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A longitudinal examination of risk and protective factors associated with drug use and unsafe sex among young African American females

Dexter R. Voisin [a,b,*], Anna L. Hotton [c], Kevin Tan [a], Ralph DiClemente [b,d]

[a] University of Chicago, School of Social Service Administration, United States
[b] STI/HIV Intervention Network, United States
[c] John H. Stroger Hospital Department of Infectious Diseases, United States
[d] Emory University, Rollins School of Public Health, United States

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ABSTRACT

This study prospectively examined associations among multiple theoretically informed risk (e.g., depression, sexual sensation seeking, and risky peers norms) and protective factors (e.g., social support, STI knowledge, and refusal to have sex self efficacy) on unsafe sex among 715 African American adolescent females aged 15–21 who participated in an STI/HIV prevention intervention. Generalized estimating equation models were used to assess associations between baseline characteristics and sexual risk over a 12-month follow-up period. Overall risk in this population was high: at baseline, nearly a third of women reported sex under the influence of alcohol or substances; ≥2 partners for vaginal sex, and casual sex partners in the 60 days prior to baseline, and nearly 75% of those reporting vaginal sex used condoms inconsistently. In multivariable analysis, when risk and protective factors were simultaneously considered, higher levels of sexual sensation seeking were associated with having multiple sex partners and inconsistent condom use. Greater perception of risky peer norms was associated with a higher risk of having sex under the influence of alcohol or drugs. In addition, higher sex refusal self-efficacy was protective against having multiple; casual; and concurrent sex partners. Incorporating these salient factors into prevention programs may be critical to the development of targeted interventions for this population.

1. Introduction

In the United States (U.S.), compared to their white and Latina peers, young African-American females bear a disproportionate sexually transmitted infection and (STI) and human immunodeficiency virus (HIV) burden. For instance, African-American females (ages 15 to 19), are 95 and 61 times more likely to be infected with chlamydia than their Latina and white female counterparts respectively (Centers for Disease Control, Prevention, 2009). Furthermore in 2009, it is estimated that rates of HIV among African American females aged 13 to 29 were 15 and 3 times higher than among white and Latina women respectively (Centers for Disease Control, Prevention, 2011). From a behavioral perspective, unsafe sexual practices can lead to the transmission of STI/HIV infections among youth. Behavioral factors such as having a high number of sexual partners and inconsistent condom use increase the risk of contracting STIs including HIV (Crosby, DiClemente, Wingood, Lang, & Harrington, 2003; Paz-Bailey & Koumans, 2005; Santelli, Brener, Lowry, Bhatt, & Zabin, 1998).

An established body of findings, mostly based on cross-sectional studies, have documented that several significant factors are related to lower or higher rates of risky sexual behaviors among African American females (DiClemente et al., 2001; Grunbaum et al., 2002; Neblett, Davey-Rothwell, Chander, & Latkin, 2011). For instance, depression has been associated with higher rates of unsafe sex (Averett & Wang, 2012; Curry et al., 2012; Hallfors et al., 2004; Hipwell, Stepp, Keenan, Chung, & Loeber, 2011). In contrast, having higher levels of STI/HIV prevention knowledge has been protective against having unsafe sex (Bachanas et al., 2002; Corby, Wolitski, Thornton-Johnson, & Tanner, 1991; St. Lawrence, 1993; Voisin, Tan, & DiClemente, in press, 2013b). Without doubt, depression and STI knowledge, among other factors, are highly correlated with unsafe sex. However, most of what we know about risk and protective factors related to STI risk behaviors are derived from studies that have examined single risk or protective factors, which represent narrow conceptualizations of influence. These studies do not account for the actuality that individuals reside within multiple systems, which may simultaneously promote or restrain risky sex.

Therefore an ecological model provides a useful organizing framework for exploring how multiple factors across various systems may be related to risky sex among young African American females. In brief, this model proposes that human development takes place

* Corresponding author at: University of Chicago, School of Social Service Administration, 969 East 60th Street Chicago, IL 60636, United States.
E-mail address: d-voisin@uchicago.edu (D.R. Voisin).

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through progressively complex reciprocal interactions between an active, evolving bio-psychological human organism and the persons, objects, and symbols in its immediate environment (Bronfenbrenner, 1999). However, when we only examine single predictors to the exclusion of other important factors we do not obtain a realistic sense of the relative significance of potential predictors. Our examination of multiple risk and protective factors across a single population represents one of the significant contributions of this study.

In addition, the vast majority of what we know from HIV behavioral science is informed by cross-sectional studies. However, such designs are limited in their ability to disentangle important temporal ordering among variables, although they can establish important relationships prior to the mounting of expensive longitudinal studies to tease out temporal relationships. The prospective design of this inquiry represents another important contribution of this study.

Consequently, the primary aim of this study was to longitudinally examine how multiple risk factors (i.e., depression, sexual sensation seeking, and risky peer norms) and protective factors (i.e., STI/HIV prevention knowledge, refusal to have sex self-efficacy, and social support) might be associated with risky sex when assessed simultaneously. In the following sections we discuss the various risk and protective factors that are the focus of this study and the potential mechanisms that may account for their relationship to risky sexual behaviors.

1.1. Risk factors associated with increased sexual risk behaviors

Ample evidence indicates that psychosocial constructs such as depression (Hallfors et al., 2004; Morrill, Kasten, Urato, & Larson, 2001; Shrier, Harris, Sternberg, & Beardslee, 2001), sexual sensation seeking (Hendershot, Stoner, George, & Norris, 2007; Jones, 2004; Voisin et al., in press, 2013b), and peers norms endorsing risk behaviors (Bauermeister, Elkington, Brackis-Cott, Dolezal, & Mellins, 2009; Latkin, Kuramoto, Davey-Rothwell, & Tobin, 2010) are correlated with higher rates of unsafe sex among youth.

With regards to depression it is posited that individuals who are in distress may use sex as one way of self medicating difficult feelings (Elkington et al., 2010; Swanholm, Vosvick, & Chng, 2009). Consistent with this line of theorizing, during sexual intercourse significant mood elevating endorphins (e.g., oxytocin) are released into the blood stream which can create a sense of elevated well being (Meston & Frohlich, 2000). Additionally, using some drugs can release biologically active substances that affect the brain and automatic nervous system thereby reducing stress (Contrada & Baum, 2010).

Another individual factor associated with risky sex is sexual sensation seeking (SSS). This is considered as a fondness for thrilling, optimal, and novel levels of sexual stimulation and arousal (Kalichman et al., 1994). Studies have shown that sexual sensation seeking is positively correlated with risky sex (Crawford et al., 2003; Dolezal, Meyer-Bahlburg, Remien, & Petkova, 1997; Kalichman, Heckman, & Kelly, 1996; Kalichman, Weinhardt, DiFonzo, Austin, & Webster, 2002; Lye Chng & Géliga-Vargas, 2000; McCoul & Haslam, 2001). Persons prone to SSS are often predisposed to adventure and frequently seek new and unusual sexual experiences. Consequently such persons may engage in unprotected sex with multiple partners as way of satisfying their need for stimulation and excitement (Boyle, Murray, & Boekeloo, 2002; Reece, Dodge, & Cole, 2002).

Finally on a peer level, a consistent body of literature provides evidence that negative peer norms are correlated with risky sex (Bauermeister et al., 2009; Latkin et al., 2010). Youth who belong to peer networks which endorse risky norms are more likely to themselves adhere to such norms (Latkin et al., 2010). Social learning (Bandura, 1994) and network theories (Friedman & Aral, 2001) support such correlations. Given the modeling that occurs in such relationships and the reciprocal exchanges that are embedded within such strong networks, network members are more inclined to group norms and are susceptible to risky sexual behaviors (Metzler, Noell, Biglan, Ary, & Smolkowski, 1994).

1.2. Protective factors associated with deceased sexual risks behaviors

Sex by definition generally involves two persons, and a number of studies provide support that several relational dynamics are correlated with sexual behaviors. Gender power and male privilege in sexual relations would theoretically suggest that men hold more power than women during sexual negotiation (Wingood & DiClemente, 2002). Therefore, especially for females, having social support, possessing greater STI/HIV prevention knowledge, and being more confident in one's ability to refuse sex without condoms (Sionéan et al., 2002) have been shown to be correlated with lower rates of unsafe sexual practices.

For instance, on an individual level, several studies have shown that high STI/HIV prevention knowledge is protective against risky sex and contracting STIs (Bachanas et al., 2002; Corby et al., 1991; St. Lawrence, 1993; Voisin et al., in press, 2013b). According to one component of the Information Motivation Behavior (IMB) model, prevention knowledge can have a direct impact on STI-related behaviors (Fisher, Fisher, & Harman, 2009). Several empirical studies support the IMB theoretical framework, and provide evidence for a protective relationship between prevention knowledge and reduced STI-related behavior (Fisher, Fisher, Bryan, & Misovich, 2002; Fisher, Williams, Fisher, & Malloy, 1999; Robertson, Stein, & Baird-Thomas, 2006).

Additionally, on an individual level, in order for young females to have full control over their sexual health it is important for them to have adequate self-efficacy to refuse unsafe sex (Bandura, 1990). Self-efficacy is defined as the self-perceived capability to say no to the enactment of specific behaviors (Bandura, 1977) and as it relates to sex, the ability to refuse intercourse especially if it involves high risk (Rosenthal, Moore, & Flynn, 1991). Consistent with this theorizing, several studies have provided evidence that females who have strong versus low refusal self efficacy tend to report lower rates of risk sex and STIs (Ludwig & Pittman, 1999; Rosenthal et al., 1991; Seth, Raiji, DiClemente, Wingood, & Rose, 2009).

From a relational perspective, young females who have high levels of social support may be more inclined to negotiate safer sex compared to females who are isolated and lacking such social support (Albarracín, Kumkale, & Johnson, 2004; Pulerwitz, Amaro, Jong, Gortmaker, & Rudd, 2002). Therefore young females connected to networks where emotional and psychological needs are being met versus those detached from such supports, may be less inclined to submit to partner pressure to engage in high risk sex in anticipation of getting those emotional needs met (Pulerwitz et al., 2002).

In summary, few studies have examined multiple risk and protective factors across a single sample. In addition, few longitudinal studies have focused primarily on young African American females who bear some of the highest STI/HIV burdens. Consequently, the primary aim of this study was to longitudinally examine how a number of theoretically informed risk and protective factors might predict risky sex among African American adolescent females. The identification of such competing salient factors may be important to developing effective HIV prevention/intervention initiatives for this highly vulnerable population.

2. Methods

2.1. Sample and procedure

From March 2002 to August 2004, African American adolescent females aged 15 to 21 years were recruited from three comparable STI clinics in downtown Atlanta, Georgia. These clinics were similar because they served similar demographics, were part of the same