, one of the highest risk groups (CDC, 2018). These women may not be

aware of their partners' personal risk behaviors, such as intravenous drug use or sex with other men, and therefore may not use condoms (CDC, 2018).

Some researchers have attempted to explore the compounded burden of disease faced by Black women, brought about by their multiple identities. One study explored how HIV, gender, race, and sexual orientation interacted to result in stigma experienced by HIV-positive Black women (Logie, James, Tharao & Loutfy, 2011). Other studies sought to understand how social determinants of health impact transmission of HIV and STIs among Black women; one study in particular addressed the socioeconomic influences that contribute to disease in this population, and discussed the potential impact of promoting health equity in public health efforts as a solution (Dean & Fenton, 2012). While many strategies to reduce burden of disease have been attempted, including community capacity-building efforts, Black women are still 3.5 times more likely to acquire HIV than their white counterparts (CDC, 2017).

2.3.2 *Adolescents*

Adolescents experience a substantial burden from STIs each year. Young people account for more than half of all new STI diagnoses even though they only constitute a quarter of the sexually active population nationally (CDC Fact Sheet, 2013). Each year, adolescents account for almost 25% of all new HIV diagnoses in the United States, with young African Americans being especially affected (CDC, 2017). Less than half of all youth are aware of their HIV status, which is the highest rate of undiagnosed HIV among all age groups in the country (AIDSVu, 2017; CDC, 2017). Teenagers are particularly vulnerable because they are less likely to seek out treatment and care; this means that many HIV-positive youth that are not linked to care and experience dangerous, uncontrolled viral loads. Surveillance found that among teens diagnosed with HIV before 2012, only 55% were connected in care and 44% had suppressed viral loads (CDC, 2017). When this combination occurs, the level of virus in the body reproduces exponentially, resulting in diminished health and increase risk of transmitting the virus to another partner, even unintentionally (CDC, 2017).

There are several barriers faced by this age group that contribute to the burden of HIV among adolescents. First, inadequate sex education within schools is a huge barrier to prevention, especially in more conservative states, where information presented to students is not required to be medically accurate (Guttmacher Institute, 2018). National surveillance reports also found that there are several barriers related to risk behaviors among adolescents. Adolescents are less likely to get tested for HIV and other STIs, and about one-fifth of adolescents who are sexually active used drugs or alcohol before their most recent sexual intercourse (YRBS, 2015). In addition, almost half of adolescents report not using condoms during sex, increasing their risk of acquiring HIV and STIs (YRBS, 2015). These sexual health risk behaviors are significant barriers to HIV prevention because the presence of another STI greatly increases the likelihood that a person exposed to HIV will become infected (CDC, 2017).

Previous studies have explored both STI testing rates and condom use behaviors among teenagers. One study found that only 47% of African-American girls used condoms during their last sexual intercourse (Norwood et al. 2015). With one in four teens contracting a sexually transmitted infection each year, condom use is particularly important for protecting against the spread of venereal disease and preventing HIV (ASHA et al. 2017). Young adults often lack sufficient sexual health education, which can reduce self-efficacy and ability to use condoms. Teens are also more likely to fear condom negotiation with their sexual partners and have issues navigating complex relationship dynamics. One study demonstrated that girls with more controlling boyfriends are less likely to speak up and advocate for safe sex behaviors, particularly condom use (Minton et al. 2016). This young population therefore accounts for a disproportionate amount of current infections worldwide.

2.3.3   *Detained Juveniles*

Several studies have shown that youth involved in the juvenile justice system are a high-risk population; this is because they experience many unmet needs with regard to both their physical and mental health when compared to their non-justice-involved peers (AMA, 1990;

Forrest, Tambor, Riley, Ensminger, & Starfield, 2000; Golzari, Hunt, & Anoshiravani, 2006; Sedlak & McPherson, 2010). Compared to adolescents overall, justice-involved youth experience increased risk of acquiring STIs and HIV (Abram, Stokes, Welty, Aaby & Teplin, 2017). It is hypothesized that this increased risk may be due to higher reported sexual risk behaviors, including earlier sexual debut, more lifetime sexual partners, and higher rates of unprotected sex stemming from low or inconsistent condom use (Morris et al., 1995; Romero et al., 2007; Teplin, Mericle, McClelland & Abram, 2003).

Another contributing factor to increased sexual health risk is limited access to healthcare and resources, especially as adolescents transition between detention and parole in their communities (Belenko, Dembo, Rollie, Childs, & Salvatore, 2009). Once youth are no longer detained and have progressed to either probation or parole, their added freedom contributes to higher risks of contracting HIV and STIs (Belenko et al., 2004; Martin, O'Connell, Inciardi, Surratt, & Beard, 2003). Furthermore, many detained youth do not receive regular STI testing despite research showing that they engage in riskier sexual behaviors and have higher prevalence rates of STIs than their non-justice-involved peers (Abram et al., 2017; Belenko et al., 2008). These findings are present across several research studies; national surveillance data found that detained youth have among the highest rates of STIs, with one in five adolescents testing positive for common STIs, such as chlamydia and gonorrhea (CDC, 2015; CDC, 2017; Crosby et al., 2007; Kelly, Bair, Baillargeon, & German, 2000). An additional barrier is geography itself, with location impacting availability of testing and treatment services. Southern states suffer from some of the highest STI rates, with Georgia having the fifth highest rates of chlamydia and the seventh highest rates of gonorrhea across the country (CDC, 2016). Furthermore, detained youth cite multiple barriers to accessing sexual healthcare and resources, including poverty, unemployment, lack of health insurance, homelessness, and lack of transportation (Belenko et al., 2009; Braithwaite, Stephens, Treadwell, Braithwaite, & Conerly, 2005; Hammett, Harmon, &

Rhodes, 2002; Margolis et al., 2006). These are examples of social systems and conditions that impact health.

While the CDC and other leading experts in public health have pushed for detention centers and community supervision agencies to offer routine STI screenings to address this issue, many have failed to do so (Belenko et al., 2009; CDC, 2015; Gordon, Kinlock, McKenzie, Wilson, & Rich, 2013). Additionally, even when detention centers do offer screenings, youth are often released prior to receiving results and treatment; the transient nature of this setting contributes to the ongoing cycle of adolescents who are unaware of their status, and who continue to unwittingly engage in risky sex. Overall, this gap in sexual and reproductive healthcare for juvenile offenders contributes to hundreds of thousands of vulnerable at-risk youth experiencing negative sexual health outcomes across the country (Belenko, Langley, Crimmins, & Chaple, 2004).

2.4   Compounded STI Risk for Detained Black Girls

Detained African American adolescent girls experience a unique intersectionality of identities due to their race, age, gender, and incarceration status. This intersectionality also highlights why this particular group of individuals is at increased risk of acquiring HIV and STIs. While adolescent girls constitute approximately 30% of all juvenile arrests overall, Black girls are 20% more likely to be detained than white girls for the same offenses (Gender Injustice, 2017). Furthermore, juvenile justice-involved girls are more likely to experience social contexts prior to their arrests that contribute to their delinquent behaviors, and are often referred to as a "neglected population" (Snyder & Sickmund, 2006). More than 45% of girls in the system had experienced five or more adverse childhood experiences (ACEs), indicating high levels of conflict and abuse in their homes (Gender Injustice, 2017; Voisin, Salazar, Crosby & DiClemente, 2013).

Moreover, detained Black girls experience social circumstances related to higher HIV prevalence, including sexual assault and violence, substance abuse, trauma, and mental health conditions, thereby magnifying their risk of sexual health diseases (DePadilla et al., 2014; Latham

et al., 2012). These kinds of trauma and factors contribute to patterns of homelessness, fighting, and poor peer relationships, which can play a role in both delinquent behavior and sexual risk behaviors among this population (Latham et al., 2012; Wingood & DiClemente, 2000). Incarcerated girls often lack systems of social support and structure necessary to promote changed behaviors following release back into the community; they therefore are more likely to engage in risk behaviors associated with worse HIV and STI outcomes, including having sex in exchange for money as a means of survival and having unprotected sex (Latham et al., 2012). While these findings highlight a need for intervention efforts, prevention can begin at the foundational level of risk once these determinants have been identified and explored.

2.5   Social Determinants of Health

Vulnerable populations, like those outlined previously, experience increased sexual health risks due to several underlying conditions and factors referred to as the social determinants of health. Social determinants of health are defined as the conditions in which individuals live, learn, work, and play that affect their health risks and quality of life outcomes (CDC, 2018). These social determinants can be categorized into various social, economic, and physical factors impacting an individual's ability to thrive and function. Healthy People 2020 groups social determinants of health into five main areas: economic stability, education, social and community context, health and healthcare, and neighborhood and built environment (Healthy People 2020, 2018). In order to promote positive health outcomes in communities, social determinants must be accounted for and addressed by programs, practices, and policies (Healthy People 2020, 2018).

Conditions of economic stability generally include employment, food insecurity, housing instability, and poverty. Educational factors are comprised of early childhood education and development, high school graduation, enrollment in higher education, language, and literacy. Social and community contexts include civic participation, discrimination, incarceration, and social cohesion. The health and healthcare determinants consist of access to healthcare, access to primary care, and health literacy. Finally, the aspects of neighborhood and built environment that

contribute to health include access to healthy foods, crime and violence rates, environmental

conditions, and housing quality (Healthy People 2020, 2018). These social determinants are

mapped out in the TGP constructs and have been used in previous research to explain risks seen

among vulnerable populations (Wingood & DiClemente, 2000). For purposes of this study,

relevant social determinants of health include the economic, socioeconomic, physical, and social

exposures that make up the three constructs of the TGP model. These social determinants interact

at different levels of the social ecological model, and have intersecting and overlapping

influences on sexual and reproductive health.

2.6   The Theory of Gender & Power

In conjunction with the social determinants of health, the Theory of Gender & Power can

be used to explain the sexual health outcomes seen among African American females because

many of these determinants are inherently included in their sub-constructs. In general, behavioral

science theory and frameworks can help explain why individuals are at increased risk of acquiring

HIV and other STIs, especially when they emphasize the lived experiences of certain groups such

as women. The Theory of Gender & Power (TGP) is a social theory originally developed by

Robert Connell that characterizes gendered relationships between men and women according to

concepts of sexual inequality, gender, and power imbalance (Connell, 1987; Wingood &

DiClemente, 2000). This theory postulates that gender inequalities in interpersonal relationships

stem from the socially ingrained structures of division of labor, division of power, and cathexis

(Connell, 1987; Wingood & DiClemente). However, this theory can also be applied in public

health settings, including sexual and reproductive health contexts (Bauer, 2014; Bowleg, 2012;

Wingood et al., 2013; Wingood & DiClemente, 2000). For purposes of this research, certain

measures align with the sexual division of labor, referring to the inequality of economic

exposures faced by women; the division of power, referring to relationship dynamic inequities;

and cathexis, which refers to social norms and affective relationships (Connell, 1987; Wingood &

DiClemente, 2000). These social and institutional constructs ultimately claim that women are

more likely to experience negative health outcomes if power inequities between men and women increase, and if women accept social norms surrounding their prescribed gender roles (DiClemente, Crosby, & Kegler, 2009). Overall, its constructs are comprised of various exposures and risk factors that directly map onto the social determinants of health; thus, it is impossible to consider TGP constructs as separate from these determinants (WHO, n.d.).

Previous studies have employed TGP constructs in order to identify behavioral risk factors among African American women associated with sexual health communication practices with partners (DiClemente, Crosby, & Kegler, 2009). In particular, studies have looked at how TGP-related risk factors contribute to women's risk of acquiring HIV and can serve as predictors of low condom use (DePadilla, Windle, Wingood, Cooper, & DiClemente, 2011; Wingood & DiClemente, 2000). This theory is particularly applicable to African American women because they face discrimination in the form of negative social norms and perceptions about their roles in society and mainstream media; for example, these women are perceived as less likely to have long-term relationships, desire pregnancy, and assert themselves when negotiating safer sex with partners (DiClemente, Crosby, & Kegler, 2009). In addition, African American women tend to be more dependent on their male partners for financial stability, leading to more power-imbalanced relationships (DiClemente, Crosby, & Kegler, 2009).

However, it is important to note that the three TGP constructs are dependent upon several sub-constructs that more accurately depict their impact, as mentioned previously. The TGP constructs considered to be part of the division of labor included both economic and socioeconomic risks. For example, indicators of economic risk contributing to imbalance of sexual division of labor included: participants being at or below the poverty level, having less than a high school education, being unemployed, not having health insurance, and being homeless (Wingood & DiClemente, 2000). Socioeconomic risks that impacted participants' division of labor in their relationships included their race and their young age (Wingood & DiClemente, 2000). With regard to factors influencing an imbalance in the sexual division of power, measures

were categorized into physical exposures and behavioral risk factors. Physical exposures experienced by participants that were considered to contribute to inequitable division of power in their relationships included history of sexual and/or physical abuse, having a partner who refuses to use condoms, and having limited access to HIV prevention (Wingood & DiClemente, 2000). Behavioral risk factors adding to this inequity included history of alcohol and/or drug abuse, having poor assertive communication skills, having poor condom use skills, having low self-esteem and self-efficacy, and having limited perceived control over condom use within their relationships (Wingood & DiClemente, 2000). Finally, cathexis constructs related to social norms were also recognized and grouped into social exposures and personal risk factors that could put participants at risk of experiencing poorer STI and HIV outcomes. The social exposures of cathexis included having an older sexual partner, being affiliated with a religion, and having had negative family influences about HIV prevention prior to detainment (Wingood & DiClemente, 2000). Additionally, personal risk factors consisted of low knowledge about HIV prevention, negative attitudes about safe sex practices, history of depression, and low believed susceptibility to acquiring HIV (Wingood & DiClemente, 2000).

Essentially, this theory can be applied to health behaviors and outcomes such as risk of HIV infection since the theoretical constructs correlate with social determinants of health and various exposures experienced by women. This theory has important implications for women's health outcomes, and views health and risk behaviors with a social and gender lens. It also provides a space for discussion about relationship dynamics, which describe the nature of balance and power between two individuals; in this case, the sexual relationships of women can be influenced by relationship dynamic components present in the TGP constructs. Overall, by understanding how the constructs of TGP correlate to these underlying factors and social determinants of health for African American females, findings can better explain the STI risk factors among detained Black girls.

2.7   Summary & Objectives

It is undeniable that individuals who fall under each of the special populations categories outlined previously experience compounded risk regarding their sexual and reproductive health. While various circumstances and social determinants contribute to each unique group's increased risk of acquiring these diseases, individuals who identify with more than one of the groups (or even all of them) experience multiplied risk. This concept of intersectionality of risk can have significant implications for the outcomes and lived experiences of affected populations. Because each of these social identities play a unique role in shaping the sexual health risks experienced by detained Black adolescent girls, it is vital that researchers search for underlying factors that could be exacerbating these conditions. By exploring the social determinants of health and their various levels of influence within the context of STI risk, researchers can better understand how to effect change at the foundational levels of risk. Additionally, by examining the significance of interpersonal relationships and dynamics, the economic, physical, and social influences impacting sexual health outcomes can be identified and addressed through future evidence-based interventions.

Therefore, in order to explore these intersecting influences, the objective of the following study was to better understand how social determinants and gender-based constructs impact sexual health behaviors and risk factors among detained African American adolescent girls. The following research questions were posed by the researcher:

1. *Which of the Theory of Gender & Power constructs are significantly associated with STI risk factors of interest among detained African American girls?*

    a. Hypothesis: All constructs will be significantly associated with the STI risk factors of interest.

2. *To what extent do the Theory of Gender & Power constructs significantly predict STI risk factors among detained African American girls?*

a. Hypothesis: All constructs found to be significantly associated at the $p < 0.20$

level will be significant predictors of STI risk factors.

By examining the relationships between TGP constructs and STI risk factors, this analysis can help demonstrate the impact that economic inequities, power dynamic inequalities, and affective attachments have on youth's sexual health. Overall, TGP constructs are rooted in the social determinants of health and can be used to help explain why certain outcomes are seen among women. By examining the associations and relationships between the constructs and STI risk factors seen among this population, findings can highlight important areas of intervention in sexual and reproductive health for groups experiencing compounded HIV and STI risk.

3   Methods

3.1   Introduction

This cross-sectional secondary data analysis was conducted using data from part of the IMARA study, which was a larger longitudinal study exploring the impact of an HIV intervention among detained African American adolescent girls in Georgia. IMARA was originally developed as an adaptation of Horizons, an evidence-based HIV prevention intervention intended to reduce sexual risk behaviors among incarcerated African American teenage girls (Effective Interventions, 2017; Latham et al., 2010). Similarly, the IMARA adaptation was created to target detained African American adolescent females at risk for acquiring HIV and STIs through an evidence-based prevention intervention (DiClemente et al., 2014). Its two-arm randomized controlled trial design assessed the effectiveness of a culturally appropriate, gender-based HIV prevention intervention (DiClemente et al., 2014).

This study uses baseline data collected from 2011-2012 from participants in the Metro Regional Youth Detention Center (RYDC), a short-term detention facility for juvenile offenders located in Atlanta, in order to assess the associations between social determinants of health, relationship dynamics, and sexual health outcomes among this study population. All original study protocols were approved through the Emory University Institutional Review Board, and this secondary data analysis met requirements for exemption from IRB approval since all data was completely de-identified prior to the researcher's receipt of the dataset (considered non-human subjects research).

3.2   Participants

The Metro RYDC is part of the larger Department of Juvenile Justice System in the state of Georgia, and provides temporary supervision and detention of youth who have been charged with offenses and are awaiting trial, or whose placements are pending after having received formal judgment (DJJ, 2016). On average, there was a daily population of 618 juvenile offenders

in the secure Metro RYDC per day in 2011, with youth staying in the facility a total of 14 days on average (DJJ Statewide Statistics, 2011). The target population for the IMARA study was detained African American adolescent girls. Inclusion criteria for the study specified that participants had to be unmarried, African American, adolescents between 13-17 years of age, had willingly had vaginal sex with a male partner, and detained in the Metro RYDC. Ultimately, baseline data was collected for a total of 188 participants, whose names and other identifying information was removed from the dataset prior to being accessed by the researcher. Participants were excluded from baseline if they were found to be pregnant at the time of initial data collection, were wards of the state, or were to be sent to group homes following release. A total sample size of 188 participants were assessed for this secondary data analysis.

3.3   Procedures

3.3.1   Recruitment

Beginning in March of 2011, participants were recruited to the IMARA study using a convenience sampling strategy. Staff at the detention facility assisted researchers with recruitment by escorting eligible participants to confidential screening sessions led by an African American female recruiter; this demographic matching was done in order to help make the girls feel more at ease (DiClemente et al., 2014). The recruiter gave an overview of the study and described what to expect from the study, then asked the girls if they would be interested in participating. Those who agreed were then confidentially screened for study eligibility individually and consented if both eligible and interested. All participants were required to receive verbal informed consent from parents or guardians, as well as complete appropriate written assent forms, due to their age (DiClemente et al., 2014). Once consent was obtained from participants, baseline assessments were conducted and participants were randomized to the IMARA intervention trial conditions; a total of 188 participants were enrolled (DiClemente et al., 2014).

3.3.2   Data Collection

Data collection occurred at baseline, 3-month, and 6-month time points. Baseline data was collected during the participants' time in the detention facility, while the 3- and 6-month follow-up time points occurred at outside locations, such as participants' homes or another mutually agreed upon location (DiClemente et al., 2014). After receiving instruction from detention center staff on how to successfully collect biological samples, vaginal swab assays to test for chlamydia and gonorrhea were self-collected by participants and pregnancy tests were obtained from urine samples. Researchers ensured that an onsite nurse was available to provide antibiotic treatments and risk reduction counseling to all participants who tested positive for STIs at baseline assessment (DiClemente et al., 2014). Participants were also administered an observational condom skills assessment, which was used to determine their proficiency in condom use and placement (DiClemente et al., 2004; DiClemente et al., 2014).

However, this study solely analyzed baseline data collected from participants in 2011, which primarily consisted of an audio computer-assisted self-interview (ACASI) completed by participants (DiClemente et al., 2014). This computer-based survey assessed various behavioral and psychosocial variables. This form of data collection was chosen because it was proven to be successful in improving data accuracy, reducing participant discomfort when answering personal sex-related questions, and addressing low literacy levels through its audio component (Estes et al., 2010). Participants were informed that code numbers would be used to record and link their survey responses, and no detention facility staff members would be told about their answers. Overall, this study assessed the deidentified findings from the ACASI surveys, as well as the STI test results.

The ACASI questionnaire contained hundreds of questions that asked participants to reflect on sexual behaviors three months and one month prior to baseline assessment, as well as various risk factors. Participants were able to use a calendar tool in order to help refresh their memories about their past behavior and improve the validity of their self-reported answers

(DiClemente et al., 2014). The survey contained questions regarding demographic information, detention history, sexual history, attitudes and beliefs about sexual risk behaviors, and psychosocial constructs (DiClemente et al., 2014). Researchers developed these questions based on previous findings about associated HIV and STI risk and protective factors (DiClemente et al., 2014). In total, there were almost 700 baseline variables included in the dataset provided for secondary data analysis.

3.4   Measures

3.4.1   Demographics

A total of 188 participants were included in this sample for secondary data analysis. Information about four demographic variables was collected in order to describe the study sample. Continuous demographic variables included <u>participant age</u> and <u>length of current detainment</u>, which were pulled from participant records. Categorical demographic variables assessed in this study included <u>relationship status</u> and <u>condom use during most recent sexual intercourse</u>. Participants were asked a yes or no question about if they currently had a boyfriend or main partner, and a yes or no question about if they had used a condom during their most recent sexual experience.

3.4.2   Independent Variables: Theory of Gender & Power Constructs

Based on the literature and previous theory-driven research within this population of interest, this study identified several independent variable measures related to TGP constructs of sexual division of labor, sexual division of power, and cathexis (DePadilla et al., 2011; Wingood & DiClemente, 2000) (Figure 2). Due to the nature of secondary data analysis, only some of their related sub-constructs were captured in the original baseline survey conducted in 2011. Therefore, this study identified existing variables and proxy measures that could be used to estimate the sexual risk associated with each of the three TGP constructs; this was done by

creating composite TGP scale variables to assess risk, which was shown to be effective in similar

quantitative studies (DePadilla et al., 2011).

All three composite risk scales were created using the same strategy. First, all applicable

sub-constructs were identified from the dataset and then recoded into dichotomous categorical

variables if necessary. Based on the literature, all answers associated with increased sexual risk

were scored = 1, while answers that minimized sexual risk were scored = 0. Then, all

dichotomous sub-constructs were summed together to create the composite risk scale for each of
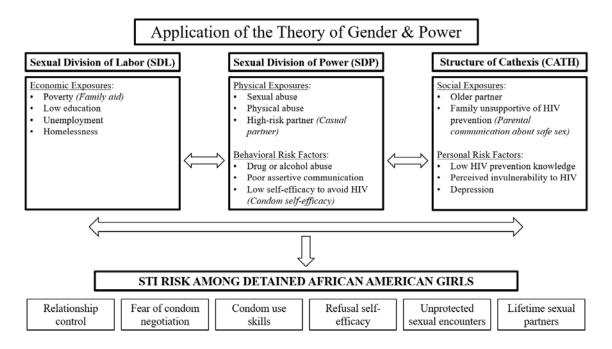
the three TGP constructs.

Figure 2. Application of the Theory of Gender & Power in this study.

Sexual Division of Labor

Overall, there were four sub-construct variables that were considered to comprise the

Sexual Division of Labor (SDL) Composite Risk scale. By combining the effects of these

interrelated sub-constructs, the researcher would be able to determine the participants' levels of

acquired sexual division of labor sexual risk and explore their associations with the girls' HIV

and STI sexual health risk factors.

The first sexual division of labor variable was <u>employment</u>, which was categorized as a labor force participation variable during the original study. Employment of participants was ascertained by asking the question, "Do you have a job for which you are paid?" with dichotomous response options of either "No" = 0 or "Yes" = 1. This variable was reverse recoded by the researcher so that response options corresponded with risk, which allowed for the creation of the composite variable scale. Theory and literature shows that not having a job is a socio-contextual determinant for poor sexual health outcomes, so participants' scores from this response were added into their total composite scores if they were unemployed.

The next variable was <u>education</u>, which was categorized as a demographic variable in the original codebook. Education level of participants was assessed by asking, "What is the last grade that you completed in school?". Participants chose from several response options, where "8th grade or less" = 1, "9th or 10th grade" = 2, "11th or 12th grade" = 3, "Graduated high school or GED" = 4, and "Refuse to answer" = 5. This variable was later recoded by the researcher to collapse education categories; since having less than a high school education is a risk factor for poor sexual health outcomes, all responses indicating less than a high school education were added into their total composite risk score.

Another sexual division of labor variable was <u>homelessness</u>, which was adapted from CDC homelessness questions. Homelessness was determined by asking participants, "In the past 12 months, have you ever been thrown out of your house or run away from home for more than one night?". Dichotomous responses were "No" = 0 and "Yes" = 1. Because homelessness is a risk factor for poor sexual health outcomes, all responses indicating homelessness were designated as risks when computing their SDL composite scores.

Finally, the last item of the sexual division of labor variables was <u>family aid</u>, which was chosen to serve as a proxy measurement of poverty. This variable was also categorized as a labor force participation variable in the original codebook. Family aid was assessed by asking participants, "In the past 12 months, did you or anyone you live with receive any money or

services from any of the following? (Check all items that apply OR check 'NO')". Participants were instructed to indicate which types of family aid they had received, including welfare and TANF, food stamps, WIC, and Section 8 housing subsidies. This variable was also recoded into dichotomous groupings, where "No" = 0 and any of the other responses = 1, no matter how many were checked off. This allowed for poverty to be accounted for as a risk factor in the participants' total composite scores.

As mentioned previously, these four items were combined to create a **SDL Composite Risk** scale, a summary variable accounting for participants' acquired division of labor sexual risk. This composite variable summed all dichotomous responses from its four individual survey items, with possible SDL Composite Risk scores ranging from 0 – 4; higher composite scores indicated higher acquired division of labor sexual risk. There were no strong proxy variables to assess health insurance status, so this economic sub-construct of sexual division of labor was not included in analyses. Additionally, since all participants were under the age of eighteen and all identified as African American, these socioeconomic sub-constructs were not included in the computed scales.

Sexual Division of Power

Overall, six sub-construct variables were considered to comprise the Sexual Division of Power (SDP) Composite Risk scale. By combining the effects of these interrelated sub-constructs, the researcher would be able to determine the participants' levels of acquired sexual division of power sexual risk and explore their associations with the girls' HIV and STI sexual health risk factors.

The first SDP variable was physical abuse, which was considered an abuse history variable in the original codebook. Physical abuse of participants was assessed by asking, "Have you ever been physically abused?", with dichotomous response options of either "No" = 0 or "Yes" = 1. Along the same lines, the second variable was sexual abuse, another abuse variable from the dataset. Participants were asked, "Has anyone ever forced you to have vaginal sex when

you didn't want to?" and could choose either "No" = 0 or "Yes" = 1 as responses. Girls who had

experienced either one or both of these types of abuse had this component added into their total

composite risk score. These abuse constructs were included as part of the composite score

because history of abuse has been linked to poor sexual health outcomes, and are considered to be

physical exposures contributing to division of power sexual risk.

The next variable was having a high-risk partner, which was approximated using the

casual partner variable. Participants were directly asked if they "currently have a casual sex

partner(s)" and response options were scored as "No" = 0 and "Yes" = 1. Having casual sex

partners is associated with higher risk of acquiring HIV and STIs, since the relationships may not

be monogamous and partners may be seeking sexual experiences with additional individuals

outside of the arrangement. Therefore, participants who reported currently having casual sex

relationships had a point added into their total SDP composite risk scores.

Another sub-construct variable was substance abuse, which included both drugs and

alcohol. This continuous scale consisted of ten items that assessed dependency on drugs and

alcohol using frequency reports; the scale had a Cronbach's alpha value of 0.86. Participants

were asked questions such as, "How many times have you neglected your responsibilities because

of alcohol or other drug use?" and "How many more times have you used more alcohol or other

drugs than you intended to?". Responses were originally scored as "0" = 0, "1" = 1, "2" = 2, "3"

= 3, "4-6" = 4, "7-10" = 5, and "11 or more" = 7. Originally, total scores ranged from 0 – 60,

with higher scores indicating higher levels of substance abuse. However, this study recoded the

responses using a median split, where less frequent use of substances (≤ 2 times) = 0 and more

frequent use of substances (< 2 times) = 1. This strategy was employed because substance abuse

has been shown to be correlated with worse HIV and STI outcomes, since individuals under the

influence are more likely to engage in risky sexual behaviors.

The next sub-construct measure was assertive communication skills, which assessed how

feasible it was for participants to demand partners to use condoms and demonstrate control over

their sexual experiences. This mini-scale included three partner communication questions assessing difficulty of asserting control over safe sex practices in communication with a partner; its Cronbach's alpha value was 0.80. Questions asked included, "How hard is it for you to ask if he could use a condom?", "How hard is it for you to demand that he use a condom?", and "How hard is it for you to refuse to have sex if he won't wear a condom?". Responses for all questions were "Very hard" = 1, "Hard" = 2, "Easy" = 3, and "Very easy" = 4. Total scores originally ranged from 3 – 12, and higher scores indicated better assertive communication skills. Answers were then recoded using a median split so that high skill level scores ($\geq$ 12) = 0 and low skill level scores (< 12) = 1. Recoding was conducted because lacking assertive communication skills is a risk factor for acquiring HIV and STIs; therefore, girls with poorer assertive communication skills would have higher SDP composite risk scores.

Finally, the last SDP variable was <u>condom self-efficacy</u>, which assessed participants' self-confidence in their ability to correctly use a condom. This continuous scale contained nine items and had a Cronbach's alpha value of 0.91. Questions all started with "How much of a problem would it be for you to…" and asked, "unroll a condom down correctly on the first try", "squeeze the air from the tip of a condom", and "take a condom off without spilling the semen", among others. Answer options consisted of "None" = 1, "Not much" = 2, "A little" = 3, "Some" = 4, and "A lot" = 5. The original possible totals ranged from 9 – 45, with higher scores representing higher levels of condom self-efficacy. This variable was ultimately recoded using a median split, resulting in high self-efficacy scores ($\geq$ 36) = 0 and low self-efficacy scores (< 36) = 1. In order to be counted as part of the composite SDP risk, participants must have had low self-efficacy regarding condoms, which has been linked to less condom use and therefore increased sexual risk.

In conclusion, these six items were combined to create a **<u>SDP Composite Risk</u>** scale, a summary variable accounting for participants' acquired division of power sexual risk. This composite variable summed all dichotomous responses from its six individual survey items, with

possible SDP Composite Risk scores ranging from 0 – 6; higher composite scores indicated

higher acquired division of power sexual risk. There were no strong unique proxy variables to

assess partners disapproving of safe sex practices or limited access to HIV prevention, so these

physical sub-constructs of sexual division of labor were not included in analyses. Because this

study sought to assess TGP construct association with several STI risk factors, most of the

individual behavioral risk factors were removed from the composite variables so as not to bias the

results; they were instead considered as STI risk factors and included as dependent variables.

Cathexis

      Overall, there were five sub-construct variables that were considered to comprise the

Cathexis (CATH) Composite Risk scale. By combining the effects of these interrelated sub-

constructs, the researcher would be able to determine the participants' levels of acquired cathexis

sexual risk and explore their associations with the girls' HIV and STI sexual health risk

behaviors.

      The first sub-construct was having an <u>older partner</u>, which was categorized as a partner

information variable during the original study. Relative age of partners was ascertained by asking

participants, "In general, are the people you have sex with:" with multiple response options of

either "Much younger than you (4 or more years)" = 0, "Younger than you" = 1, "About the same

age" = 2, "Older than you (2-3 years), and "Much older than you" = 4. This variable was

recorded by the researcher so that response options were grouped into having younger or same

age partners = 0 and having older partners = 1. These dichotomous options were chosen as such

since literature shows having an older partner is a social exposure risk for the cathexis composite

construct.

      Additionally, the sub-construct of <u>family influences unsupportive of sexual risk</u>

<u>prevention </u>was assessed using a parental communication proxy scale variable. This scale had a

Cronbach's alpha value of 0.90 and summed responses from five parental communication

questions that asked participants about frequency of parental communication about safe sex in the

last 90 days. These questions included, "How often have you and your parents talked about

sex?", "How often have you and your parents talked about how to protect yourself from STDs?",

and "How often have you and your parents talked about protecting yourself from the HIV virus?".

Response options for all questions were based on a five-point Likert scale where "Never" = 1,

"Rarely" = 2, "Sometimes" = 3, "Often" = 4, and "Always" = 5. The original scale summed

participant responses, which ranged from 5 – 25 points total, with higher scores indicating higher

levels of parental communication. Therefore, the scale was recoded using a median split so that

high scores (> 14) = 0 and low scores (≤ 14) = 1, since unsupportive or less frequent parental

communication about safe sex practices is a social exposure risk for the cathexis construct.

Another CATH sub-construct variable was knowledge of HIV prevention, which was a

scale variable assessing respondents' level of knowledge about safe sex and risk reduction. This

scale asked participants to determine if various statements about HIV and STI prevention were

true or false. Sample statements included, "Having an STD can increase the risk of getting HIV"

and "STDs can only be passed through open sores or lesions". Responses were then recoded by

the original investigators so that incorrect answers = 0 and correct answers = 1. Participant scores

could range from 0 – 11 points across a total of eleven questions, with higher scores indicating

higher levels of HIV and STI prevention knowledge; this knowledge scale had a Cronbach's

alpha value of 0.71. For this study, this scale was recoded using a median split to group

responses into high knowledge scores (> 7) = 0 and low knowledge scores (≤ 7) = 1, since low

levels of prevention knowledge are a personal risk factor corresponding to higher cathexis risk.

The next sub-construct used was depression, which was a summary scale variable

comprised of eight depression questions. Participants reflected on statements such as, "I felt that

I could not shake off the blues even with help from my family and friends", "I felt lonely", and "I

had crying spells", and determined how frequently they had those experiences. Each of the

statements included the same four response options for participants to choose from: "Less than

one day" = 1, "1-2 days" = 2, "3-4 days" = 3, and "5-7 days" = 4. Depression scale scores ranged

from 4 – 32, with higher scores indicating higher levels of depression; the scale had a Cronbach's

alpha value of 0.91. For purposes of this analysis, the depression scale variable was recoded

using a median split, where low depression scores (< 16) = 0 and high depression scores (≥ 16) =

1. This was done since history of depression corresponds with higher risk of HIV and STI

infection, thereby increasing cathexis risk.

The last variable identified as a sub-construct was perceived invulnerability to HIV,

which fell under the STI testing and treatment history category in the original codebook. This

perceived susceptibility to HIV was ascertained by asking, "How much do you worry that you

could get HIV?" with response options including "Not at all worried" = 1, "A little worried" = 2,

"Somewhat worried" = 3, "Worried" = 4, and "A lot worried" = 5. Originally, higher scores

indicated higher perceived susceptibility to HIV; therefore, this variable was recoded for this

study's analyses and made into a dichotomous variable where high levels of worry (ranging from

3-5) = 0 and low levels of worry (ranging from 1-2) = 1. This meant that higher scores would

correspond to higher perceived invulnerability to HIV for the composite variable, since the

literature shows this trend to be true.

These five items were combined to create a composite variable that represented **Cathexis**

(CATH) Composite Risk. This composite variable summed all dichotomous responses from its

five individual survey items, with possible CATH composite scores ranging from 0 – 5; higher

composite scores indicated higher cathexis sexual risk. There were no strong proxy variables to

assess desire to conceive, conservative norms, religious affiliation, mistrust of the medical

system, or negative beliefs about safe sex; therefore, these sub-constructs were not included in the

model for analyses.

3.4.3   Dependent Variables: STI Risk Factors

Additionally, the researcher examined several sexual risk factors that previous studies

and literature found to be directly associated with poor sexual health outcomes in similar

populations. In total, there were six dependent variables assessed for this study. The following

variables were chosen because of their nature as STI risk factors. The first dependent variable chosen for this analysis was <u>relationship control</u>. Relationship control was a continuous scale variable comprised of seventeen items. Participants were asked questions about their levels of perceived control within their relationships, including, "If I asked my partner to use a condom he would get violent", "Most of the time we do what my partner wants to do", and "My partner always wants to know where I am". Response options fell on a four-point scale, where "Strongly Disagree" = 1, "Disagree" = 2, "Agree" = 3, and "Strongly Agree" = 4; some of the questions were recoded to have all responses in the same direction. The original scale summed participant answers, which ranged from 17 – 68 points total, with higher scores indicating lower levels of participant control (and less say) in her relationship. This variable was chosen because women who have less control within their relationships are at increased risk of contracting HIV or an STI.

The next variable selected was <u>fear of condom negotiation</u>. This was also a continuous scale and contained seven items. The girls were asked questions about their levels of worry and concern with discussing condom use with their partners. Questions all began with the statement, "I have been worried that if I talked about using condoms with my boyfriend or sex partner, then…" and included sentiments such as, "he would threaten to leave me", "he would hit, push, or kick me", and "he would go out with other girls". Answers fell on a five-point Likert scale, where "Never" = 1, "Rarely" = 2, "Sometimes" = 3, "Most of the time" = 4, and "Always" = 5. Responses were summed to create a scale, with possible scores ranging from 7 – 35 points total. Higher scores indicated higher levels of fear of condom negotiation, and this variable was selected because women who fear condom negotiation with their sexual partners are less likely to use condoms, thereby increasing their risk of becoming infected.

Another dependent variable chosen was <u>condom use skills</u>, which was a continuous scale with six items. Rather than asking participants questions directly, the girls were instructed to demonstrate condom use skills in an observed skills-based assessment. The original study team

recorded how many mistakes the participants made with regard to the skills demonstration. Participants were assessed on certain skills such as opening the condom safely, squeezing the air out of the tip, and pinching the tip while unrolling the condom. Condom use scores were assigned so that incorrect steps or mistakes = 0 and correct condom use steps = 1, with possible scores ranging from 0 – 6. Higher scores indicated higher levels of condom use competency and skills. This variable was chosen because not being able to correctly use a condom increases an individual's risk of unintentional infection.

The next STI risk factor was refusal self-efficacy. This continuous scale contained seven survey items that ascertained participants' self-confidence in their own abilities to refuse sexually risky encounters. For example, the questions began with, "How sure are you that you would be able to say NO to someone…" and asked, "who you want to date again", "who is pressuring you to have sex", and "who refuses to use a condom". Answer options were on a four-point scale, where "I definitely can't say no" = 1, "I can't say no" = 2, "I can say no" = 3, and "I can definitely say no" = 4; higher scores indicated higher levels of refusal self-efficacy, meaning that girls had higher levels of self-confidence in their abilities to turn down risky sex. Possible scores ranged from 7 – 28, and this variable was chosen because higher levels of refusal-efficacy have been shown to be associated with decreased HIV and STI risk in women.

The total number of unprotected sexual encounters experiences in the previous three months was also included in analyses as an independent variable. Participants were asked how many times they had sex and how many of those times were using a condom that did not experience any slipping or issues. The original researchers calculated the difference to determine the total number of unprotected vaginal sex acts the girls had participated in. This variable was chosen because having more unprotected sexual encounters increases the likelihood of contracting HIV or an STI.

Finally, the last dependent variable selected was the total number of lifetime sexual partners. Participants were asked, "In your entire life, how many guys have you had vaginal sex

with?" and their numeric responses were recorded. This variable was chosen because having multiple partners contributes to increased risk of acquiring HIV and STIs.

3.5   Data Analysis

The secondary data analysis for this study was cross-sectional by design, and used the baseline data collected from 188 participants prior to their randomization into the IMARA trials. All data was completely de-identified and cleaned before receipt of the dataset for analysis. SPSS Statistics version 22.0 statistical analysis software was used for all analyses, and was used to perform all correlation tests and regressions. Prior to analysis, a codebook was developed by the original IMARA investigators which was used in this study to understand the variables and scale measures. The codebook contained response legends and scale keys for the ACASI survey items, and applicable variables were selected by the researcher. See Appendix A for the variables used from the codebook for analyses.

To analyze the sample, descriptive statistics were first performed in order to best describe the study population. Descriptives were also conducted on each of the TGP constructs to better describe their associated sub-constructs. Bivariate associations were assessed to address the first research question of the study. The correlation tests were performed across all six independent variables, with three analyses per STI risk factor to determine individual associations with the three TGP constructs. Significance level was set at $p < 0.05$ to determine significant associations. Finally, all variables were included in six multivariate logistic regression models to address the second research question of the study. While all variables were entered based on theoretical grounds, those found to have significant bivariate associations at the $p < 0.20$ level were hypothesized to also be statistically significant predictors in these models. Results were stratified by independent variable, and their findings were summarized.

4   Results

4.1   Descriptive Statistics of Sample

All participants were African American females, with ages ranging from 13-17 years old; the average participant age was 15.3 years old (sd = 1.06 years). Participants had been detained for 3.75 days on average at time of baseline data collection (sd = 4.92 days), with detainment lengths ranging from 1 – 39 days total. Among all participants, 166 (88.3%) reported currently having a main partner or boyfriend. When asked about condom use, 104 participants (55.3%) said they had used a condom during their most recent sexual intercourse while 84 participants (44.7%) reported not having used a condom.

4.2   Descriptive Statistics of Study Variables

4.2.1   Independent Variables: Theory of Gender & Power Constructs

Sexual Division of Labor

Descriptive statistics for the four SDL sub-constructs were gathered to better describe the composite risk scores; since all four sub-constructs were categorical, only frequencies were gathered. Regarding employment, the vast majority of participants did not have jobs, with 175 girls (93.1%) reporting unemployment and only 13 girls (6.9%) reporting employment. This employment status is reflective of the young average participant age, since most adolescents have limited job prospects and working hour restrictions until they reach 16 years old. Most girls had low education levels, with the majority of participants (63.3%) reporting having completed ninth or tenth grade most recently, followed by approximately one-third of participants having an eighth-grade education or less (29.8%); however, this low education level was understandable given the age group participating in the study. All 188 (100%) participants had less than a high school education, since none had completed 12th grade or the GED. The majority of participants had also experienced homelessness at some point within the previous year. Overall, 109 girls (58.0%) reported homelessness and 79 girls (42.0%) reported no homelessness. With respect to

family aid, 134 girls (71.3%) reported that their families had not received any form of welfare support while 54 girls (28.7%) reported that their families had received financial support from at least one source.

Overall, the average **SDL Composite Risk** score among participants was 2.80 (sd = 0.70), with a median score of 3.00 on a scale from 0 – 4. Regarding the distribution of responses, 0 (0%) girls received the lowest possible score of 0.00, 2 girls (1.1%) received scores of 1.00, 63 girls (33.5%) received scores of 2.00, 94 girls (50.0%) received scores of 3.00, and 29 girls (15.4%) received the highest possible score of 4.00.

Sexual Division of Power

Descriptive statistics for the six SDP sub-constructs were also performed; both descriptives and frequencies were calculated to best describe the data. Regarding physical abuse, 108 participants (57.4%) reported never having been physically abused while 80 participants (42.6%) had been physically abused. When asked about sexual abuse, 143 girls (76.1%) had never been forced to have vaginal sex while 45 girls (23.9%) had been forced. For the question pertaining to having a high-risk partner, 121 participants (64.4%) said they did not currently have a casual sex partner while 67 participants (35.6%) did currently have high-risk partners. For the original substance abuse scale, the average result across all participants was a mean score of 5.35 (sd = 8.32) and a median score of 2.00. Once this was recoded into a dichotomous variable, 98 girls (52.1%) were categorized as having low levels of substance use while 90 girls (47.9%) were considered to have high levels of substance abuse. The average assertive communication skills score was originally 10.65 (sd = 1.91) with a median score of 12.00; once dichotomous, 102 participants (54.3%) were considered to have strong assertive communication skills while 86 participants (45.7%) had poor assertive communication skills. With respect to condom self-efficacy, the original scale results yielded an average score of 34.60 (sd = 9.00) with a median score of 36.00. The dichotomous recoded variable indicated 100 girls (53.2%) had high levels of condom self-efficacy while 88 girls (46.8%) had low levels of condom self-efficacy.

Overall, the average **<u>SDP Composite Risk</u>** score among participants was 2.43 (sd = 1.41), with a median score of 2.00 on a scale from 0 – 6. Regarding the distribution of responses, 10 girls (5.3%) received the lowest possible score of 0.00, 47 girls (25.0%) received scores of 1.00, 44 girls (23.4%) received scores of 2.00, 47 girls (25.0%) received scores of 3.00, 26 girls (13.8%) received scores of 4.00, 8 girls (4.3%) received scores of 5.00, and 6 girls (3.2%) received the highest possible score of 6.00.

Cathexis

Descriptive statistics for the five CATH sub-constructs were conducted to best describe the participants; both descriptives and frequencies were calculated to accurately depict the sample. Among all participants, 78 girls (41.5%) reported not typically having an <u>older partner</u> while 110 girls (58.5%) said they typically had older partners. With respect to <u>family influences unsupportive of sexual risk prevention</u>, the original parental communication scale yielded an average score of 13.86 (sd = 6.25) and a median score of 14.00. Once this was split into the two groups, 92 participants (48.9%) reported high levels of communication with their parents regarding safe sex, while 96 participants (51.1%) reported low levels of communication. The <u>knowledge of HIV prevention</u> scale initially resulted in a mean score of 6.85 (sd = 2.57) and a median score of 7.00. After being recoded into a dichotomous variable, 89 girls (47.3%) demonstrated high levels of HIV prevention knowledge while 99 girls (52.7%) demonstrated low levels of HIV prevention knowledge. The average <u>depression</u> scale score was originally 17.86 (sd = 7.68) with a median score of 16.00. Once dichotomous, 86 participants (45.7%) reported lower levels of depression while 102 participants (54.3%) reported high levels of depression. Finally, when asked about their <u>perceived invulnerability to HIV</u>, 89 girls (47.3%) said they worried about getting HIV while 99 girls (52.7%) did not worry about getting HIV.

Overall, the average **<u>CATH Composite Risk</u>** score among participants was 2.70 (sd = 1.04), with a median score of 3.00 on a scale from 0 – 6. Regarding the distribution of responses, 3 girls (1.6%) received the lowest possible score of 0.00, 18 girls (9.6%) received scores of 1.00,

60 girls (31.9%) received scores of 2.00, 67 girls (35.9%) received scores of 3.00, 33 girls

(17.6%) received scores of 4.00, and 7 girls (3.7%) received the highest possible score of 5.00.

A summary table of all descriptive findings for the three TGP constructs can be found in

Appendix B (Figure 3).

4.2.2   Dependent Variables: STI Risk Factors

The STI risk factors of interest for this study pertained to six different dependent

variables, all of which were continuous. For the relationship control scale, the average result

across all participants was a mean score of 35.12 (sd = 5.38) on a scale from 17 – 68, with a

median score of 35.00. Higher scores were inversely related to levels of relationship control, with

higher scores representing lower perceived levels of control for participants. The average fear of

condom negotiation score was 8.46 (sd = 3.67) on a scale from 7 – 35, with a median score of

7.00. Higher scores were directly related to higher levels of fear of condom negotiation within

participants' relationships. Participants reported an average condom use skills score of 3.76 (sd =

1.05) on a scale from 0 – 6, with a median score of 4.00. Higher scores corresponded directly to

higher levels of condom use competency. Regarding the refusal self-efficacy scale, the girls had

an average score of 23.25 (sd = 4.43) on a scale from 7 – 28, with a median score of 24.00.

Higher scores also corresponded directly to higher levels of confidence in refusing risky sexual

encounters. With respect to total number of unprotected sexual encounters in the past three

months, responses ranged from 0 – 200 instances of unprotected vaginal sex acts, with an average

of 7.81 unsafe encounters (sd = 21.96) and a median number of 2.00 unsafe encounters. Finally,

the girls reported a total number of lifetime sexual partners ranging from 1 - 200, with

participants having had an average of 6.41 sexual partners in her lifetime (sd = 15.73 partners)

and a median of 3.00 sexual partners.

A summary table of study variable descriptives can be found in Appendix C (Figure 4).

4.3   Bivariate Associations

Bivariate associations were conducted in order to answer the first research question of this study: *Which of the Theory of Gender & Power constructs are significantly associated with STI risk factors of interest among detained African American girls?* A total of eighteen correlational tests were performed in order to address this question, and are outlined by independent variable as follows:

Relationship Control: The Spearman's Rho correlation test was performed to examine the association between **<u>SDL Composite Risk</u>** scores and relationship control among detained Black girls. Results suggest that there is a statistically significant positive association at the 0.05 level ($r = 0.156$, $p = 0.032$), suggesting that with increased levels of acquired SDL risk, levels of relationship control among girls decreases (since relationship control scores were inversely related to levels of relationship control). The same statistical test was conducted to examine the association between **<u>SDP Composite Risk</u>** and relationship control as well. Results suggest that there is a statistically significant positive association at the 0.01 level ($r = 0.288$, $p < 0.001$), also suggesting that with increased levels of acquired SDP risk, levels of relationship control among girls decreases. Finally, the association between **<u>CATH Composite Risk</u>** and relationship control was tested; results indicated that there is also a statistically significant positive association at the 0.05 level ($r = 0.168$, $p = 0.021$). Overall, all three TGP constructs were significantly associated with relationship control.

Fear of Condom Negotiation: A Spearman's Rho correlation test was performed to examine the association between **<u>SDL Composite Risk</u>** scores and fear of condom negotiation among detained Black girls. Results suggest that there is not a statistically significant association between acquired SDL risk and fear of condom negotiation ($p = 0.430$). The same statistical test was used to examine the association between **<u>SDP Composite Risk</u>** and fear of condom negotiation. Results suggest that there is a statistically significant positive association at the 0.01 level ($r = 0.343$, $p < 0.001$), suggesting that with increased levels of acquired SDP risk, levels of

fear of condom negotiation increase. Finally, the association between **CATH Composite Risk**

and relationship control was tested. Results indicated that there is not a statistically significant

association between acquired CATH risk and fear of condom negotiation ($p = 0.43$). Overall,

only the SDP construct was significantly associated with fear of condom negotiation.

Condom Use Skills: The Spearman's Rho correlation test was executed to examine the

association between **SDL Composite Risk** scores and condom use skills among detained Black

girls. Results suggest that there is not a statistically significant association between acquired SDL

risk and condom use skills ($p = 0.085$). The same statistical test was performed again to examine

the association between **SDP Composite Risk** and condom use skills. Results suggest that there

is also not a statistically significant association between acquired SDP risk and condom use skills

($p = 0.234$). Finally, the association between **CATH Composite Risk** and condom use skills was

tested. Results indicated that there is not a statistically significant association between acquired

CATH risk and condom use skills ($p = 0.891$). Overall, none of the three TGP constructs were

significantly associated with condom use skills at the 0.05 level.

Refusal Self-Efficacy: A Spearman's Rho correlation test was conducted to examine the

association between **SDL Composite Risk** scores and refusal self-efficacy among detained Black

girls. Results suggest that there is not a statistically significant association between acquired SDL

risk and refusal self-efficacy ($p = 0.131$). The same statistical test was used to determine the

association between **SDP Composite Risk** and refusal self-efficacy. Results suggest that there is

a statistically significant negative association at the 0.01 level ($r = -0.328$, $p < 0.001$), suggesting

that with increased levels of acquired SDP risk, levels of refusal self-efficacy decrease (since they

were directly related to one another). Finally, the association between **CATH Composite Risk**

and refusal self-efficacy was tested. Results indicated that there is not a statistically significant

association between acquired CATH risk and refusal self-efficacy either ($p = 0.377$). Overall,

only the SDP construct was significantly associated with refusal self-efficacy.

Unprotected Sexual Encounters: The Spearman's Rho correlation test was performed to explore the association between **<u>SDL Composite Risk</u>** scores and total unprotected vaginal sex encounters over the past three months among detained Black girls. Results suggest that there is not a statistically significant association between acquired SDL risk and number of unprotected sex acts (p = 0.243). The same statistical test was conducted to examine the association between **<u>SDP Composite Risk</u>** and number of unprotected sex acts. Results suggest that there is a statistically significant positive association at the 0.01 level (r = 0.295, p < 0.001), suggesting that with increased levels of acquired SDP risk, total number of unprotected sex acts increase as well. Finally, the association between **<u>CATH Composite Risk</u>** and number of unprotected sex acts was tested; however, results indicated that there is not a statistically significant association between acquired CATH risk and number of unprotected sex acts (p = 0.873). Overall, only the SDP construct was significantly associated with number of unprotected sex acts.

Lifetime Sexual Partners: A Spearman's Rho correlation test was conducted to determine the association between **<u>SDL Composite Risk</u>** scores and total lifetime sexual partners among detained Black girls. Results suggest that there is not a statistically significant association between acquired SDL risk and lifetime sexual partners (p = 0.442). The same statistical test was used to examine the association between **<u>SDP Composite Risk</u>** and lifetime sexual partners. Results suggest that there is a statistically significant positive association at the 0.01 level (r = 0.327, p < 0.001), suggesting that with increased levels of acquired SDP risk, the total number of lifetime sexual partners increases. Finally, the association between **<u>CATH Composite Risk</u>** and lifetime sexual partners was tested. Results showed that there is not a statistically significant association between acquired CATH risk and lifetime sexual partners (p = 0.771). Overall, only the SDP construct was significantly associated with lifetime sexual partners.

A summary table of bivariate association findings can be found in Appendix D (Figure 5).

4.4   Multivariate Logistic Regression Analyses

Regression analyses were conducted on all six of the STI risk factors since at least one TGP construct was found to be significantly associated with each of them. The independent TGP predictor variables were kept as continuous variables, while each of the six dependent STI risk variables were converted into dichotomous variables using a median split method. While all three constructs were included in each model based on theoretical grounds, those that were found to be associated with STI risk factors at the 0.20 level were predicted to be significant predictors of STI risk for these models. Multivariate logistic regressions were conducted to address the second research question of this study: *To what extent do the Theory of Gender & Power constructs significantly predict the STI risk factors among detained African American girls?* Regression findings are outlined as follows:

Relationship Control: All three TGP constructs were included in a multivariate logistic regression model based on theoretical grounds using the Enter method. Bivariate analyses initially suggested that SDL Composite Risk (p = 0.032), SDP Composite Risk (p = 0.001), and CATH Composite Risk (p = 0.021) were independently, significantly associated with relationship control; it was therefore hypothesized that all three would be significant predictors of low relationship control levels. Multivariate logistic regression results suggest that for each unit increase in acquired SDP risk, the odds of having low levels of relationship control increased by 1.319 (AOR = 1.319; 95%CI = [1.054, 1.651]; p = 0.016). However, acquired SDL risk did not significantly predict low levels of relationship control (p = 0.248) and acquired CATH risk also did not predict low levels of relationship control (p = 0.186); therefore, the hypothesis that all three would predict relationship control was disproven. Overall, the total multivariate logistic regression model accounted for 8.5% of the variance in relationship control levels (Nagelkerke R^2 = 0.085).

Fear of Condom Negotiation: All three TGP constructs were included in a multivariate logistic regression model based on theoretical grounds using the Enter method. Bivariate

analyses initially suggested only SDP Composite Risk (p < 0.001) was independently, significantly associated with fear of condom negotiation; it was therefore hypothesized that only SDP risk would be a significant predictor of high fear of condom negotiation levels. Multivariate logistic regression results suggest that for each unit increase in acquired SDP risk, the odds of having high levels of fear of condom negotiation increased by 1.826 (AOR = 1.826; 95%CI = [1.409, 2.367]; p < 0.001). Acquired SDL risk did not significantly predict high levels of fear of condom negotiation (p = 0.659) and acquired CATH risk also did not predict high levels of fear of condom negotiation (p = 0.773); therefore, the hypothesis that only SDP risk would predict high condom negotiation fear levels was proven correct. Overall, the total multivariate logistic regression model accounted for 18.0% of the variance in condom negotiation fear levels (Nagelkerke R^2 = 0.180).

Condom Use Skills: All three TGP constructs were included in a multivariate logistic regression model based on theoretical grounds using the Enter method. Bivariate analyses initially suggested that only SDL Composite Risk (p < 0.20) would be significantly associated with condom use skills in a regression model; it was therefore hypothesized that only SDL risk would be a significant predictor of low levels of condom use skills. Multivariate logistic regression results suggest that none of the three composite risk constructs are significant predictors of low levels of condom use skills. Acquired SDL risk did not significantly predict low levels of condom use skills (p = 0.130), and neither did acquired SDP risk (p = 0.390) or acquired CATH risk (p = 0.877); therefore, the hypothesis that only SDL risk would predict low levels of condom use skills was disproven. Overall, the total multivariate logistic regression model accounted for 2.5% of the variance in condom use skills scores (Nagelkerke R^2 = 0.025).

Refusal Self-Efficacy: All three TGP constructs were included in a multivariate logistic regression model based on theoretical grounds using the Enter method. Bivariate analyses initially suggested only SDP Composite Risk (p < 0.001) was independently, significantly associated with refusal self-efficacy; it was therefore hypothesized that only SDP risk would be a

significant predictor of low levels of refusal self-efficacy. Multivariate logistic regression results suggest that for each unit increase in acquired SDP risk, the odds of having low levels of refusal self-efficacy increased by 1.754 (AOR = 1.754; 95%CI = [1.359, 2.264]; p < 0.001). Acquired SDL risk did not significantly predict low levels of refusal self-efficacy (p = 0.265) and acquired CATH risk also did not predict low levels of refusal self-efficacy (p = 0.890); therefore, the hypothesis that only SDP risk would predict low levels of refusal self-efficacy was proven correct. Overall, the total multivariate logistic regression model accounted for 17.3% of the variance in condom negotiation fear levels (Nagelkerke R^2 = 0.173).

Unprotected Sexual Encounters: All three TGP constructs were included in a multivariate logistic regression model based on theoretical grounds using the Enter method. Bivariate analyses initially suggested only SDP Composite Risk (p < 0.001) was independently, significantly associated with total unprotected vaginal sex encounters over the past three months; it was therefore hypothesized that only SDP risk would be a significant predictor of high numbers of unprotected sexual encounters. Multivariate logistic regression results suggest that for each unit increase in acquired SDP risk, the odds of having more unprotected sexual encounters increased by 1.445 (AOR = 1.445; 95%CI = [1.132, 1.845]; p = 0.003). Acquired SDL risk did not significantly predict high numbers of unprotected sexual encounters (p = 0.971) and acquired CATH risk also did not predict high numbers of unprotected sexual encounters (p = 0.334); therefore, the hypothesis that only SDP risk would predict high numbers of unprotected sexual encounters was proven correct. Overall, the total multivariate logistic regression model accounted for 7.7% of the variance in numbers of unprotected sexual encounters (Nagelkerke R^2 = 0.077).

Lifetime Sexual Partners: All three TGP constructs were included in a multivariate logistic regression model based on theoretical grounds using the Enter method. Bivariate analyses initially suggested only SDP Composite Risk (p < 0.001) was independently, significantly associated with total lifetime sexual partners; it was therefore hypothesized that only

SDP risk would be a significant predictor of high numbers of lifetime sexual partners.

Multivariate logistic regression results suggest that for each unit increase in acquired SDP risk, the odds of having more lifetime sexual partners increased by 1.708 (AOR = 1.708; 95%CI = [1.335, 2.185]; $p < 0.001$). Acquired SDL risk did not significantly predict high numbers of lifetime sexual partners ($p = 0.480$) and acquired CATH risk also did not predict high numbers of lifetime sexual partners ($p = 0.265$); therefore, the hypothesis that only SDP risk would predict high numbers of lifetime sexual partners was proven correct. Overall, the total multivariate logistic regression model accounted for 15.4% of the variance in total lifetime sexual partners (Nagelkerke $R^2 = 0.154$).

A summary table of multivariate logistic regression findings can be found in Appendix E (Figure 6).

5   **Discussion**

5.1   Summary of Findings

The bivariate analyses sought to address the first research question: *Which of the Theory of Gender & Power constructs are significantly associated with STI risk factors of interest among detained African American girls?* Based on the findings from the correlational tests, the relationship control risk factor was found to be significantly associated with all three TGP constructs. Acquired SDP risk was found to be the only construct significantly associated with fear of condom negotiation, refusal self-efficacy, number of unprotected sex acts, and lifetime sexual partners. An unexpected finding stemmed from the SDL construct not being significantly associated with most of the risk factors. This could perhaps be due to the composite variable not containing either of the socioeconomic exposures, which may have given the composite variable more power in the analyses. This decision was justified, however, because there was no way to stratify the data based on race and age, since all participants were African American and under the age of 18 years old. Additionally, cathexis was not found to be statistically significantly associated with any of the six risk factors of interest. This may be because its sub-constructs focus more on cultural and gender norms, which could not be accurately captured by the existing dataset. On the contrary, an unsurprising finding from the bivariate association tests was that the SDP construct was associated with most of the STI risk factors. This could be expected because sexual division of power consists of several behavioral risk factors, many of which were pulled from the composite score calculations. It could be argued that the SDP construct was associated with the behavioral risk factors of interest because the construct itself contains behavioral exposures. However, this clearly does not explain all of its relationships with the STI risk factors of interest, since this significant association was also present among the unprotected sexual acts and lifetime sexual partners variables as well.

From the subsequent multivariate logistic regressions, these relationships were further defined and the second research question was addressed: *To what extent do the Theory of Gender & Power constructs significantly predict STI risk factors among detained African American girls?* The multivariate logistic regression analysis using relationship control and the three significantly associated TGP constructs indicated that SDP Composite Risk is a strong predictor for relationship control. Overall, the SDP risk was confirmed as a significant predictor of four out of six STI risk factors, including control, fear of condom negotiation, refusal self-efficacy, and number of unprotected sexual encounters. Multivariate logistic regression findings demonstrated that for each unit increase in SDP risk score, the following occurred: relationship control levels decreased, fear of condom negotiation increased, refusal self-efficacy decreased, instances of unprotected sexual encounters increased, and total number of lifetime partners increased. Because sexual division of power was repeatedly the strongest predictor for most of the STI risk factors, this finding highlights a clear need for interventions addressing the sub-constructs of this realm of TGP.

It was surprising that none of the three composite variables were shown to serve as significant predictors for condom use skills; this contrasts with available literature and findings from other studies. For the most part, sexual division of labor and cathexis were not considered to be useful predictors of any of the six STI risk factors of interest. While they may not be strong predictors individually, it is undeniable that the three TGP constructs interact and overlap; thus, their roles may not be as significant compared to the impact brought about by the sexual division of power variable. This can be tested in subsequent studies, or even using modeling equations to account for combined effects from the constructs. Overall, these results indicate that the sexual division of power TGP construct is the strongest predictor of STI risk factors among detained African American girls. This relationship can be further explored in future studies, and used as a means of intervention for STI and HIV prevention efforts focused on this population.

In summary, bivariate association analyses indicated statistically significant relationships between relationship control and all three TGP constructs of SDL (p = 0.032), SDP (p < 0.001), and CATH (p = 0.021). Only the SDP composite variable was significantly associated with fear of condom negotiation (p < 0.001), refusal self-efficacy (p < 0.001), unprotected sexual encounters (p < 0.001), and lifetime sexual partners (p < 0.001). Condom use skills were not significantly associated with any TGP constructs. Multivariate logistic regression models showed that SDP composite risk is a significant predictor of low levels of relationship control (AOR = 1.319; 95%CI = [1.054, 1.651]; p = 0.016), high fear of condom negotiation (AOR = 1.826; 95%CI = [1.409, 2.367]; p < 0.001), low refusal self-efficacy (AOR = 1.754; 95%CI = [1.359, 2.264]; p < 0.001), more unprotected sexual encounters (AOR = 1.445; 95%CI = [1.132, 1.845]; p = 0.003), and more lifetime sexual partners (AOR = 1.708; 95%CI = [1.335, 2.185]; p < 0.001).

To make these findings more easily translatable for public health professionals, it is important to recall that SDP risk is comprised of physical abuse, sexual abuse, high-risk partnerships, substance abuse, poor assertive communication, and low self-efficacy to avoid HIV. Participants who experienced more of these exposures had higher SDP composite risk overall. Therefore, based on the findings from this study, participants who had higher SDP risk were 1.3 times more likely to have low levels of relationship control, 1.8 times more likely to have high levels of condom negotiation fear, 1.8 times more likely to have low levels of refusal self-efficacy, 1.4 times more likely to have more unprotected sexual encounters, and 1.7 times more likely to have more lifetime sexual partners. These findings clearly demonstrate that SDP risk is a significant predictor of STI risk among detained Black girls.

5.2   Strengths and Limitations

Cross-sectional secondary data analyses possess several strengths and limitations that impact the validity and reliability of their results. In general, secondary data analyses have several inherent weaknesses, including inappropriateness of data and lack of control over data quality (Lopez, 2013). For this study, the researcher was limited to analyzing questions that had

already been asked of participants. There was no way to change the wording of the questions or ask new questions to help support analysis. Although the researcher attempted to combat this issue by mapping variables onto TGP constructs as closely as possible and using proxy variables for sub-constructs when absolutely necessary, this process is not ideal. Operationalizing theory-based constructs can be difficult even prior to original data collection, so the inflexibility of a secondary analysis and lack of researcher control over data quality can be difficult to address. Additionally, this study examined baseline data collected between 2011-2012, so findings may not be as representative of current trends and experiences lived by detained Black girls in present day. Using solely baseline data simplified analyses, but the cross-sectional nature of using data from one specific time point does not allow for the determination of causal relationships among findings. These results lack temporality, and no cause-effect relationships can be concluded from these results; future analyses comparing these findings across the three-month and six-month time points could help assuage this problem in subsequent research. Furthermore, there is a possibility of recall bias in this study, since the ACASI questions asked certain sexual and relationship experiences over the past several months; this information may have been difficult for adolescent participants to accurately recall.

However, there are several advantages to secondary data analyses that must be acknowledged. Generally, these types of studies are time-saving, accessible, cost effective, feasible, and useful for generating new insights (Perez-Sindin Lopez, 2013). For the IMARA study, use of the ACASI survey instrument was definitively a strength in the original study design because this type of computer-assisted survey tool allowed for additional audio components for participants with lower literacy levels; this likely reduced participant burden and encouraged participants to complete the survey thoroughly. Furthermore, the study had a relatively large sample size (N = 188). Having a large sample is useful for examining associations and correlations between independent and dependent variables. The researcher also appreciated the cost and time effectiveness of conducting a secondary data analysis. Since data was already

collected and cleaned prior to researcher receipt of the dataset, a lot of time and energy was saved and could be put to better use conducting the analysis itself. This accessibility of data was a key strength in this study. By far the most significant strength of this study was its application of theory to guide analyses; theory-driven research is grounded in literature and upholds more rigorous standards for research. Overall, while there were several components of this study that could have been improved, the findings reflect an accurate depiction of sexual health risks and results among this population of detained African American girls at baseline.

5.3   Implications for Future Research

Overall, the results from this study align with the literature regarding the significance of behavioral risks with respect to STI risk. This study presents an innovative approach of retroactively applying theory to examine STI risk factors, demonstrating that most results were congruent with findings from similar studies (DePadilla et al., 2014). This strategy could serve as a useful tool for quantitative researchers interested in applying behavioral science theory in secondary data analyses.

This study presents several new directions for areas of intervention regarding sexual health of communities experiencing compounded disparities. Findings indicated that acquired SDP risk is a significant predictor of most STI risk factors. Therefore, by addressing the foundational sub-constructs that comprise this TGP component, interventions can be more successful in their efforts to prevent HIV and STIs. Since sexual division of power is comprised of both physical exposures and behavioral risk factors, these two areas present opportunities for subsequent research. Studies could be conducted exploring the role of trauma and abuse on STI risk factors, or examine how behavioral risk factors interact and overlap to contribute to sexual health risk. Subsequent studies could also explore the sub-constructs that were not captured by variables in these dataset; this could allow for creation of more complete composite variables and may have more power to predict STI risk factors. For example, studies could explore the cathexis sub-constructs more in depth in order to assess whether a composite risk including conservative

norms and religious affiliations can serve as useful predictors for STI risk in a given population. More research is needed on the SDL and CATH composite risk variables, since findings were not significant in this study.

Other researchers may find it interesting to explore the ability of TGP constructs to predict STI risk in LGBT adolescents; this study only looked at heterosexual relationships and encounters, and no questions were asked of participants regarding their sexual orientation or the orientation of their casual sex partners. This may be an additional unique population to work with. Subsequent studies could also explore relationships between TGP constructs, risk factors, and STI outcomes as well. This may open the door to more complex quantitative analyses that could explore potential mediating or moderating relationships between study variables.

Future intervention efforts can also be informed from this study's findings, particularly in the context of confinement. Perhaps more activities targeting these underlying sub-constructs can be addressed in detention center activities, and these centers can be used as a public health setting. Potential detention center activities could include encouraging peer relationships that support healthy relationships, teaching young women communication skills, self-efficacy building to improve confidence, and empowering them to engage in relationships that are healthy partnerships. By teaching young women how to effectively cope with their histories and to build resiliency, there may be protective effects for their sexual health. Additionally, this study was merely one exploration into the experiences of detained Black girls; more research is needed among this population with respect to sexual and reproductive health, and both quantitative and qualitative methods can be employed.

5.4   Conclusions

In conclusion, this study found that the sexual division of power construct, created from sub-constructs guided by TGP, can be used as a statistically significant predictor for increases in STI risk factors among detained African American adolescent girls. Specifically, the sexual division of power construct can be used as a statistically significant predictor variable to explain

changes in girls' levels of perceived relationship control, fear of condom negotiation, refusal self-efficacy, occurrences of unprotected sexual encounters, and lifetime sexual partners. Thus, by intervening on SDP constructs, researchers could reduce STI risk, which would thereby help to prevent STIs and reduce the likelihood of future HIV transmission. This study also yields important findings about the applicability of this theoretical framework in compounded risk populations, especially when used retroactively. It also emphasizes areas of future intervention to improve STI and HIV risk factors and outcomes in vulnerable populations. Detained African American girls face an undue burden of disease with respect to their sexual health, and it is necessary to consider STIs and their associated risk factors as precursory risks for HIV acquisition. Only by understanding the combined impact that SDP sub-constructs – such as history of abuse, high-risk partnerships, drug and alcohol abuse, poor assertive communication skills, and condom self-efficacy – have on STI risks, can these racial disparities be addressed in public health practice.

6   References

Abram, K. M., Stokes, M. L., Welty, L. J., Aaby, D. A., & Teplin, L. A. (2017). Disparities in HIV/AIDS risk behaviors after youth leave detention: a 14-year longitudinal study. Pediatrics, 139(2), e20160360.

AIDS InfoNet. (2014). Couples with Mixed HIV Status. Retrieved October 9, 2017, from http://www.aidsinfonet.org/fact_sheets/view/613.

AIDSinfo. (2017). HIV and specific populations. Retrieved November 27, 2017, from https://aidsinfo.nih.gov/understanding-hiv-aids/fact-sheets/25/69/hiv-and-women

AIDSVu. (2017). Retrieved September 10, 2017, from https://aidsvu.org//resources/nyhaad2017/

AMA. (1990). Health status of detained and incarcerated youths. *JAMA, 263*, 987-991.

ASHA. (2017). Statistics. American Sexual Health Association, 1. Retrieved from http://www.ashasexualhealth.org/stdsstis/statistics/

AVERT. (2017). Symptoms and stages of HIV infection. Retrieved December 3, 2017, from https://www.avert.org/about-hiv-aids/symptoms-stages

Bauer, G.R. (2014). Incorporating intersectionality theory into population health research methodology: Challenges and the potential to advance health equity. *Social Science & Medicine, 110,* 10-17.

Belenko, S., Dembo, R., Rollie, M., Childs, K., & Salvatore, C. (2009). Detecting, preventing, and treating sexually transmitted diseases among adolescent arrestees: An unmet public health need. *American Journal of Public Health, 99*(6), 1032-1041.

Belenko, S., Dembo, R., Weiland, D., Rollie, M., Salvatore, C., Hanlon, A., & Childs, K. (2008). Recently arrested adolescents are at high risk for sexually transmitted diseases. *Sexually transmitted diseases, 35*(8), 758.

Belenko, S., Langley, S., Crimmins, S., & Chaple, M. (2004). HIV risk behaviors, knowledge, and prevention education among offenders under community supervision: A hidden risk group. *AIDS Education and Prevention, 16*(4), 367-385.

Bhatia, D.S., Harrison, A.D., Kubeka, M., Milford, C., Kaida, A., Bajunirwe, F., Wilson, I.B., Psaros, C., Safren, S.A., Bangsberg, D.R., Smit, J.A., & Matthews, L.T. (2017). The Role of Relationship Dynamics and Gender Inequalities as Barriers to HIV-Serostatus Disclosure: Qualitative Study among Women and Men Living with HIV in Durban, South Africa. *Frontiers in Public Health: HIV and AIDS, 5*(188), 1-9.

Bowleg, L. (2012). The problem with the phrase women and minorities: intersectionality – an important theoretical framework for public health. *American Journal of Public Health, 102*(7), 1267-1273.

Braithwaite, R. L., Stephens, T. T., Treadwell, H. M., Braithwaite, K., & Conerly, R. (2005). Short-term impact of an HIV risk reduction intervention for soon-to-be released inmates in Georgia. *Journal of Health Care for the Poor and Underserved, 16*(4), 130-139.

CDC Fact Sheet. (2013). CDC Fact Sheet: Information for Teens and Young Adults: Staying Healthy and Preventing STDs. Retrieved November 27, 2017, from https://www.cdc.gov/std/life-stages-populations/stdfact-teens.htm.

CDC. (2013). *HIV Surveillance Report*, Vol. 23; February 2013.

CDC. (2015). MMWR: Sexually Transmitted Diseases Treatment Guidelines. Retrieved from https://www.cdc.gov/std/tg2015/tg-2015-print.pdf.

CDC. (2016). Sexually Transmitted Disease Surveillance. Retrieved November 10, 2017, from https://www.cdc.gov/std/stats15/STD-Surveillance-2015-print.pdf.

CDC. (2017). HIV among Youth. Retrieved September 10, 2017, from https://www.cdc.gov/hiv/group/age/youth/index.html.

CDC. (2018). HIV among women. Retrieved December 3, 2017, from https://www.cdc.gov/hiv/group/gender/women/index.html

CDC. (2018). Social determinants of health: Know what affects health. Retrieved January 4, 2018, from https://www.cdc.gov/socialdeterminants/

Connell, R. (1987). Gender and power: Society, the person and sexual politics. *Stanford University Press, Vol XVII.*

Conroy, A.A., Gamarel, K.E., Neilands, T.B., Dilworth, S.E., Darbes, L.A., & Johnson, M.O. (2017). Relationship Dynamics and Partner Beliefs About Viral Suppression: A Longitudinal Study of Male Couples Living with HIV/AIDS (The Duo Project). *AIDS Behavior, 20*(7), 1572-1583.

Crenshaw, K. (1989). "Demarginalizing the intersection of race and sex: A Black feminist critique of antidiscrimination doctrine, feminist theory, and antiracist politics." *University of Chicago Legal Forum, 1*(8), 139-167.

Crosby, R.A., DiClemente, R.J., Salazar, L.F., Wingood, G.M., McDermott-Sales, J., Young, A.M., & Rose, E. (2013). Predictors of Consistent Condom Use Among Young African American Women. AIDS and Behavior, 17(3), 865-871. doi: 10.1007/s10461-011-9998-7

DePadilla, L., Windle, M., Wingood, G., Cooper, H., & DiClemente, R. (2011). Condom use among young women: Modeling the Theory of Gender & Power. Health Psychology: Official Journal of the Division of Health Psychology, American Psychological Association, 30(3), 310–319. http://doi.org/10.1037/a0022871

DiClemente RJ, Wingood GM, Harrington KF, Lang DL, Davies SL, Hook EW 3rd, Oh MK, Crosby RA, Hertzberg VS, Gordon AB, Hardin JW, Parker S, Robillard A. (2004). Efficacy of an HIV prevention intervention for African American adolescent girls: a randomized controlled trial. Journal of the American Medical Association, 292(2):171-9.

DiClemente, R. J., Crosby, R. A., & Kegler, M. C. (2009). Emerging theories in health promotion practice and research (2nd ed.). San Francisco, CA: Jossey-Bass.

DiClemente, R. J., Davis, T. L., Swartzendruber, A., Fasula, A. M., Boyce, L., Gelaude, D., & Staples-Horne, M. (2014). Efficacy of an HIV/STI Sexual Risk-Reduction Intervention for African American Adolescent Girls in Juvenile Detention Centers: A Randomized Controlled Trial. *Women & Health*, *54*(8), 726–749. http://doi.org/10.1080/03630242.2014.932893.

DiClemente, R. J., Wingood, G. M., Harrington, K. F., Lang, D. L., Davies, S. L., Hook, E. W., 3rd, Robillard, A. (2004). Efficacy of an HIV prevention intervention for African American adolescent girls: a randomized controlled trial. JAMA, 292(2), 171-179. doi: 10.1001/jama.292.2.171

DiClemente, R.J., Crosby, R.A., & Kegler, M.C. (Eds.). (2010). *Emerging theories in health promotion practice and research: Strategies for improving public health* (2nd ed.). San Francisco, CA: Jossey-Bass.

DJJ Statewide Stats. (2011). State of Georgia – Department of Juvenile Justice. Retrieved December 3, 2017, from

http://www.djj.state.ga.us/ResourceLibrary/rptstatSnapshot.asp?type=State

DJJ. (2016). Division of Secure Detention. *Department of Juvenile Justice.* Retrieved December 3, 2017, from https://djj.georgia.gov/division-secure-detention

Effective Interventions. (2017). SIHLE. Retrieved December 3, 2017, from https://effectiveinterventions.cdc.gov/en/HighImpactPrevention/Interventions/SIHLE.aspx.

Forrest, C. B., Tambor, E., Riley, A. W., Ensminger, M. E., & Starfield, B. (2000). The health profile of incarcerated male youths. *Pediatrics, 105*(Supplement 2), 286-291.

Gender Injustice. (2017). Gender injustice. *The National Crittenton Foundation.* Retrieved January 4, 2018, from http://nationalcrittenton.org/gender-injustice/

Glanz, K., Lewis, F., & Rimer, B. (Eds.). (2015). *Health behavior and health education: Theory, research, and practice* (5th ed.). San Francisco, CA: Jossey-Bass.

Golzari, M., Hunt, S. J., & Anoshiravani, A. (2006). The health status of youth in juvenile

    detention facilities. *Journal of Adolescent Health, 38*(6), 776-782.

Gordon, M. S., Kinlock, T. W., McKenzie, M., Wilson, M. E., & Rich, J. D. (2013). Rapid HIV

    testing for individuals on probation/parole: outcomes of an intervention trial. *AIDS and*

    Behavior, 17(6), 2022-2030.

Guttmacher Institute. (2017). Sex and HIV education. Retrieved December 3, 2017, from

    https://www.guttmacher.org/state-policy/explore/sex-and-hiv-education

Hammett, T. M., Harmon, M. P., & Rhodes, W. (2002). The burden of infectious disease among

    inmates of and releasees from US correctional facilities, 1997. *American Journal of*

    Public Health, 92(11), 1789-1794.

Healthy People 2020. (2018). Social determinants of health. Retrieved January 4, 2018, from

    https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-

    health

Hixson, B.A., Omer, S.B., del Rio, C., & Few, P.M. (2011). Spatial clustering of HIV prevalence

    in Atlanta, Georgia and population characteristics associated with case concentrations.

    Journal of Urban Health, 88(1), 129-141.

Kelly, P. J., Bair, R. M., Baillargeon, J., & German, V. (2000). Risk Behaviors and the

    Prevalence of Chlamydia in a Juvenile Detention Facility. *Clinical Pediatrics, 39*(9), 521-

    527.

KFF. (2014). Women and HIV/AIDS in the United States. Retrieved December 3, 2017, from

    https://www.kff.org/hivaids/fact-sheet/women-and-hivaids-in-the-united-states/

Latham, T.P, Sales, J.M., Boyce, L.S., Renfro, T.L., Wingood, G.M., DiClemente, R.J., & Rose,

    E. (2010). Application of ADAPT-ITT: Adapting an evidence-based HIV prevention

    intervention for incarcerated African American adolescent females. *Health Promotion*

    Practice, 11(3). 53S-60S. doi: 10.1177/1524839910361433

Latham, T.P, Sales, J.M., Renfro, T.L, Boyce, L.S., Rose, E., Murray, C.C., Wingood, G.M., &
DiClemente, R.J. (2012). Employing a teen advisory board to adapt an evidence-based
HIV/STD intervention for incarcerated African-American adolescent women. *Health
Education Research*, *27(*5), 895-903.

Leonard, A.D, Markham, C.M., Biu, T., Shegog, R., & Paul, M.E. (2011). Lowering the Risk of
Secondary HIV Transmission: Insights from HIV-Positive Youth and Health Care
Providers. *Perspect Sex Reprod Health, 42(2),* 110-116. doi:10.1363/4211010.

Logie, C., James, L, Tharao, W., & Loutfy, M. (2013). Associations between HIV-related
stigma, racial discrimination, gender discrimination, and depression among HIV-positive
African, Caribbean, and Black women in Ontario, Canada. *Behavioral and Psychosocial
Research, 27*(2).

Lorenc, T., Marrero-Guillamon, I., Llewellyn, A., Aggleton, P., Cooper, C., Lehmann, A., &
Lindsay, C. (2011). HIV testing among men who have sex with men (MSM): systematic
review of qualitative evidence. Health Education Research, 26(5), 834-846.
doi:10.1093/her/cyr064

Margolis, A. D., MacGowan, R. J., Grinstead, O., Sosman, J., Kashif, I., Flanigan, T. P., &
Group, P. S. S. (2006). Unprotected sex with multiple partners: implications for HIV
prevention among young men with a history of incarceration. *Sexually transmitted
diseases, 33*(3), 175-180.

Martin, S. S., O'Connell, D. J., Inciardi, J. A., Surratt, H. L., & Beard, R. A. (2003). HIV/AIDS
among probationers: an assessment of risk and results from a brief intervention. *Journal
of Psychoactive Drugs, 35*(4), 435-443.

Maulsby, C., Millett, G., Lindsey, K., Kelley, R., Johnson, K., Montoya, D., & Holtgrave, D.
(2014). HIV among Black men who have sex with men (msm) in the United States: a
review of the literature. *AIDS and Behavior*, 18(1), 10-25.

Minton, H.A.M., Mittal, M., Elder, H., & Carey, M.P. (2016). Relationship Factors and Condom Use Among Women with a History of Intimate Partner Violence. AIDS and Behavior, 20(1), 225-234. doi: 10.1007/s10461-015-1189-5

Morris, R. E., Harrison, E. A., Knox, G. W., Tromanhauser, E., Marquis, D. K., & Watts, L. L. (1995). Health risk behavioral survey from 39 juvenile correctional facilities in the United States. *Journal of Adolescent Health, 17*(6), 334-344.

Norwood, C.R., & Zhang, Y. (2015). Condom Attitudes and Use among African American College Women Students. Journal of Black Sexuality and Relationships, 2(1), 83-99. doi: 10.1353/bsr.2015.0018

Orengo-Aguayo, R.E. & Perez-Jimenez, D. (2009). Impact of Relationship Dynamics and Gender Roles in the Protection of HIV Discordant Heterosexual Couples: an Exploratory Study in the Puerto Rican Context. *Puerto Rico Health Sciences Journal, 28*(1), 30-39.

Panchanadeswaran, S., Johnson, S.C., Go, V.F., Srikrishnan, K.A., Sivaram, S., Solomon, S., Bentley, M.E., Celentano, D. (2008). Using the Theory of Gender and Power to Examine Experiences of Partner Violence, Sexual Negotiation, and Risk of HIV/AIDS among Economically Disadvantaged Women in Southern India. *Journal of Aggression, Maltreatment & Trauma*, 15:3-4, 155-178. doi: 10.1080/10926770802097327

Perez-Sindin Lopez, X.S. (2013). Advantages and disadvantages of secondary data collection nowadays. *World Values Survey.*

POZ. (2018). Disclosure. Retrieved January 4, 2018, from https://www.poz.com/basics/hiv-basics/disclosure

Romero, E. G., Teplin, L. A., McClelland, G. M., Abram, K. M., Welty, L. J., & Washburn, J. J. (2007). A longitudinal study of the prevalence, development, and persistence of HIV/sexually transmitted infection risk behaviors in delinquent youth: implications for health care in the community. *Pediatrics, 119*(5), e1126-e1141.

Sedlak, A.J. & McPherson, K. S. (2010). Youth's needs and services. *OJJDP Juvenile Justice Bulletin*, 10-11.

SERC. (2018). Sexual Health. *Sexuality Education Resource Center MB*. Retrieved January 4, 2018, from http://www.serc.mb.ca/sexual-health/stis-and-hiv/chlamydia-gonorrhea

SMAIF. (2017). U.S. Statistics. Retrieved September 10, 2017, from https://www.hiv.gov/hiv-basics/overview/data-and-trends/statistics.

Snyder, H. & Sickmund, M. Juvenile Offenders and Victims: 2006 National Report. *Office of Juvenile Justice and Delinquency Programs.*

Teplin, L. A., Mericle, A. A., McClelland, G. M., & Abram, K. M. (2003). HIV and AIDS risk behaviors in juvenile detainees: Implications for public health policy. *American Journal of Public Health, 93*(6), 906-912.

Voisin, D. R., Salazar, L. F., Crosby, R., & DiClemente, R. J. (2013). The relationship between between ethnic identity and Chlamydia and Gonorrhea infections among low-income detained African American adolescent females. *Psychology, Health, & Medicine, 18*(3), 355-362.

WHO (n.d.). The determinants of health. *World Health Organization*. Retrieved November 27, 2017, from http://www.who.int/hia/evidence/doh/en/

Wingood, G., DiClemente, R., Robinson-Simpson, L., Lang, D., Caliendo, A., & Hardin, J. (2013). Efficacy of an HIV intervention in reducing high-risk human papillomavirus, nonviral sexually transmitted infections, and concurrency among African American women: a randomized-controlled trial. *Journal of Acquired Immune Deficiency Syndrome, 63,* S36-43.

Wingood, G.M. & DiClemente, R.J. (2000). Application of the Theory of Gender & Power to Examine HIV-Related Exposures, Risk Factors, and Effective Interventions for Women. *Health Education & Behavior, 27(5).* doi: 10.1177/109019810002700502.

7   **Appendices**

Appendix A – IMARA Codebook

Appendix B – Figure 3

Appendix C – Figure 4

Appendix D – Figure 5

Appendix E – Figure 6

7.1   Appendix A – IMARA Codebook

<u>Variable suffixes</u>: Baseline (T1): " _a"; T2: "_b"; T3: "_c"

Variable Name	Variable	Response choices	Range/ Scoring
+ **IMARA Survey – Codebook**			
Demographics			
a2	Participants age	(years)	
va1	What is the last grade that you completed in school?	**1**=8th grade or less **2**=9th or 10th grade **3**=11th or 12th grade **4**=Graduated high school or GED **5**=Refuse to Answer	
Parental Communication			
va32	In the last 90 days, how often have you and your parent(s) talked about sex? (Choose one)	**1**=Never **2**=Rarely **3**=Sometimes **4**=Often **5**=Always	
va33	In the last 90 days, how often have you and your parent(s) talked about how to use a condom?	**1**=Never **2**=Rarely **3**=Sometimes **4**=Often **5**=Always	
va34	In the last 90 days, how often have you and your parent(s) talked about how to protect yourself from Sexually Transmitted Diseases (STDs)?	**1**=Never **2**=Rarely **3**=Sometimes **4**=Often **5**=Always	
va35	In the last 90 days, how often have you and your parent(s) talked about protecting yourself from the HIV virus?	**1**=Never **2**=Rarely **3**=Sometimes **4**=Often **5**=Always	
va36	In the last 90 days, how often have you and your parent(s) talked about protecting yourself from becoming pregnant?	**1**=Never **2**=Rarely **3**=Sometimes **4**=Often **5**=Always	
Labor Force Participation			

fam_aid***	In the past 12 months, did you or anyone you live with receive any money or services from any of the following? (Check all items that apply OR check "NO")	-Welfare (including TANF (Temporary Assistance to Needy) -Food stamps - WIC (Women, infants, and children) - Section 8 housing (housing subsidies) - No	Range 0 – 4 (4 means 4 responses checked) View Check-All-That-Apply Responses section for individual responses
va38	Do you have a job for which you are paid?	**0**=No **1**=Yes	
CDC Homeless Questions			
va44	In the past 12 months, have you ever been thrown out of your house or run away from home for more than one night?	**0**=No **1**=Yes	
Sex History			
sl4	The very last time you had sex, did you use a condom to prevent STDs or pregnancy?	**0**=No **1**=Yes	
nosexp	In your entire life, how many guys have you had vaginal sex with?	**1 - 200**=range	
STD Testing and Treatment History			
vc2	How much do you worry that you could get HIV?	**1 = Not at all worried** **2 = A little worried** **3 = Somewhat worried** **4 = Worried** **5 = A lot worried**	
Partner Information (boyfriend)			
vd1	Do you have a boyfriend / main partner?	**0**=No **1**=Yes	
ve1	In general, are the people you have sex with:	**0**=Much younger than you (4 or more years) **1**=Younger than you (2-3 years) **2**=About the same age **3**=Older than you (2-3 years) **4**=Much older than you (4 or more years)	
Partner Information (casual partner)			
ve2	Do you currently have a casual sex partner(s)?	**0**=No **1**=Yes	
Abuse History			
vi1	Have you ever been emotionally abused?	**0**=No **1**=Yes	

vi3	Have you ever been physically abused?	**0**=No **1**=Yes	
vi5	Has anyone ever forced you to have vaginal sex when you didn't want to?	**0**=No **1**=Yes	
Depression			
vj1	I felt that I could not shake off the blues even with help from my family and friends.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
vj2	I felt depressed.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
vj3	I thought my life had been a failure.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
vj4	I felt fearful.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
vj5	My sleep was restless.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
vj6	I felt lonely.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
vj7	I had crying spells.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
vj8	I felt sad.	**1**=Less Than 1 Day **2**=1-2 Days **3**=3-4 Days **4**=5-7 Days	
Condom Self-Efficacy			
vl1	How much of a problem would it be for you to put a condom on a hard penis?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
vl2	How much of a problem would it be for you to unroll a condom down correctly on the first try?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	

vl3	How much of a problem would it be for you to start over using a new condom if you placed it on the wrong way?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
vl4	How much of a problem would it be for you to unroll a condom fully to the base of a penis?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
vl5	How much of a problem would it be for you to squeeze air from the tip of a condom?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
vl6	How much of a problem would it be for you to take a condom off without spilling the semen?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
vl7	How much of a problem would it be for you to take a condom off before your partner loses his erection?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
vl8	How much of a problem would it be for you to dispose of a condom?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
vl9	How much of a problem would it be for you to use a spermicide/lubricant with a condom?	**1**=None **2**=Not Much **3**=A Little **4**=Some **5**=A Lot	
Partner Communication History / New partner History			
vm4	How hard is it for you to ask if he could use a condom?	**1**=Very Hard **2**=Hard **3**=Easy **4**=Very Easy	
vm5	How hard is it for you to demand that he use a condom?	**1**=Very Hard **2**=Hard **3**=Easy **4**=Very Easy	
vm6	How hard is it for you to refuse to have sex if he won't wear a condom?	**1**=Very Hard **2**=Hard **3**=Easy **4**=Very Easy	
Refusal Self-Efficacy			

vs1	How sure are you that you would be able to say NO to having sex with someone you have known for a few days or less?	**1**=I Definitely Can't Say No **2**=I Can't Say No **3**=I Can Say No **4**=I Definitely Can Say No	
vs2	How sure are you that you would be able to say NO to having sex with someone you want to date again?	**1**=I Definitely Can't Say No **2**=I Can't Say No **3**=I Can Say No **4**=I Definitely Can Say No	
vs3	How sure are you that you would be able to say NO to having sex with someone who you want to fall in love with you?	**1**=I Definitely Can't Say No **2**=I Can't Say No **3**=I Can Say No **4**=I Definitely Can Say No	
vs4	How sure are you that you would be able to say NO to having sex with someone who is pressuring you to have sex?	**1**=I Definitely Can't Say No **2**=I Can't Say No **3**=I Can Say No **4**=I Definitely Can Say No	
vs5	How sure are you that you would be able to say NO to having sex with someone after you have been drinking alcohol?	**1**=I Definitely Can't Say No **2**=I Can't Say No **3**=I Can Say No **4**=I Definitely Can Say No	
vs6	How sure are you that you would be able to say NO to having sex with someone who refuses to wear a condom?	**1**=I Definitely Can't Say No **2**=I Can't Say No **3**=I Can Say No **4**=I Definitely Can Say No	
vs7	How sure are you that you would be able to say NO to having sex with someone who you have had sex with before?	**1**=I Definitely Can't Say No **2**=I Can't Say No **3**=I Can Say No **4**=I Definitely Can Say No	
Fear of Condom Negotiating			
vt1	I have been worried that if I talked about using condoms with my boyfriend or sex partner he would ignore my request.	**1**=Never **2**=Rarely **3**=Sometimes **4**=Most of the Time **5**=Always	
vt2	I have been worried that if I talked about using condoms with my boyfriend or sex partner he would threaten to hit me.	**1**=Never **2**=Rarely **3**=Sometimes **4**=Most of the Time **5**=Always	
vt3	I have been worried that if I talked about using condoms with my boyfriend or sex partner he would threaten to leave me.	**1**=Never **2**=Rarely **3**=Sometimes **4**=Most of the Time **5**=Always	
vt4	I have been worried that if I talked about using condoms with my boyfriend or sex	**1**=Never **2**=Rarely **3**=Sometimes	

	partner he would swear at me, or call me names.	**4**=Most of the Time **5**=Always	
vt5	I have been worried that if I talked about using condoms with my boyfriend or sex partner he would hit, push or kick me.	**1**=Never **2**=Rarely **3**=Sometimes **4**=Most of the Time **5**=Always	
vt6	I have been worried that if I talked about using condoms with my boyfriend or sex partner he would leave me.	**1**=Never **2**=Rarely **3**=Sometimes **4**=Most of the Time **5**=Always	
vt7	I have been worried that if I talked about using condoms with my boyfriend or sex partner he would go out with other girls.	**1**=Never **2**=Rarely **3**=Sometimes **4**=Most of the Time **5**=Always	
Relationship Control			
vu1	If I asked my partner to use a condom, he would get violent.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu2	Most of the time we do what my partner wants to do.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu3	My partner won't let me wear certain clothes.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu4	When my partner and I are together I am pretty quiet.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu5	I feel trapped or stuck in my relationship.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu6	My partner does what he wants even if I don't want him to.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu7	I am more committed to our relationship than my partner.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu8	My partner always wants to know where I am.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	

vu9	My partner gets more out of the relationship than I do.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu10	Having a partner at all times is important to me.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu11	There are a lot of good men around to have a relationship with.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu12	I tell my partner who he can spend time with.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu13	No other man could love me the way my partner does.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu14	My partner cares more about me than I do about him.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu15	There is nothing I won't do for my partner.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu16	I have sex with no one else but my partner.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
vu17	My partner and I should have the same say about important decisions that affect us.	**1**=Strongly Disagree **2**=Disagree **3**=Agree **4**=Strongly Agree	
STD Knowledge			
vw1	Birth control pills protect women against the HIV virus. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw2	Most people who have AIDS look sick. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw3	Men are more susceptible (or likely) to get an STD infection than women. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw4	Having an STD can increase the risk of getting H I V. (Choose one)	**1**=True **2**=False **3**=Don't Know	

vw5	If a man has an STD, he will have noticeable symptoms. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw6	STDs can cause infertility, spontaneous abortions and still births. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw7	STDs can only be passed through open sores or lesions. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw8	If a man pulls out before orgasm (Cumming), condoms don't need to be used to protect against H I V. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw9	Vaseline and other oils should be used to lubricate condoms. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw10	Condoms cause men physical pain. (Choose one)	**1**=True **2**=False **3**=Don't Know	
vw11	Most people who carry the AIDS virus look healthy. (Choose one)	**1**=True **2**=False **3**=Don't Know	
Problem Drug and Alcohol			
vy4	How many times have you spent all or most of the day, using alcohol or other drugs, or getting over their effects? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy5	How many times have you given up activities like sports, work, school, or being with friends or relatives in order to use alcohol or other drugs or get over their effects? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy6	How many times has alcohol or other drug use left you feeling depressed, agitated, paranoid, or unable to concentrate? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	

vy7	How many times have you neglected your responsibilities because of alcohol or other drug use? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy8	How many times have you missed work or school because of alcohol or other drug use? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy9	How many times have you driven a motor vehicle after using alcohol or other drugs? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy10	How many times has alcohol or other drug use caused you problems with the law? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy11	How many times have you hit someone or become violent while using alcohol or other drugs? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy12	How many times have you used so much alcohol or other drugs that the next day you could not remember what you had said or done?	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
vy13	How many times have you used more alcohol or other drugs than you intended to? (Choose one)	**0**=0 **1**=1 **2**=2 **3**=3 **4**=4 to 6 **5**=7 to 10 **6**=11 or more	
Check-All-That-Apply Responses			

fam_aidn	In the past 12 months, did you or anyone you live with receive any money or services from any of the following? (Check all items that apply OR check NO)	0 = No 1 = Yes	
Condom Skills			
Opens_Corner	Did they open the condom at the top corner	**0 = No** **1=Yes**	
Squeezeair_out	Did they squeeze the air out of the tip	**0 = No** **1=Yes**	
Condom_right_side_up	Did they place the condom on the right side up	**0 = No** **1=Yes**	
Tip_pinched	Did they keep the tip pinched	**0 = No** **1=Yes**	
Unrolls_base	Did they unroll the condom at the base	**0 = No** **1=Yes**	
Condom_intact	Did the condom remain intact	**0 = No** **1=Yes**	
Offense Data			
INCDAYScurrent	Number of days locked up for current offense	#	Baseline (T1) only
Created Summary Variables			
uvs90	# of unprotected vaginal sex acts in the past 90 days	vs90nt-vs90nts	
depression	Depressive symptoms		
condomselfefficacy	Condom use self-efficacy		
partnercommunicationSE	Partner sexual communication self-efficacy		
partnercommunicationfreq	Partner sexual communication frequency		
refusalSE	Refusal self-efficacy		
fearcondomnegotiation	Fear of condom negotiation		
stdknowledge	STD Knowledge		
parentalcommunication	Parental sexual communication frequency		
relationshipcontrol	Relationship control		

7.2   Appendix B – Figure 3

Figure 3. Summary Table of TGP Composite Risk Descriptive Statistics				
	Mean	Standard Deviation	Scale Range	Median
SDL Composite Risk	2.80	0.70	0 – 4	3.00
SDP Composite Risk	2.43	1.41	0 – 6	2.00
CATH Composite Risk	2.69	1.04	0 – 5	3.00

7.3 Appendix C – Figure 4

Figure 4. Summary Table of STI Risk Factor Descriptive Statistics				
	Mean	Standard Deviation	Scale Range	Median
Relationship Control	35.12	5.38	17 – 68	35.00
Fear of Condom Negotiation	8.46	3.67	7 – 35	7.00
Condom Use Skills	3.76	1.05	0 – 6	4.00
Refusal Self-Efficacy	23.25	4.43	7 – 28	24.00
Unprotected Sexual Encounters	7.81	21.96	0 – 200	2.00
Lifetime Partners	6.42	15.73	1 – 200	3.00

7.4   Appendix D – Figure 5

Figure 5. Summary Table of Bivariate Association Findings		
	<u>Correlation Coefficient</u>	<u>Sig. (2-tailed)</u>
Relationship Control		
SDL Risk	0.156*	0.032*
SDP Risk	0.288**	0.000**
CATH Risk	0.168*	0.021*
Fear of Condom Negotiation		
SDL Risk	0.058	0.430
SDP Risk	0.343**	0.000**
CATH Risk	-0.028	0.703
Condom Use Skills		
SDL Risk	0.127	0.085
SDP Risk	-0.088	0.234
CATH Risk	0.010	0.891
Refusal Self-Efficacy		
SDL Risk	-0.110	0.131
SDP Risk	-0.328**	0.000**
CATH Risk	-0.065	0.377
Unprotected Sexual Encounters		
SDL Risk	0.091	0.243
SDP Risk	0.295**	0.000**
CATH Risk	0.013	0.873
Lifetime Sexual Partners		
SDL Risk	0.056	0.442
SDP Risk	0.327**	0.000**
CATH Risk	0.021	0.771
*. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed).		

7.5   Appendix E – Figure 6

Figure 6. Summary Table of Multivariate Logistic Regression Model Findings			
	AOR	Sig. (2-tailed)	95% Confidence Interval
Relationship Control ($R^2 = 0.085$)			
SDL Risk	1.288	0.248	[0.838, 1.979]
SDP Risk	1.319*	0.016*	[1.504, 1.651]
CATH Risk	1.221	0.186	[0.908, 1.642]
Fear of Condom Negotiation ($R^2 = 0.180$)			
SDL Risk	1.111	0.659	[0.696, 1.775]
SDP Risk	1.826**	0.000**	[1.409, 2.367]
CATH Risk	0.773	0.118	[0.561, 1.067]
Condom Use Skills ($R^2 = 0.025$)			
SDL Risk	0.645	0.130	[0.365, 1.139]
SDP Risk	1.138	0.390	[0.847, 1.530]
CATH Risk	0.970	0.877	[0.658, 1.429]
Refusal Self-Efficacy ($R^2 = 0.173$)			
SDL Risk	1.287	0.265	[0.826, 2.007]
SDP Risk	1.754**	0.000**	[1.359, 2.264]
CATH Risk	0.979	0.890	[0.721, 1.329]
Unprotected Sexual Encounters ($R^2 = 0.077$)			
SDL Risk	1.008	0.971	[0.638, 1.594]
SDP Risk	1.445*	0.003*	[1.132, 1.845]
CATH Risk	0.857	0.334	[0.627, 1.172]
Lifetime Sexual Partners ($R^2 = 0.154$)			
SDL Risk	1.172	0.480	[0.755, 1.820]
SDP Risk	1.708**	0.000**	[1.335, 2.185]
CATH Risk	0.842	0.265	[0.842, 0.622]
*. Significant at the 0.05 level (2-tailed). **. Significant at the 0.01 level (2-tailed).			