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Shelby Cash Date

The Power of Influence: A Study of the Interrelationship Between the Environment and Individual Level Risky Behavior in Detained African American Female Adolescents

By

Shelby Alexandra Cash
MPH

Behavioral Sciences and Health Education

_____

Ralph DiClemente, PhD
Committee Chair

_____

Jessica Sales, PhD
Committee Member

_____

Delia Lang, PhD
Committee Member

_____

Michael Windle, PhD
Department Chair

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By

Shelby Alexandra Cash

B.A. Psychology
Spelman College
2010

Thesis Committee Chair: Ralph DiClemente, PhD

An abstract of
A thesis submitted to the Faculty of the
Rollins School of Public Health of Emory University
in partial fulfillment of the requirements for the degree of
Master of Public Health
in Behavioral Sciences and Health Education
2012

Abstract

The Power of Influence: A Study of the Interrelationship Between the Environment and Individual Level Risky Behavior in Detained African American Female Adolescents

By Shelby Cash

Rates of Sexually Transmitted Diseases (STDs) in the African American female adolescent community continue to be high with regards to gonorrhea and chlamydia. When the scope is narrowed to those who are a part of the U.S. Juvenile Justice System (JJS) those rates grow at an alarming rate. While there has been focus on youth who are detained, little has been done with regards to the sexual health of detained African American female adolescents. The purpose of this study was to examine the relationship of ecological factors that influence condom use and STD status in detained African American female adolescents to better inform future STD/HIV prevention interventions.

A sample of 145 self-identified detained African American female adolescents ages 13-17 completed an audio-computer-assisted self-interview survey and provided a urine sample for STD testing upon arrival at a Metropolitan Regional Youth Detention Center. Assessments were performed to assess the associations among ecological factors related to individual behavior (risky sex, drugs and alcohol), psychological well-being, familial factors, relational factors, peer factors, and community factor influences and their associations to condom use and STD status.

Findings indicated that peer factors significantly predicted both condom use and STD status while psychological well-being predicted condom use only. These findings further suggest that those with high levels of peer norms in support of risky behavior are more likely to use condoms inconsistently. Similarly, those with high levels of gang affiliation were more likely to test positive for an STD. Lastly, findings indicate that those with high stress levels were more likely to use condoms inconsistently. These results suggest using an ecological approach to future STD prevention interventions among this population.

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Acknowledgements

First and foremost, I thank God for sustaining me through these past two years as I worked on the Imara Project (Adapting SiHLE for Detained African American Adolescent Females) and to obtain my MPH.

I would also like to thank the participants who gave their time to participate in the study. I would also like to thank my co-workers for their confidence in my abilities and for acting as mentors. Especially, I would like to thank Eve Rose for her assistance with communicating with the funding agency. I thank my thesis advisor, Dr. Ralph DiClemente for the opportunity to be a part of the Imara Project as well as use the data. Additionally, I would like to thank my committee members, Dr. Jessica Sales and Dr. Delia Lang, for their tremendous support and continual guidance throughout the process. I want to especially thank my parents, Stan and Sharon Cash for their love and support.

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Introduction

Each year, over 2 million new cases of sexually transmitted diseases (STDs) are reported to the United States Centers for Disease Control and Prevention (CDC) (Hall et al., 2008; Prevention, 2011b). Nearly half of these illnesses occur among 15 to 24 year-olds, despite the fact that these adolescents and young adults represent only 25% of the sexually experienced population (Weinstock, Berman, & Cates, 2004). Further, youth less than 30 years old make up the largest proportion of Americans infected with the Human Immunodeficiency Virus (HIV) each year (Prevention, 2011b), and adolescent women bear the largest overall STD burden. In 2010, 15 to 19 year old women had higher rates of chlamydia and gonorrhea than any age/sex group; moreover, their syphilis rates doubled between 2004 and 2008 (Prevention, 2009, 2011b). The total estimated economic burden of treating cases of STDs is approximately 13 billion dollars annually (Prevention, 2011b), and the negative implications resulting from these cases takes a costly toll on adolescents as they struggle socially with having to confront feelings of embarrassment and fear.

For some adolescents, denial may set in when realizing they have tested positive for an STD; while others conceptualize a blemish on their character, because they have been conditioned to believe that only "bad" people contract STDs (Boyd, 2010). In her book Damaged Goods, Women Living With Incurable Sexually Transmitted Diseases, Adina Nack states that "the double standard of sexually appropriate behaviors for men and women contributes to the construction of women as symbols of immorality and carriers of disease, creating two "tribes" of femininity: good girls and bad girls (Nack p. 79, 2008). When this perception is also embraced by others within the sphere of influence in which many of these girls find themselves, it serves only to validate their

misguided conclusion that they themselves are invincible, and that being a carrier of an STD could never happen to them (Nack, 2008).

Most health experts assert that engaging in risky sexual behavior is the major cause of the high number of cases of STD contraction among American female adolescents (Mancini & Huebner, 2004). Recent data suggests that 35.6% of high school girls are sexually active and 11.2% have had sex with four or more persons, but only 53.9% used a condom during their last sexual intercourse (Surveillance, 2010). Previous studies have concluded that many young adolescents view condoms as only an option for preventing pregnancy, and a barrier to a pleasurable sexual encounter (Freedman, Salazar, Crosby, & DiClemente, 2005).

While the statistics regarding the incidences of contracting STDs among the general adolescent population are high, those numbers grow at an alarming rate when narrowing the scope of consideration to adolescents who find themselves within the U.S. juvenile justice system (JJS). Their risk for contracting gonorrhea and chlamydia is elevated because they initiate sexual activities at an earlier age, report more sexual partners, are more likely to continue to be sexually active, and do not follow safe sexual practices consistently (Barthlow, Horan, Diclemente, & Lanier, 1995; Diclemente, Lanier, Horan, & Lodico, 1991; Rickman et al., 1994). Among incarcerated or detained adolescent girls, the percent that tested positive for gonorrhea ranged from 5.1% to 23.4%, while the results for chlamydia ranged from 9.5% to 32.5% (Belenko, Dembo, Rollie, Childs, & Salvatore, 2009). The actual percentages for positive test results for gonorrhea and chlamydia may be even higher than the reported number due to the lack of treatment within this population and the asymptomatic nature of both STDs (Belenko, et al., 2009).

Because the JJS primarily focuses on public health safety relating to adolescent crime, it is not organized to routinely identify nor treat STDs; nor is the system able to provide increased access to preventive healthcare (Belenko, et al., 2009). This lack of "connectivity" serves to exacerbate the problem, as the cases of STDs among this population routinely go undetected. The simplest approach is to reduce the overall risk for HIV through programs that focus on reducing risky sexual behaviors and promoting condom use in this *at risk* adolescent population.

As a method of gaining access to useful information, the employment of an ecological approach for analyzing interrelated contextual risk factors in adolescent sexual behavior, is finding more and more appeal among researchers. For instance, Bronfenbrenner (1979) identified four environmental systems having an effect on an individual's behavior; the microsystem, mesosystem, exosystem, and macrosystem. Simply stated, the microsystem refers to the level in which an individual interacts with his or her *immediate* surroundings. The mesosystem refers to the *immediate social environment*, exosystem is the social *environment that an individual may not interact with directly*, and the macrosystem includes *broad societal factors* such as ethnic identity. Other models have also been developed using the ecological approach. For the purposes of this research, the ecological approach identified in the work of Salazar et al. (2009) will be applied through an examination of the ecological systems present in the following hierarchy of influential factors: individual, relational, familial, community, and societal.

Individual factors such as incarceration/delinquent history, depression, and drug and alcohol use are significant predictors of risky sexual behavior in adolescents. While females remain the minority in the number of juvenile offenses committed, the number of

females becoming a part of the JJS is increasing dramatically (Siegel & Senna, 2000). Once part of the system, subsequent delinquent charges become a significant challenge that adolescent females face (Acoca, 1999). This cycle lays the foundation for future behavioral problems and health issues that the JJS is not equipped to handle. One such health issue is depression. Depression has been shown to be more prevalent in delinquent adolescent females than their adolescent male and non-delinquent adolescent female counterparts; therefore having a greater influence on their risky sexual behavior (Prescott, 1998; Steinberg & Avenevoli, 2000). Another significant health issue resulting from this cycle through the JJS, and a contributor to risky sexual behavior is drug and alcohol use. In related studies, Perkins et al. (1998) found that alcohol increased the probability of having unprotected sex in African American females by 85% ; while Teplin et al. (2003), found that adolescent female detainees reported more frequent levels of unprotected sex in the past 30 days and unprotected sex while drunk or high.

When considering an adolescents' relational influences, their perception of, and feelings toward a "main" sex partner versus a "casual" sex partner, is a significant factor in determining the amount of risk they will engage in. For example, adolescents may trust their main sex partner and will choose not to use condoms as frequently because they perceive greater health risks associated with casual sex partners (Ellen, Adler, Gurvey, Millstein, & Tschann, 2002; Lescano, Vazquez, Brown, Litvin, & Pugatch, 2006; Reisen & Poppen, 1999). This was further supported by research conducted by Gebhardt and Greunven (2003) in which results indicated that while 48% of adolescents used condoms with their casual sex partner, only 23% used condoms with their main sex partners.

The importance of positive, supportive familial relations cannot be overemphasized. In cases where parents monitor activities and communicate with their children, the incidences of risky sexual behavior are significantly reduced. Specifically, studies have indicated that when adolescents talk to their parents about sex, and their parents are aware of with whom and where they are outside of school and work, they are less likely to engage in risky sexual behavior and will likely use condoms at last sex (DiClemente et al., 2001; Miller, Levin, Whitaker, & Xu, 1998).

When associations and activities that adolescents encounter within the framework of their community, such as friendships with deviant peers, and recurring instances of crime within one's neighborhood are assessed, risky sexual behaviors are seen to be more prevalent(Freudenberg, 1986; Sanders-Philip, 1997) When adolescents perceive their peers to be engaging in, or choosing not to engage in risky sexual practices, they are more likely to adopt similar behavior patterns (Crosby et al., 2000; Millstein & Moscicki, 1995; D. R. Voisin, 2002; D.R. Voisin, 2003). Similarly, when there is a lack of structured activity for adolescents to engage in during times of minimal or no adult supervision, they are more likely to associate with peers who stay out late and have experiences being approached by the police (Mahoney & Stattin, 2000). Research has also shown that when one has positive neighborhood connections, it enables the entire community to more suitably address dangers and provide positive recreational activities for the youth, decreasing their likelihood of engaging in risky sexual behavior (Baptiste, Tolou-Shams, Miller, Mcbride, & Paikoff, 2007). Conversely, when adolescents experience poor community resources, increased crime rates, and other deleterious

conditions, they are more likely to engage in delinquent behavior, and they are more likely to take greater risks sexually (Dillon, Pantin, Robbins, & Szapocznik, 2008).

Societal level factors such as socioeconomic status (SES), labor force participation, and ethnic identity have proven, in some cases, to be associated with adolescent sexual activity; while in others there was no association. For example, Ramirez-Valles et al. (1998) found that SES is significantly correlated to adolescent sexual activity; while both Tuinstra et al. (1998) and Tolan (1988) found no significant relationship between SES and risky behavior. Research surrounding other societal factors, such as behavioral differences between African American teens and Caucasian teens, has found that African American teens initiate sexual activity at an earlier age primarily because of the normative acceptance of adolescent sexual activity (Corcoran, 2000; D. R. Voisin, DiClemente, Salazar, Crosby, & Yarber, 2006).

Although there has been a significant increase in the number of research studies that apply ecological models as an approach to better understand adolescent sexual risk behavior, this is limited in populations of detained youth. After an exhaustive literature review, there has only been one other study using an ecological approach in which detained female adolescents were the subject of an assessment that considered various levels of an ecological hierarchy together (D. R. Voisin, et al., 2006). For the purposes of this research, diverse factors within each ecological domain associated with African American female adolescents at a regional youth detention center will be assessed. The overarching aim of this research is to determine the ecological predictors that remain directly related to inconsistent condom use, leading to increased acquisition of STDs, when assessed in a model together. It is hypothesized that: (1) individual level factors (a)

substance use/risky behavior including risky sex while drunk or high, sex trading, and drug and alcohol use, and (b) psychological well-being, including stress and depression, (2) relational level factors including main and casual partner, (3) familial level factors including parental monitoring, discipline, and parental communication, (4) peer level factors including gang involvement, peer norms, and affiliation with deviant peers, and (5) community level factors including crime and deviance in the neighborhood and broken windows will be independently associated with low levels of consistent condom use. It is also hypothesized that: (1) individual level factors (a) substance use/risky behavior including risky sex while drunk or high, sex trading, and drug and alcohol use, and (b) psychological well-being, including stress and depression, (2) relational level factors including main and casual partner, (3) familial level factors including parental monitoring, discipline, and parental communication, (4) peer level factors including gang involvement, peer norms, and affiliation with deviant peers, and (5) community level factors including crime and deviance in the neighborhood and broken windows will be independently associated with a positive STD status. All significant variables identified through bivariate associations will then be simultaneously assessed in a multivariable model predicting condom use, while controlling for age, SES, and incarceration specific factors.

Literature Review

Ecological Effects on Adolescent Sexual Risk Behavior

Ecological factors can either be seen as protective, lowering one's probability of participating in risky sexual behavior, or as risky, raising one's probability of participating in negative behaviors. Risk behavior has been defined as any behavior impeding and/or compromising: 1) successful adolescent development, 2) a sense of competency, 3) skill development, or 4) the acquisition of socially approved roles (Baldwin, 2000). To test this definition, Small and Luster (1994) used an ecological risk-factor approach to assess adolescent sexual activity. The sample population was ethnically diverse and consisted of 7th, 9th, and 11th graders in a Southwestern city. The variables considered were adolescent alcohol use, sexual activity, sexual and physical abuse, mental health, future aspirations, attitude towards school, parental values, family relations, and demographic information. Findings suggest that there are multiple pathways that influence the decision to become a sexually experienced teen, and that decision is more likely to be made when there is a negative, or a void in the ecological factors considered, leaving the teen no perceived reasons to postpone sexual initiation. For the female participants, alcohol use, having a boyfriend, parental monitoring, and parental values appeared to be the strongest predictors of whether or not they chose to be sexually active.

Similarly, when evaluating the effect of ecological factors such as structured time-use, interpersonal connections, and socio-demographic characteristics on adolescent risk behavior patterns, Mancini and Huebner (2004) found that in an ethnically diverse population, participation in structured time-use, attachment to parents, and attachment to

school were associated with less risk behavior. On the other hand being male and being an older adolescent directly correlated with more risk behavior. Ethnicity and socioeconomic status were found to have no bearing on risk behaviors. Still, other factors are to be considered.

A supportive network has also been shown to have great influence on the choices of adolescents. For example, Henrich et al. (2006) investigated the potential protective influences of adolescents' supportive relationships with their friends and family as it relates to changes in sexual risk behavior over time. These participants were part of a survey in the National Longitudinal Study of Adolescent Health. The survey consisted of questions concerning the adolescent's relationships with family and friends, personal sexual behaviors, and illegal behaviors such as drug and alcohol use. As specified in previous research, high levels of positive support from friends and parents were significantly associated with low sexual risk (Mancini & Huebner, 2004). Consequently, girls with strong emotional ties to parents were less likely to engage in risky sexual behaviors over time. Interestingly, more of the African American adolescents were found to be sexually active, and they were also found to engage in safer sexual practices.

Ecological Influences on Sexual Behaviors in African American Adolescents

While it is important to evaluate ecological factors in a diverse population of teens, it is equally important to assess such influences in specific at-risk groups, such as African American adolescents in general, and specifically girls involved with the JJS. As previously reported, Henrich et al. (2006) found that the African American population in their study reported safer sexual practices as other youths. While this was true for a

mixed sample, other research has looked at the ecological factors within African American female youth.

Consider Aronwitz, Rennelss, and Todd (2006) who conducted formative research to gain insight into factors related to sexuality in African American adolescent girls. Specific emphasis was placed on cultural, developmental, and familial factors. Researchers recruited African American mother-daughter dyads from community centers in inner-city New York. The relationship between the mother-daughter dyad was studied to gain insight into the effect that positive parent-child relationships would have on the adolescents' decisions regarding her choices to engage in or refrain from sexual behavior. Results indicated that mothers provided education at home through teaching moments such as the viewing of explicit material on television, including R-rated movies and music videos. Although mothers revealed watching these things with their daughters, it was found that the majority of mothers did not have a clear conversation about what was being viewed and what it meant. Additionally, daughters in the study indicated receiving more detailed sexual information from their peers, media, and within the community. Despite their attempts to effectively monitor their daughters, mothers in the study felt as though they had little control over the sexual influences their daughters may run into.

Mandara, Murray, and Bangi (2003) hypothesized that the age in which adolescents chose to engage in sexual activity was influenced by family related factors such as parental monitoring, mother's education, and family faith. Participants in their study were 15-18 year old, African American adolescents from southern California, accompanied by one of their parents. Each participant was given a questionnaire designed to evaluate various aspects of their personal and family life along with personal

risk factors, family related risk factors, and external risk factors. From the model used, results indicated that males received less parental monitoring and consequently, were less likely to be virgins; whereas females were monitored more frequently and subsequently more likely to be virgins. Interestingly, researchers also believed that the male adolescents over reported their sexual experiences; while the females under reported theirs. They concluded that family related factors were not significantly linked to risk factors.

Condom Use in Adolescents

Consistent and correct condom use continues to be a significant challenge for adolescents. For example, adolescents recruited from an STD clinic reported several condom use errors such as putting the condom on inside out, failing to leave space at the top of the condom for ejaculation, and instances of condom breakage (Weinman, Small, Buzi, & Smith, 2008)While these continue to be problems associated with condom use, when used consistently and properly, condoms are highly effective in the prevention of HIV and STDs (Prevention, 2011a). Additionally, condoms are *an* option for birth control, yet many teens practice the withdrawal method. Horner et al. (2009) sought to explore the perspectives of African-American adolescents with regards to using the withdrawal method rather than condoms. A total of 124 African American adolescents, 59 boys and 65 girls participated in semi-structured interviews. Some of the topics discussed included experiences in a current or past relationship with a romantic or sexual partner, and attitudes about and experiences with condoms. Results from the interviews indicated that withdrawal was a commonly used practice among interviewees. Many indicated withdrawal being an alternative to condom use and that a major benefit of using

this method was that it requires neither monetary cost nor advanced preparation. While this was a common theme, the findings may not generalize to other youth in a larger or more diverse (type of diversity; ethnically, economically, etc.) population. While the withdrawal method may be a commonly practiced behavior, specific risk factors present can be directly linked to whether or not a sexual partner was considered the main or casual partner.

Lescano et al. (2006) used a quantitative approach to determine the frequency of an adolescents' decision to use a condom with a main sex partner as it compared with a casual sex partner. To test their hypotheses, the research team recruited 1316 participants from primary care clinics in the cities of Atlanta, Providence, and Miami. A baseline interview was administered using audio computer-assisted self-interview (ACASI) to increase confidentiality and utilize complex skip patterns. Once having taken the survey, participants were divided into two groups based on Partner Type in the past 90 days, either Main Partner (MP) or Casual Partner (CP). Results indicated that the majority of those having a MP were female; however, 14.6% reported having more than one MP. While those in the CP group reported having sex more frequently, the number of unprotected sex acts was the same in both groups. Lescano et al. (2006) also found that the perceptions of a partner's sexual risk history was not associated with increased condom use, leading one to believe that adolescents do not tend to think about their sexual risk to a great extent.

In another study, Weinman et al. (2008) assessed factors such as parental communication, individual risk factors, as well as individual and peer beliefs as predictors of condom use among 290 female adolescents attending family planning

clinics. Each participant was given a questionnaire comprised of information gathered from various existing domains of adolescent risk behavior surveys, such as the original Safer Choices survey (Coyle et al., 1999). Risk factor variables included, but were not limited to condom use during the last sexual encounter, number of sexual encounters in the last 3 months, and personal history of STDs. The results were surprising.

Of the 290 youths, the percent that used a condom at last sexual encounter compared to those who did not was almost equivalent, 47.7% and 52.3%, respectively. Those participants who reported having friends who believed that condoms should be used even in cases where sexual partners knew each other well were seemingly influenced by this perception and consequently seen as "lower risk" individuals themselves. The same held true when the girls' use of birth control was considered. Conversely, non-condom users were more likely to believe that when sexual partners knew each other well, or when the girl was using birth control, condoms were not necessary. The study also suggested that lifetime drug use and ethnicity were both significant predictors of condom use.

Risky Sexual Behavior in Detained Adolescents

Statistics regarding incidences of contracting STDs in adolescents is at an all-time high; however, those numbers are increasingly alarming when the scope is narrowed to those within the JJS. As previously stated, 2009 data indicated that incarcerated adolescent females had positive tests for gonorrhea ranging from 5.1% to 23.4%, while the results for chlamydia ranged from 9.5% to 32.5% (Belenko, et al., 2009). These youth face the pressures of all adolescents; however they also endure added influences from their new or current environment, as well as coming face to face with their individual

choices. Special interest should be placed on this high risk group because the JJS is not fully equipped to systematically treat, and provide preventive healthcare to these youth. This introduces an added set of problems that must be dealt with at some point.

Schlapman and Cass (2000) acknowledged the extreme risk of HIV in the incarcerated male and female youth population in Indiana. Being one of a handful of interventions targeting this high risk population, Schlapman and Cass (2000) used The AIDS Risk Reduction Model (ARRM) to serve as a guide to assess incarcerated youth both before and after the project. A questionnaire was developed from the ARRM in order to assess pre and post educational session changes with regards to HIV and STD knowledge. The intervention was based on the Safe Choices Guide provided by the National Network of Runaway and Youth Services (1994) which builds on the assumption that peer education groups yield greater success than one-on-one interventions (National Network of Runaway and Youth Services, 1994). Significant results emerged after assessing participants' recognition of risky behaviors. Upon completion of the intervention, knowledge about STD and HIV/AIDS transmission along with one's own condom use behavior increased significantly; $p=.029$ and $p=.025$ respectfully. On the contrary, participants' intent to discontinue risky sexual behaviors did not change significantly. While knowledge aspects increased, several weaknesses emerged including weaknesses in the project design and measurement tools (Schlapman & Cass, 2000). Because the majority of participants were White, these results may not generalize to African American incarcerated youth.

In a qualitative study conducted by Freedman et al. (2005), she assessed environmental barriers to HIV prevention among incarcerated adolescents at three

Regional Youth Detention Centers (RYDCs) in Georgia. Researchers stratified participants by gender and conducted six focus groups consisting of 3 to 7 adolescents. The focus of the research was to determine how environments such as school, family, church, neighborhood, and the media influenced their STD/HIV risk behavior. Results indicated a need to provide abstinence and risk reduction messages geared toward adolescents, regardless of prior sexual experience. With regards to condom use discussions, adolescents indicated that peer norms hinder or facilitate their desire to use a condom. For example, it was noted that many of their peers believed condoms were only useful in pregnancy prevention and that condoms take away from the pleasure of sex resulting in their inconsistent condom use.

Overall, the salient environments influencing these adjudicated youth were schools, families, peer groups, and detention centers, with each environment representing places in which sexual decision making occur. Much of the findings of this qualitative study are consistent with prior research; however, little has been done in regards to intervention efforts to address these environmental level factors (Freedman et al. 2005). Individual, peer, and family variables associated with risky behavior in incarcerated adolescents were assessed by Mosack et al. (2007). A total of 1008 male and female adolescents incarcerated in Virginia juvenile correctional facilities were sampled. By using the Youth Self-Report Inventory (Achenbach & Edelbrock, 1987), Mosack et al. were able to assess internalizing and externalizing behaviors. This included questions regarding feelings of worthlessness and associations with deviant peers. After controlling for age it was found that externalizing behaviors ($p<.01$), social problems ($p<.01$), perceived family support ($p=.03$), and family structure ($p<.01$) predicted the number of

sexual partners. Overall differences also arose from the analyses. Boys appeared to be more affected by family relationships, family structure, and peer relationships with regards to their risky sexual behaviors while girls appeared to be more influenced by peer-related factors than family factors.

Voisin et al. (2006) hypothesized that risky sexual behaviors increased as a direct result of negative individual experiences, peer influences, community associations, and other societal variables. Specifically, it was hypothesized that (1) increased risk-taking attitudes, (2) higher rates of mood and behavioral disorders, (3) greater substance abuse, (4) decreased parental monitoring, (5) lower levels of perceived familial support, (6) gender roles favoring male dominance, (7) stronger peer norms supporting sexual risks, (8) lower student-teacher connectedness, (9) increased exposure to community violence, and (10) increased exposure to X-rated videos would all significantly predict risky sexual behaviors.

The participants in the study by Voisin et al. (2006) consisted of 280 detained female adolescents ages 14-18, who were recruited from 8 youth detention centers in Georgia. The majority of these participants were white (40.9%) while 37.8% were black. The ACASI system was utilized to administer a cross-sectional questionnaire. Multiple regression analyses identified seven of the 10 variables as having significant main effects on increased risky sexual behaviors. When assessed together, the 7 factor model accounted for 51% of the overall variance specifically suggesting that proximal factors (peer, family, and teachers) and societal factors such as gender norms in support of male dominance were directly related to STD risk behaviors among the sexually active

detained adolescent females in this study. Results also strongly suggested that while peer effects were significant, those factors did not displace influences from family.

Summary

Adolescence is a period of life in which one is dealing with tremendous influences from parents, peers, the community, and various other things. Because of this, the sexual health of an adolescent can be at risk. In addition to the pressures adolescence may bring, youth who are involved in the JJS may have even more difficulty making healthy sexual choices. While previous research on the general population has indicated the protective factors of parents, research conducted on detained youth has found the influence from peers to be exceptionally strong for females. Particularly, when peer norms are in support of risky sexual behavior, the more likely one is to not follow safe sexual practices consistently. Consequently, detained African American female adolescents may require the help of additional positive influences in order to reduce the sexual health risks so common to their population.

Methods

This cross-sectional study is part of a larger longitudinal study called Imara (Adapting *SiHLE* for Detained African American Adolescent Females), a study utilizing intervention as a method of reducing the risk of HIV and other sexually transmitted diseases (STDs) in recently detained African American adolescent females ages 13-17 in a large urban city in the Southeastern United States. The purpose of the parent study was to evaluate an HIV prevention program among teen girls.

Participants

Study participants were from the baseline assessment of Imara (N=145). Females were African American, unmarried, 13-17 years of age, and were currently detained at a youth detention center in the greater metropolitan area.

Recruitment and Sample Size

A trained African American female recruiter approached female adolescents as a group and shared general information about the program. Program information was given to all incoming female youth at the detention center on a weekly basis. Those who expressed an interest in participating were asked to provide verbal consent to be screened for eligibility. Once eligibility requirements were met, the recruiter collected contact information, discussed assent, Health Insurance Privacy and Portability Act (HIPAA), authorization for release of baseline STD information upon entering the detention center, and revocation of authorization forms. At the completion of this step the recruiter then contacted the parent/guardian of eligible participants to obtain verbal parental consent. Overall, 269 African American female adolescents were screened for eligibility. Of

these, 195 met eligibility criteria, which included: a) female; b) identifying as being Black or African American; c) between the ages of 13-17; d) housed at a metropolitan youth detention center for a 2 week minimum stay and maximum stay of three months; e) housed at a long term youth detention center with a release date within one month of workshop completion; f) not pregnant; g) not trying to get pregnant in the next 6 months; h) unmarried; i) reporting having had vaginal sex with a male. Of the 195 eligible females, 145 agreed to participate along with receiving parental/guardian consent to participate. Enrolled participants then completed a condom skills assessment and baseline assessments through an audio computer-assisted self-interview (ACASI) survey. Their baseline STD tests were obtained from medical staff at the detention center. Participants were then randomized into one of two study conditions. The Emory University Institutional Review Board approved all study procedures prior to implementation.

Current Analysis

The current analysis is cross-sectional, using baseline data collected prior to randomization to trial conditions. Specifically, it was hypothesized that: (1) individual level factors related to (a) substance use/risky behavior including risky sex while drunk or high, sex trade, and drug and alcohol use and (b) psychological well-being including stress and depression, (2) relational level factors including main and casual partner, (3) familial level factors including parental monitoring, discipline, and parental communication, (4) peer level factors including gang involvement, peer norms, and affiliation with deviant peers, and (5) community level factors including crime and deviance in the neighborhood and broken windows will be independently associated with low levels of consistent condom use. All significant variables identified through

bivariate associations were simultaneously assessed in a multivariable model predicting condom use, while controlling for age, SES, and incarceration specific factors.

Measures

Measures included in the baseline ACASI assessment related to participants' social networks, spiritual beliefs, condom attitudes, ethnic pride, self-esteem, depression, abstinence beliefs, HIV/STD knowledge, abuse history, partner relationships, condom use history, STD history, drug and alcohol use, etc. as well as demographics. For this analysis, only measures assessing demographics and variables assessing ecological factors such as individual, relational, familial, community, and societal factors will be used.

Individual Behaviors Related to Risky Sexual Behavior

Risky Sex (drugs and alcohol)

Participants completed 2 items measuring the number of times they had sex while high on alcohol or drugs. Answer options ranged from 0-96 with higher numbers indicating a greater frequency of sexual activity while high on alcohol or drugs. For example, participants were asked, "In the past 90 days, how many times did you have sex while high on alcohol?"

Risky Partners and Sex Trading

The risky partners and sex trading questions are two self-developed items that are not intended to be combined into a single scale score. Rather, all values are analyzed as single items. These questions include, "In the past 90 days, have you had vaginal sex

with a guy who you know has just been released from a jail, prison, or detention center?" and "In the past 90 days have you exchanged or traded vaginal, anal, or oral sex for drugs, money, food, or a place to stay?" Response options were 0=No and 1=Yes.

Psychological Well-Being

Depression

Respondents' depressive symptoms were measured with the 8-item Center for Epidemiological Studies-Depression scale. The CES-D assesses the presence of depressive symptoms in the past 7 days (Melchior, Huba, Brown, Reback, 1993). (Cronbach's alpha = 0.91). For this scale, reverse scoring was done for items 4 and 8 (e.g. 0 counts as 3; 2 counts as 1). Scores were added to obtain a total score. A score of 16 or higher serves to classify persons as having "depressive symptoms" validated with the DSM-IV criteria for clinical depression.

Stress

A 13-item modified scale from Watts-Jones (1990) African American Women's Stress Scale was used to measure perceived interpersonal stress. Questions assessed the amount of stress an individual felt in various interpersonal relationships. Scores were on a 6 point Likert scale where 0=does not apply and 5=Extreme stress. Scores were added to obtain a total score. Higher scores indicate higher levels of stress. (Cronbach's alpha = 0.87).

Relational

Partner Information

Partner information on both boyfriend (Main Partner) and casual partners was collected. These were self-developed measures that were used in previous research projects. The first question asks “Do you have a boyfriend/main partner”. Responses are coded where 0=No and 1=Yes. Another question asks, “During your relationship with your boyfriend, has he had vaginal sex with another woman?” Responses were coded where 0=No and 1=Yes. Similar questions were asked about the casual partner. For example, participants were asked, “Do you currently have a casual sex partner(s)”. Answer options were 0=No and 1=Yes. Another example question was, “Since you started having sex with your casual partner, do you think he had vaginal sex with another woman?” Responses were 0=No, 1=Yes.

Familial

Parental Monitoring

Parental monitoring was measured by using a modified scale taken from the Supervision/Involvement Scale of the Pittsburgh Youth Study (Loeber, et al., 1998). Parental monitoring has been defined as the supervision and communication between parents and youth (Kerr & Stattin, 2000). It is illustrated by the questions, “When you are away from home and not at school or work, does this person know where you are?” Higher scores indicate a higher level of parental monitoring. The item was measured on a 5-point Likert scale where 1=Never or almost never and 5=Almost always. (Cronbach’s alpha=0.83

Parental Discipline

Parental discipline is an 8-item, self-developed scale assessing the type of discipline participants receive from their parents/guardians. Sample items include: "When you have done something wrong, how often does this person yell or scream at you?" and "When you have done something wrong, how often does this person discuss with you why what you did was wrong?" Answer options were on a 4-point Likert-type scale: 1 (Usually) to 4 (Never). Higher scores indicate lower rates of parental discipline. (Chronbach's alpha=0.43)

Parental Communication

This is a 5-item, self-developed scale assessing the frequency in which adolescents communicate about sex-related topics with their parents. The stem for all items was: "In the last 90 days, how often have you and your parent(s) talked about the following things?" Sample items were: "sex, and "protecting yourself from STDs". This scale was modified from Sales et al. (2008) with each item required a response based on a 5-point Likert-type scale: 1(never) to 4 (often). Higher values indicated more frequent parent-adolescent communication. (Chronbach's alpha=0.87)

Peers

Peer Norms

Peer norms were assessed using a self-developed scale that measures the views of peers with regards to sexual behavior and sexual norms. Some of the questions were: "How many of your friends do you think are having sex?" and "Of your friends who are

having sex, how many do you think use condoms all the time?" Possible scores ranged from 8-40 with higher scores indicating greater perceived peer norms supporting risky sexual behavior. (Cronbach's alpha = 0.61)

Affiliation with Deviant Peers

This is a self-developed scale assessing participants' number of deviant affiliations. This is a 17-item scale with response options on a four-point Likert scale ranging from none of them (0) to all of them (3). Higher scores indicate greater affiliations with deviant peers. Some of the questions were: "How many of your friends purposely damaged or destroyed property that does not belong to them?" (Chronbach's alpha=0.92)

Gang Involvement

Gang involvement assessed whether or not participants have any type of gang involvement, whether it is individual, peer, or a family member. Scores are not summed together but are assessed as individual items. Example questions include, "Is there a gang in your neighborhood?" and "Have you ever been a member of a gang?" Responses were coded where 0=No and 1=Yes. (Chronbach's alpha=0.78)

Community

Community quality

Community quality was assessed by one item from Cohen, et al. (2000) designed to measure the neighborhood surroundings in which a person lives. The questions asks, "On your street, are there any of the following?" Participants then indicate whether or not

there are any abandoned homes or apartments, buildings with broken windows, and/or homes with bars on the windows and doors. Answer options range from 0-3 where 3 means a neighborhood has all three characteristics indicating poorer neighborhood quality.

Crime and Deviance Neighborhood

The neighborhood crime and deviance scale assesses the levels of crime and deviance surrounding participants' homes. This is an 11-item scale with questions such as, "During the past 6 months, how often was there drinking in public in your neighborhood?" and "During the past year in the neighborhood surrounding your house, how often was there a robbery or mugging?" Responses were on a 3-point Likert scale where 1=Often and 3=Never. (Chronbach's alpha=0.87)

Outcome Variables

Condom Use

Participants were asked a series of questions pertaining to their sexual behavior in the previous 90 days. Example questions included, "In the past 90 days, how many times have you had vaginal sex?" and "Out of the xxx times you've had vaginal sex in the past 90 days, how many times did you use a condom?"

STD Status

STD was assessed by obtaining the baseline test results from the detention center. Participants were tested for both gonorrhea and chlamydia. This information was biologically gathered through a self-collected vaginal swab obtained by the nursing staff

at the RYDC. These test results were then released to the research program and uploaded into the database. Those testing negative = 0, and those who tested positive for one or both STDs = 1.

Control Variables

Incarceration History

These variables identified the total number of days a participant had been in a detention center, including their current offense. To measure this, participants were asked, "Counting all the times you have been in a detention center, what is the total number of days you have spent being locked up?"

Labor Force Participation

The economic impact on a participant was measured through their participation in the labor force. Some questions ask about aid received from governmental entities while others asked about the main source of money the participant received. "In the past 12 months, did you or anyone you live with receive any money or services from any of the following?" Respondents chose between food stamps, WIC, Section 8 housing, and not receiving any financial aid from governmental entities. Responses ranged from 0-4 where 4 indicated a participant received all types of financial aid.

Age

Age was assessed by asking the participants their age. Responses ranged from 13-17 years of age.

Data Analysis

For the purposes of measuring variables through an ecological framework, an index was created for each factor: (1) individual level factors (2) relational level factors (3) familial level factors (4) peer level factors and (5) community level factors. First, individual level factors were broken down into two categories (a) those relating to behaviors, and (b) those relating to psychological well-being.

For the purposes of individual factors relating to behaviors, the variables risky sex (drugs and alcohol), sex with risky partner and sex trading were combined. When creating a total score for the risky sex (drugs and alcohol) variable, only those pertaining to risky behavior within the previous 90 days were summed together. For the purposes of the analysis the single question for having sex while high on drugs was dichotomized so that 0=zero times (no risk) and 1=one or more times (risk). Similarly, the single question for having sex while high on drugs was dichotomized so that 0=zero times (no risk) and 1=one or more times (risk). These variables were then combined with the single item "sex with someone just released from jail or prison" and the "sex trading" question to create the individual risk behavior index.

To create an individual level factor index related to psychological well-being, stress and depression scores were used. For depression, a median split was conducted where 0=low levels of depression (0-15) and 1=high level of depression (16 and higher). For the stress scale, answers were summed to create a total stress score where higher scores equaled higher levels of stress. A median split was then conducted where 0=low

levels of stress and 1=high levels of depression. These new variables were then combined to create the individual psychological well-being index.

The relational factor index was comprised of questions pertaining to whether or not their boyfriend had vaginal sex with another woman while in the relationship and whether or not their casual partner had vaginal sex with another woman while in the relationship. Both questions were dichotomized where 0 = No and 1= Yes. These scores were then combined to create the relational level factor index.

For the purposes of creating a familial factor index, parental monitoring, parental communication, and parental discipline were included. All parental monitoring items were summed together to obtain a total parental monitoring score where higher scores equal higher levels of monitoring. Similarly, all parental communication and parental discipline items were summed to create total parental communication and total parental discipline scores. For each of the three scales, a median split was conducted so that 0=high levels of parental monitoring, high levels of discipline, and high levels of communication while 1=low levels of parental monitoring, low levels of discipline, and low levels of communication. These items were then combined in order to create a familial factor index. Variables were coded in this way because high levels of communication, discipline, and monitoring are seen as protective factors while low levels of these items are seen as risk factors. In order to remain consistent with the other indices created, risk factors are coded with a one.

To create a peer factor index, peer norms, affiliation with deviant peers, and gang involvement were combined. Items 2 and 8 were reverse coded for the peer norm scale.

Once the reverse coding was complete all items in the peer norms scale were summed to obtain a total peer norm score where higher scores indicate higher peer norms in favor of risky sexual behavior. After obtaining a total score, a median split was created so that 0=low peer norms in favor of risky sexual behavior and 1=high peer norms in favor of risky sexual behavior. Similar procedures were taken for the affiliation with deviant peers and gang involvement variables. A total affiliation with deviant peers was obtained and a median split was created so that 0=low affiliation with deviant peers and 1=high affiliation with deviant peers. A total gang involvement score was obtained and a median split was created so that 0=low levels of gang involvement and 1=high levels of gang involvement. After creating the median split variables for peer norms, affiliation with deviant peers, and gang involvement, the variables were combined to create the peer factor index.

The community factor index was created by combining the broken windows variable and the total crime and deviance in one's neighborhood variable. A median split was created for the broken windows variable so that 0=richer neighborhood quality and 1=poorer neighborhood quality. A total score for the level of crime and deviance in one's neighborhood was obtained where higher scores indicated higher levels of crime and deviance. A median split was created so that 0=low levels of crime and deviance in one's neighborhood and 1=high levels of crime and deviance in one's neighborhood. These two new variables with the median split were then combined to create the community factor index.

After creating the ecological factor indexes, univariate analyses were used to describe the entire sample. Subsequent bivariate analyses using independent samples T-

tests were used to assess the strength and direction of the bivariate relationships among all independent predictors. Multicolinearity was assessed among independent variables. All domains associated with the outcome variables, inconsistent condom use and STD status, at $p<.20$ were included in multivariate logistic regression analysis. The outcome variables were condom use and STD status. All analyses were conducted while controlling for age, SES, and incarceration history.

Results

Description of Sample

A total of 145 participants took part in the baseline survey with the average age being 15.22 (sd=1.02). Primarily, 59.3% of those surveyed had completed 9th or 10th grade. The majority of those surveyed lived with their mother (n=70, 48.3%) and only 15.9% lived with both mother and father in the household (n=23). Although the majority of those caregivers did not have a job (n=76, 52.4%), nearly 70% (n=100) received some form of money or services from Section 8 housing, WIC, food stamps, or welfare. Those surveyed had been at the detention center for their current violation an average of 15.97 (sd=16.06) days and the majority of participants had not been incarcerated prior to their current stay at the facility (n=46, 31.7%). Interestingly, the range of previous incarcerations was from 0-10. A further description of participants' sexual behaviors and predictor variables can be seen in Tables 1 and 2.

Table 1. Characteristics of sexual behaviors

	Mean (sd)	N (%)
Lifetime partners	11.25 (42.52)	
Sex times in past 90 days	10.87 (13.97)	
Anal sex		
Yes		24 (16.60)
No		121 (83.40)
Age	14.04 (1.43)	
Oral sex		
Yes		73 (50.30)
No		72 (49.70)
Age	14.00 (1.49)	
STD History		
Prior positive test		68 (46.9)
Prior negative test		77 (53.1)
Age of first sex	13.51 (1.38)	
Condom at last sex		
Yes		84 (57.9)
No		61 (42.1)
Safety of current behavior to avoid STDs		
Very Safe		55 (37.9)
Safe		38 (26.2)
Unsure		23 (15.9)
Not very safe		22 (15.2)
Not safe at all		7 (4.8)

Table 2. Description of predictor variables

	Index Range	Mean (sd)	N (%)
Individual Risky Sex	0 - 4		
Sex while high on alcohol		1.73 (5.05)	
Zero times (no risk)			90 (62.1)
One or more times (risk)			55 (37.9)
Sex while high on drugs		2.58 (6.56)	
Zero times (no risk)			81 (55.9)
One or more times (risk)			64 (44.1)
Sex with someone released from jail			
Yes			32 (22.1)
No			113 (77.9)
Sex in exchange for money, food, etc.			
Yes			12 (8.3)
No			133 (91.7)
Psychological well-being	0 – 2		
Depression		19.28 (6.88)	
Low			44 (30.3)
High			101 (69.7)
Stress		30.61 (15.91)	
Low			73 (50.3)
High			72 (49.7)
Relational	0 – 2		
Boyfriend (sex with another woman)			
Yes			45 (42.1)
No			62 (57.9)
Casual Partner (sex with another woman)			
Yes			43 (71.7)
No			17 (28.3)
Familial	0 – 3		
Parental Monitoring		4.97 (2.20)	
Low			76 (52.4)
High			69 (47.6)
Parental Discipline		17.13 (3.56)	
Low			69 (47.6)
High			76 (52.4)
Parental Communication		16.22 (6.12)	
Low			73 (50.3)
High			72 (49.7)
Peer	0 - 3		
Peer norms		20.43 (5.16)	
Low			70 (49.0)
High			73 (51.0)
Affiliation with Deviant Peers		19.05 (10.75)	
Low			71 (51.8)
High			66 (48.2)
Gang Involvement		3.93 (2.03)	
Low			62 (54.9)
High			51 (45.1)
Community	1 - 2		
Crime and deviance (neighborhood)		18.01 (5.36)	
Low			75 (51.7)
High			70 (48.3)
Broken Windows			
No			80 (55.2)
Yes			65 (44.8)

Description of Outcome Variables

Of the 145 participants, nearly 60% (n=71) reported using condoms inconsistently. In this sample, 41 (28.3%) participants tested positive for Chlamydia and 12 (8.3%) tested positive for Gonorrhea. Overall, a larger portion of the sample tested positive for one or more STDs at baseline (N=47, 32.4%).

Bivariate Associations

Independent t-tests were conducted between all proposed predictor variables and both outcome variables. When condom use was the outcome, "individual risky sex behaviors with drugs and alcohol", "psychological well-being", and "peer level factors" were associated with condom use at $p<.20$ and were therefore included in the multivariate logistic regression model. The variables, "familial factors", "relational factors", and "community level factors" were excluded from the model. This can be seen in Table 3.

Table 3. Bivariate Associations Condom Use

	Consistent Users (N= 49) Mean (sd)	Inconsistent Users (N= 71) Mean (sd)	P-value
Control Variables			
Age	15.16 (1.05)	15.18 (1.02)	0.918
Days at detention center	14.57 (12.43)	14.48 (14.23)	0.971
Family Aid (SES)	1.18 (0.86)	1.00 (0.94)	0.278
Predictor Variables			
Individual	0.73 (0.95)	1.07 (1.22)	0.109*
Relational	1.00 (0.64)	1.25 (0.79)	0.257
Familial	1.47 (0.89)	1.49 (0.83)	0.882
Psychological well-being	0.98 (0.83)	1.44 (0.67)	0.001*
Peer	0.91 (1.03)	1.77 (0.94)	0.000*
Community	2.04 (1.17)	1.94 (0.94)	0.630

Note: * Significant finding

When STD status was the outcome, “relational factors” and “peer level factors” were associated with the outcome variable at $p<.20$ and were therefore included in the multivariate regression model. Results are presented in Table 4. The variables, “individual risky behaviors with drugs and alcohol”, “psychological well-being”, “familial factors” and “community factors” were excluded from the model.

Table 4. Bivariate Associations STD Status

	No STDs (N= 98) Mean (sd)	One or more STDs (N= 47) Mean (sd)	P-value
Control Variables			
Age	15.23 (0.99)	15.19 (1.08)	0.812
Days at detention center	17.07 (18.13)	13.66 (10.34)	0.153
Family Aid (SES)	1.05 (0.93)	1.08 (0.90)	0.836
Predictor Variables			
Individual	1.10 (1.10)	1.17 (1.15)	0.731
Relational	1.25 (0.72)	0.93 (0.79)	0.181*
Familial	1.46 (0.83)	1.60 (0.90)	0.368
Psychological well-being	1.14 (0.77)	1.29 (0.77)	0.261
Peer	1.23 (1.04)	1.81 (1.07)	0.008*
Community	1.92 (1.02)	2.06 (1.05)	0.428

Note: * Significant finding

Multivariate Logistic Regression

Condom Use

Multivariate logistic regression was performed using the psychological well-being and the peer factor indices as the predictor variables in the model, controlling for age, SES and number of days incarcerated for their current violation.. Results suggest that for each unit increase in a poorer psychological state, the odds of using a condom inconsistently increased by 2.308 (AOR=2.308; p=.024; CI=1.12 – 4.77). . For each unit increase in peer level factors, the odds of using a condom inconsistently increased by 2.500 (AOR=2.500; p=.003; CI=1.38 – 4.54). Results are presented in Table 5.

In order to explore the independent associations between each variable comprising the psychological well-being index, another multivariate logistic regression was conducted

with stress and depressive symptoms entered as separate variables in the model rather than as an index score. Those with high stress were 3.10 times more likely to report inconsistent condom use than those with low stress levels (AOR=3.10; p=.007; CI=1.37 – 7.05). Depression was not significantly related to inconsistent condom use (p=.155). Results are seen in Table 6. Similarly, in order to explore the independent associations between each variable comprising the peer factor index, another multivariate logistic regression was conducted with peer norms supporting risky sexual behavior, affiliation with deviant peers, and gang involvement all entered as separate variables in the model rather than as an index score. Results suggest that those with high levels of peer norms in support of risky sexual behavior were 8.02 times more likely to report inconsistent condom use than those with low levels of peer norms in support of risky sexual behavior (AOR=8.02; p=.000; CI=2.60 – 24.73). Affiliation with deviant peers (p=.132) and gang involvement (p=.783) did not significantly predict inconsistent condom use. Results are seen in Table 6.

Table 5. Multivariate logistic regressions to assess associations between ecological factors and condom use and STD status.

	β	Adjusted OR	95% CI	P value
Outcome: Condom Use				
Predictors:				
Individual Behaviors Risky Sex	-0.16	0.86	0.48 – 1.52	0.59
Psychological Well-Being	0.84	2.31	1.12 – 4.77	0.02*
Peer Influences	0.92	2.50	1.38 – 4.54	0.003*
Outcome: STD Status				
Predictors:				
Relational Factors	-1.19	0.31	0.06 – 1.62	0.16
Peer Influences	2.76	15.87	1.53 – 165.17	0.02*

Note: * Significant finding

Table 6. Further analyses of regression models.

	β	Adjusted OR	95% CI	P value
	Outcome: Condom Use			
Predictors:				
Psychological Well-Being				
Depression	.657	1.93	0.78 – 4.77	.155
Stress	1.33	3.10	1.37 – 7.05	0.007*
Peer Influences				
Peer Norms	2.08	8.02	2.60 – 24.73	0.000*
Affiliation with Deviant	0.88	2.40	0.77 – 7.51	0.13
Gang Involvement	0.16	1.18	0.37 – 3.75	0.78
	Outcome: STD Status			
Predictors:				
Peer Influences				
Peer Norms	0.54	0.58	0.23 – 1.49	0.26
Affiliation with Deviant	-0.49	1.62	0.59 – 4.46	0.35
Gang Involvement	1.71	0.18	0.07 – 0.49	0.001*

Note: * Significant finding

STD Status

Multivariate logistic regression was performed using the peer factor index. Results suggest that for each unit increase in peer level factors, the odds of having one or more STDs increased by 15.871 (AOR=15.871; p=.021; CI=1.53 – 165.17). The relational factor index did not significantly predict having one or more STDs (p=.164). Results are seen in Table 5. When the variables constituting peer level factors are entered separately into a multivariate logistic regression results suggest that for those with high levels of gang affiliation the odds of having one or more STDs increased by 0.18 (AOR=0.18; p=.001; CI=0.07 – 0.49). Peer norms supporting risky sexual behavior (p=.260) and affiliation with deviant peers (p=.346) did not significantly predict having one or more STDs. Results are seen in Table 6.

Discussion

While this research sought to determine which, of a number of factors were significantly related to the practice of risky sexual behavior among the subjects of this study, the resulting conclusions revealed a much narrower sphere of association. Specifically, the majority of the analyses found that peer factors acted as a significant correlate for both inconsistent condom use and a positive STD test result, in detained African American female adolescents. The more negative peer influences one had, the more likely they were to use condoms inconsistently. To this end, an increase in peer norms supporting risky sexual behavior was found to be the primary predictor of the likelihood of inconsistent condom use. This finding is supported by previous research that has identified an association between inconsistent condom use and peer norms supporting risky sexual behavior (Crosby, et al., 2000; DiClemente, et al., 2001). In a similar way, heightened levels of negative peer influences were associated with a positive STD test result. These findings are also supported by previous research conducted by Voisin et al., (2006) in which negative peer factors were directly related to STD risk behaviors in detained female adolescents.

Poor psychological well-being was also associated with inconsistent condom use. While there is not much research supporting the index, this research found that when psychological well-being was separated into its components, stress and depression; results were not significant in predicting condom use when assessed in the same model. This finding is consistent with other research results in which psychological problems related to stress and depression did not predict condom use (Udell, Donenberg, & Emerson, 2011; D. R. Voisin, et al., 2006). Although stress and depression did not

predict condom use when assessed in the model together, it is important to note that this could be because of the relationship between the two variables. Both have similar behavioral symptoms such as loss of appetite, disturbances in sleep patterns, and crying spells. This would then lead one to believe that these results merit further examination with this particular population.

Although relational factors did not predict STD status, the index was shown to be associated with the outcome. This demonstrates the importance of an adolescent's perception of their boyfriend and/or casual partner and their association with risk behavior. These findings are supported by others who have found that relational factors, specifically, instances where a partner sleeps with one or more individuals outside the actual or perceived "relationship", does predict the likelihood of testing positive for an STD (Lescano, et al., 2006).

Family level influences were not found to be associated with condom use or STD status in the study group used. There could be various reasons for this. First, the participants in this study primarily lived with only their mother only. This could potentially be harmful if the single parent works long hours that keep them away from the home. Those long work hours could lower their level of parental monitoring allowing more time for the adolescent to engage in risky behaviors. While this has been similar to other detained youth samples which found a positive association between parenting and risk-taking (Mosack, Gore-Felton, Chartier, & McGarvey, 2007; D. R. Voisin, et al., 2006), the sample size of this particular study was small, parental factors were not thoroughly assessed, and we only assessed the family environment of detained African American female youth. Second, many of the participants may have been in and out of

situations in which their living situation may have changed. For example, some may have been in and out of various group homes, in custody of the Department of Family and Child Services (DFCS), or find themselves living with different family members. While this could explain why family factors were not significant for the population in this research, there are a number of earlier studies which suggest that the positive influence of family on adolescents, in general, does indeed contribute to their choice to either engage in or refrain from risky sexual activity (Mandara, Murray, & Bangi, 2003). On the other hand, there is also a great deal of research with findings contrary to the those showing a protective benefit of family factors. In the cases where it was determined that familial relationships were positive, it was generally attributed to higher levels of parental monitoring, higher levels of parental communication, and higher levels of parental discipline, all of which were considered protective factors (Henrich, Brookmeyer, Shrier, & Shahar, 2006; Mancini & Huebner, 2004). This can be contrasted with research conducted by Mosack et al. (2007) in which results indicated that *detained* adolescent females were more influenced by peers rather than parents.

Limitations

The current study is not without limitations. Given the cross-sectional design, causation cannot be inferred nor can the results assess any changes or fluctuations in the ecological factors over time. However, this study is part of a longitudinal study that could explore these changes over a period of time. Additionally, many of the variables may be interrelated such as those relating to stress and depression. Due to the small sample size, the precision of the observed associations were also limited.

Furthermore, the study was limited by the validity of the self-reported measures of risk behavior and demographic information. Findings may also be limited by the possibility of response bias and the need to obtain verbal parental consent. Because of this convenience sample of detained African American adolescents who are sexually active, results cannot be generalizable. Despite these limitations, these findings have significant implications for future STD prevention programs.

Implications and Recommendations

Several implications result from the findings of this study. First, it appears as though peer level factors play more of a significant role in the sexual risk behavior of detained African American female adolescents as opposed to familial factors. Therefore, incorporating peer level components in future HIV prevention interventions may have a positive impact on healthy sexual behaviors, thus reducing the risk of HIV and other STDs. This could include components that focus on how to balance pressures between influences from peers and their surrounding environment. Second, these findings suggest that subsequent studies should examine the relationship between stress, depression, and risky sexual behaviors. Future research should also include larger sample sizes to further understand the relationships of the ecological factors included in this study. Additionally, it would be beneficial to include multiple sites for data collection and to conduct longitudinal studies to examine how ecological influences change over time. Third, because of the high levels of inconsistent condom use and positive STD test results at baseline, female adolescents who are involved with the JJS are desperately in need of an HIV prevention intervention specifically tailored to them in order to promote better decision making and curb future HIV and STD infections when they are released.

Conclusion

The work of this research would suggest that ecological factors have a significant impact on the lives of adolescents. When these factors are negative such as higher levels of peer norms in support of risky sexual behavior, they are more likely to have a negative effect on the sexual health of adolescent females. We have all heard it said that, "You are what you eat!" or "You become what you behold!" This is true for the environment in which many adolescents find themselves. Some manage to escape the negative influences that may be stacked against them, while others are saddled with the baggage that comes as a result of ecological factors that have worked against them. When these factors negatively impact an individual's life, the result is behavior that appears not to even consider their actions, reactions, and responses as *risks*. And so, a pattern of risky behavior is birthed, and likely nurtured as that individual matriculates through life. These ecological factors and their significance as elements of influence in the decision-making process of adolescents and in particular those in the Juvenile Justice System (JJS), were the focus of this investigation. The consequence of this association between JJS and the adolescent's environment is the development of a mindset that may give very little, if any, thought to engaging in risky behavior that produces cases of STDs because of inconsistent use of condoms.

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Appendix

A. Individual Behaviors (Risky Sex, Drugs and Alcohol)

Risky Sex (Drugs and Alcohol)
Continuous
In the past 90 days, how many times did you have sex while high on alcohol?
In the past 90 days, how many times did you have sex while high on drugs?

Risky Partner
Dichotomous (Yes/No)
In the past 90 days, have you had vaginal sex with a guy who you know has just been released from a jail, prison, or detention center?

Sex Trade
Dichotomous (Yes/No)
In the past 90 days, have you exchanged or traded vaginal, anal or oral sex for drugs, money, food, or a place to stay?

B. Psychological Well-Being

Depression

Responses are measured on a 5-point Likert scale where 1=Less than a day and 5=5-7 days

I felt that I could not shake off the blues even with help from my family and friends.
I felt depressed.
I thought my life had been a failure.
I felt fearful.
My sleep was restless.
I felt lonely.
I had crying spells.
I felt sad.

Stress

Responses are measured on a 6-point Likert scale where 0=Does Not Apply and 5=Extreme Stress

Racism and discrimination.
Relationships with family members.
Raising children.
Being in a relationship.
Not being in a relationship.
Limited support from partner
Partner not being faithful to me
Family interference with my relationship(s)
Feeling isolated from family
Financial troubles or lack of money
Family judgment of my lifestyle
Personal health
Allowing others to treat me poorly
I would rate my overall stress level as:

C. Familial Factors

Parental Monitoring

Responses are measured on a 5-point Likert scale where 1=Never and 5=Almost always.

When you are away from home and not at school or work, does this person know where you are?

When you are away from home and not at school or work, does this person know where you are?

Parental Discipline

Responses are measured on a 4-point Likert scale where 1=Usually and 4=Never

When you have done something wrong, how often does this person yell or scream at you?

When you have done something wrong, how often does this person ground you or restrict your privileges?

When you have done something wrong, how often does this person discuss with you why what you did was wrong?

When you have done something wrong, how often does this person stop talking to you?

When you have done something wrong, how often does this person threaten to throw you out of the house?

When you have done something wrong, how often does this person not do anything (you don't get punished)?

When you have done something wrong, how often does this person discuss what you should have done?

Parental Communication

Responses are measured on a 5-point Likert scale where 1=Never and 5=Always

In the last 90 days, how often have you and your parent(s) talked about sex? (Choose one)

In the last 90 days, how often have you and your parent(s) talked about how to use a condom?

In the last 90 days, how often have you and your parent(s) talked about how to protect yourself from Sexually Transmitted

In the last 90 days, how often have you and your parent(s) talked about protecting yourself from the HIV virus?

In the last 90 days, how often have you and your parent(s) talked about protecting yourself from becoming pregnant?

D. Relational Factors

Boyfriend

Dichotomous (Yes/No)

During your relationship with your boyfriend, has he had vaginal sex with another woman?

Casual Partner

Dichotomous (Yes/No)

Since you started having sex with your casual sex partner, do you think he had vaginal sex with another woman?

E. Peer Factors

Peer Norms
Responses are measured on a 5-point Likert scale where 1=None and 5=All

It's okay to vaginal or anal sex without a condom?
It's okay to be abstinent that is choosing not to have sex?
It's okay to have sex with someone you just met?
Cheating on your partner is okay?
It's safe to have sex when you are high on drugs or alcohol?
You don't have to use a condom with someone you know well?
How many of your friends do you think are having sex?
Of your friends who are having sex, how many do you think use condoms all the time?

Affiliation With Deviant Peers
Responses are measured on a 3-point Likert scale where 1=None of them and 3=All of them
Skipped school without an excuse?
Been suspended or expelled from school?
Purposely damaged or destroyed properly that does not belong to them?
Stolen something worth less than $25?
Stolen something worth $25 or more?
Hit someone with the idea of hurting them?
Attacked someone with a weapon or with the idea of hurting them?
Used tobacco (cigarette, smokeless tobacco, etc.)?
Used alcohol (beer, wine bourbon, vodka, etc.)?
Drunk a lot of alcohol (4 or more drinks at one time)?
Used illegal drugs like marijuana, hashish, LSD, cocaine, downers, or crack?
Gotten high using drugs of some kind?
Had sex?
Had sex with someone that they didn't know well
How many of your female friends have gotten pregnant?
How many of your male friends have gotten a girl pregnant?
Sold drugs?

Gang Involvement
Each item is assessed individual with answer options being Yes/No
Is there a gang in your neighborhood?
Do you know people in a gang?
Have you ever had a boyfriend involved in a gang?
Have you ever had a family member involved in a gang?
Do you hang out with gang members?
Have you ever been a member of a gang?
Do you belong to a gang now?

F. Community Factors

Community Quality
Range 0 – 3 (3 means neighborhood has all 3 characteristics)
On your street, are there any of the following? (Check all items that apply OR check "NO")

Crime and Deviance (Neighborhood)
Responses are measured on a 3-point Likert scale where 1=Often and 3=Never
During the past year in the neighborhood surrounding your house, how often was there a fight in which a weapon like a gun or knife was used?
During the past 6 months, how often was there a violent argument between neighbors?
During the past 6 months, how often was there drinking in public in your neighborhood?
During the past year in the neighborhood surrounding your house, how often was there people selling or using drugs in your neighborhood?
During the past year in the neighborhood surrounding your house, how often was there a car stolen?
During the past year in the neighborhood surrounding your house, how often was there a gang fight?
During the past year in the neighborhood surrounding your house, how often was there a sexual assault or rape
During the past year in the neighborhood surrounding your house, how often was there a robbery or mugging?
During the past year in the neighborhood surrounding your house, how often was there a burglary?
During the past year in the neighborhood surrounding your house, how often was there a drive-by shooting?
During the past year in the neighborhood surrounding your house, how often was there a murder?