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Socio-Contextual Factors: Moving Beyond Individual Determinants of Sexual Risk Behavior among Gay and Bisexual Adolescent Males

Hector Torres, Psy.D. [Assistant Professor and Latino Mental Health Initiative Coordinator],

The Chicago School of Professional Psychology (htorres@thechicagoschool.edu).

Kathryn Delonga, M.S. [doctoral candidate],

PGSP-Stanford PsyD Consortium, Palo Alto University (kdelonga@stanford.edu).

Susanne Lee, MPH [Project Director],

Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, (susannel@stanford.edu.)

Kenneth A. Gladstone, M.S. [doctoral candidate],

PGSP-Stanford PsyD Consortium, Palo Alto University (kengpsyd@stanford.edu.)

Alex Barrad, M.S. [doctoral candidate],

PGSP-Stanford PsyD Consortium, Palo Alto University (abarrad@gmail.com).

Scott Huckaby, M.S. [doctoral candidate],

PGSP-Stanford PsyD Consortium, Palo Alto University (shuckaby@gmail.com).

Cheryl Koopman, Ph.D. [Professor], and

Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine (Koopman@stanford.edu).

Cheryl Gore-Felton, Ph.D. [Professor and Associate Chair]

Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine (cgore@stanford.edu).

Abstract

This study investigated factors associated with sexual behavior that confers the greatest risk for HIV transmission (i.e., unprotected anal intercourse; UAI) among 52 sexually active gay and bisexual adolescent males in a Midwestern city ages 15-19. A logistic regression model found that ethnicity other than African American, more sexual partners in the past year, greater stigma towards homosexuality, and greater perceived peer sexual norms for risky behavior were significantly associated with UAI ($\chi^2=27.96$, $df=5$, $p<.001$; Nagelkerke $R^2 = 0.56$). Implications for prevention interventions are discussed.

Keywords

Adolescents; African American; at risk behavior; bisexual; ethnicity; gay; HIV/AIDS; male; race; sexual behavior; stigma

Men who have sex with men (MSM) represent most (74.2% sexual contact and 3.6% sexual and drug contact) of the HIV cases in the United States through 2009 (CDC, 2011). Moreover, new infections among MSM continue to rise while other risk groups have declined (CDC, 2010). There are racial and age differences among new MSM infections

such that most of the new HIV infections are found among Black MSM between the ages of 13 and 29 (CDC, 2010). Despite these findings, very little research has focused on racial/ethnic factors associated with HIV-related risk behavior among adolescent gay and bisexual males (Marshall, Crepaz, & O'Leary, 2007; Rotheram-Borus, O'Keefe, Kracker, & Foo, 2000). This is a striking omission given that risk reduction behaviors can significantly reduce HIV transmission. In fact, we have known for quite a while that using condoms correctly and consistently is estimated to decrease the risk of transmission by 70-95% (Ahmed et al., 2001; Pinkerton and Abramson 1997). Thus, identifying factors that are associated with risk reduction behavior, particularly among populations where the rates of HIV infection continue to rise are needed to develop effective prevention programs.

A theoretical approach to understanding risk reduction behavior will assist in identifying factors that are most likely to produce the behavioral change we are interested in, i.e., risk reduction behavior. A general theoretical model that supposes a causal link between beliefs and behavior is the Theory of Reasoned Action (Ajzen & Fishbein, 1980). An individual's beliefs about a particular behavior are associated with the attitude towards that behavior, which is in turn associated with intentions to engage in the behavior (Fishbein, Middlestadt, & Hitchcock, 1994). Moreover, an individual's subjective norms (i.e., the perception of social pressure to engage or not engage in a behavior) influences behavior. Thus, behavior is determined by an underlying cognitive structure, which includes beliefs, attitudes, intentions, and subjective norms.

A test of the Theory of Reasoned Action among adolescents found that an intervention aimed at increasing AIDS-related knowledge and increasing positive attitudes about safe behavior was effective at increasing attitudes and knowledge as well as lowered intentions to engage in risky sexual behavior (Jemmott, Jemmott, & Fong, 1992). Although the Theory of Reasoned Action is useful in explaining a portion of the variance associated with sexual behavior, there is still a substantial amount of the variance that the model does not explain.

A model that may assist in determining other factors that are associated with the complexity of sexual behavior is Social Cognitive Theory. Social Cognitive Theory proposes that successful achievement of any behavior requires a strong self-belief in one's ability (i.e., self-efficacy) to exert control over their motivation, thoughts, emotional states, and patterns of behavior (Bandura, 1994). Indeed, research among adolescents suggests that sexual self-efficacy is predictive of the intention to use condoms among African-American males 14-19 years old (Colon, Wiatrek, & Evans, 2000). Additionally, in a statewide survey conducted in Texas among 1,720 9th graders, the greater self-efficacy teens had in using condoms the more likely they were to report their intentions to use condoms during sexual intercourse (Basen-Engquist & Parcel, 1992).

It is a common assertion that adolescents are vulnerable to the influence of their peers and, in addition to anecdotal support, there is empirical support for this assertion. For instance, adolescents who believed their peers were supportive of condom use were more than four times as likely to use condoms consistently (DiClemente et al., 1996). Moreover, Community Intervention Trial for Youth Project data collected annually from 1999 to 2002 among 778 African American young men who have sex with men (YMSM) aged 18-25 in Atlanta, Georgia, found that reference group norms were significantly related to unprotected anal intercourse (UAI; Hart et al. 2004).

Importantly, the social influences on behavior extend beyond peer groups for many gay and bisexual YMSM. The sexual minority status of gay and bisexual men in a society that holds discriminatory views and practices often results in stigma associated with same sex relationships. Perceptions of stigma towards homosexuality have been linked to increased

sexual risk among YMSM ages 15 to 17 (Waldo et al. 2000). Furthermore, YMSM's reported number of recent sexual partners has been associated with incidence of UAI in a sample of 154 YMSM ages 13-21 in five Midwestern U.S. cities (Dudley et al. 2004). Similarly, among a sample of African American YMSM who were HIV-positive, HIV-related stigma was associated with more receptive anal intercourse (Radcliffe et al., 2010). Thus, it is clear that social context is an important factor associated with risk behavior. This is not surprising given that the behaviors that put one at risk for HIV transmission are interpersonal and, therefore, occur within a social context.

Guided by social cognitive theory, we were interested in examining the influence of stigma beliefs related to same sex behavior and peer sexual norms on risk behavior among sexual minority male adolescents. To that end, the current study examined the influence of peer norms, stigma, self-efficacy, and sexual risk behavior among gay and bisexual male adolescents. Additionally, we wanted to examine the sexual behavior conferring the highest risk for HIV transmission, namely, unprotected anal intercourse. While our variables of interest have been examined in the previous literature, no study to date has examined these factors simultaneously among a predominately ethnic minority sample of gay and bisexual adolescent males. We hypothesized that greater perceived risk norms, greater stigma, lower self-efficacy to reduce risk behavior, and greater numbers of sexual partners in the past year would be positively and significantly associated with unprotected anal intercourse.

METHODS

Participants

Participants were recruited through the youth program at the Milwaukee Lesbian, Gay, Bisexual, and Transgender Community Center located in Milwaukee, Wisconsin. Fifty-eight adolescents completed baseline surveys. Six of these participants were excluded from the analysis due to missing data or lack of prior sexual experience. For demographic data on ethnicity, age, sexual orientation, education, and household income see Table 1.

Procedure

Flyers were posted at the Milwaukee Lesbian, Gay, Bisexual, and Transgender Community Center and were used to recruit participants. The Medical College of Wisconsin Institutional Review Board approved waiving parental consent to protect the privacy of participants who were younger than 18 years and had not openly disclosed their sexual orientation with their parents. Thus, we only obtained assent (individuals younger than 18 years) and consent (individuals 18 years and older) from the adolescents. Research staff informed interested participants of the nature and purpose of the study, the time commitment, the anticipated risks and benefits, how confidentiality would be protected, and ensured that participation was voluntary prior to obtaining written assent and consent. Each participant completed an anonymous survey in a private office or clinic room during business hours. Each participant was paid \$30 for completion of the survey.

Measures

Demographic and sexual risk questionnaire—We developed a questionnaire that assessed age, ethnicity, grade in school, family income, and sexual orientation. Sexual history was ascertained through questions about the number of male sexual partners in the participant's lifetime, the number of male partners during the past year, sexual behaviors of the past year including the types of sex acts and partner's gender, and the frequency of condom use.

Perceived reference group sexual norms—We used a 5-item scale from the Sexual Risk Behavior and Self-Efficacy Scale (Basen-Engquist et al. 1998) to assess participants' perceptions of their peer reference group condom use norms and sexual intercourse norms. Example items were “Most of my friends believe people my age should wait until they are older before they have sex,” “Most of my friends believe condoms (rubbers) should always be used if a person my age has sex, even if the two people know each other very well.” We reversed the item responses so that higher scores supported risk behavior. Responses were on a 4-point Likert-type scale ranging from 1 “Definitely Yes” to 4 “Definitely No.” A total score was obtained by reverse scoring item 2 and then summing the score on each item. The scale demonstrated good reliability (Cronbach's alpha = .76), which is consistent with previous research (Basen-Engquist et al., 1998).

Self-efficacy—To assess participant's self-efficacy in reducing risk behavior, we used the Self-Efficacy for Limiting HIV Risk Behaviors (LHRB) scale (Smith, McGraw, Costa, & McKinlay, 1996). The scale uses the introductory stem “*How sure are you that you could...*” to query 9 items which include “...talk about safe sex with a casual partner?” “buy condoms in a drug store?” and “prevent a partner from having anal sex with you?” We reversed the item responses so that higher scores meant lower self-efficacy for reducing risk behavior. The responses were on a 5-point Likert-type scale ranging from 1 “Very sure” to 5 “Not sure at all.” The scale demonstrated strong reliability (Cronbach's alpha = .81), which is consistent with previous research. We summed across each item for a total score.

Stigma—The Perceptions of Local Stigma Scale (PLS; Herek & Glunt, 1995) was used to assess participants' perception of stigma as it relates to being gay or bisexual. We modified the PLS by reversing the response items so that higher scores meant greater stigma. The PLS is a 7 item scale that uses a 5-point Likert-type response ranging from 1 “Strongly agree” to 5 “Strongly disagree.” A total score was obtained by reverse scoring items 3, 4, and 5 then summing the scores on each item. The scale demonstrated good internal consistency (Cronbach's alpha = .70).

Data Analysis

A binary variable was created to indicate potential exposure to HIV via UAI. We were interested in HIV-related transmitted risk behavior that put our participants as well as their sexual partners at highest risk for HIV infection. Therefore, participants who had engaged in receptive or insertive anal intercourse without consistently using a condom received a score of 1, while a score of 0 indicated consistent condom use. A “dummy” variable was created to identify ethnic identity, whereby 1=African American, and 0=other than African American. We compared those with missing data to those we included in the study on age, ethnicity, and SES. The only significant difference was age—those with data were, on average, significantly older by approximately 1 year ($M d = .96$; $CI (.29-1.64)$], $SE d = .32$, $t = 2.84$, $p < .01$).

Pearson chi-square tests were conducted to compare categorical variables, t -tests were used to compare continuous variables, and point-biserial correlations were calculated when one variable was dichotomous and the other continuous. Because UAI is our dependent variable and it has two categories (i.e., inconsistent condom use and consistent condom use), a bivariate logistic regression was conducted to examine the associations between the constructs of interest and UAI. Because older age is consistently associated with greater sexual activity among adolescents, we wanted to control for age and explore the effects of ethnicity. Therefore, age and the binary-coded ethnicity variables were entered using the forward stepwise procedure, then we entered the number of sexual partners in the past year, self-efficacy to reduce risk, stigma, and perceived group sexual norms.

RESULTS

For descriptive data on independent and dependent variables see Table 2.

In addition to a wide range of reported sexual partners during the past year, participants reported substantial numbers of lifetime sexual partners ($M = 11.87$, $SD = 21.67$; range 1 – 150). Almost two-thirds (63.5%, $n = 33$) reported ever having sex with a female. We examined ethnic differences on self-efficacy, stigma, and peer sexual norms. The only significant difference found was with stigma such that African Americans reported on average, significantly more stigma ($[M d = 4.72$; $CI (1.92-7.52)]$, $SE d = 1.39$, $t = 3.34$, $p < .01$).

Results of the binary logistic regression model are presented in Table 3. Ethnicity other than African American, more sexual partners in the past year, greater stigma, and more perceived risky peer sexual norms were predictive of unprotective anal intercourse. We did not find a significant effect for self-efficacy. The overall model was statistically significant (Nagelkerke $R^2 = 0.56$; $X^2 = 27.96$, $df = 5$, $p < .001$).

DISCUSSION

This study adds to the extant literature on adolescent risk behavior and in particular on gay and bisexual male adolescent risk behavior. Consistent with the epidemiological data (CDC, 2010) over half (56%) of the participants in our study reported unprotected insertive and or receptive anal intercourse in the past year, putting themselves and others at increased risk for HIV infection. Interestingly, we found that ethnicity other than African American was associated with greater sexual risk behavior. This finding is consistent with previous research among adult African American males that found African American MSM report less sexual risk behavior compared to their Caucasian counterparts despite being overrepresented in national cases (CDC, 2010; Crosby et al., 2007; Millet et al., 2001), suggesting that factors other than individual level constructs are facilitating HIV transmission among African American MSM (Crosby et al., 2007).

Consequently, our finding lends support to the extant research that suggests factors other than sexual risk behavior are responsible for the disproportionate rates of HIV found among African American MSM compared to other racial and ethnic groups. Future HIV prevention research with gay and bisexual male adolescents will need to look beyond the individual toward factors such as biological, structural, and social influences that increase viral acquisition risk beyond what is found among other comparable groups of males. In addition to risk factors, it will be important for future research to explore protective factors associated with the reduced sexual risk behavior. For instance, cultural factors unique to African Americans may play a protective role in reducing sexual risk behavior or it may be that public health messages that target African American males have been successful in altering sexual behavior.

Consistent with previous research (Valois, Oeltmann, Waller, & Hussey, 1999), we found that more sexual partners were associated with unprotected anal intercourse. Prevention efforts that reduce the number of sexual partners among adolescents are likely to decrease the risk of subsequent sexually transmitted infections, including HIV. Our findings have important implications for also targeting peer sexual norms. For instance, interventions that influence reference group sexual norms such that they are consistent with safer sexual behavior may be highly effective in reducing high-risk sexual behavior (i.e., unprotected anal intercourse) among YMSM. Support for this assertion can be found in Popular Opinion Leader HIV prevention research among adolescents which targeted peer norms related to

sexual risk behavior and provided social reinforcements to maintain risk reduction norms (Sikkema et al. 2005).

Sikkema et al. (2005) found that community-level interventions among adolescents can be significantly effective in delaying sexual debut and increasing condom use. Consistent with findings from Sikkema et al. (2005), an intervention that trained YMSM leaders of social networks in Russia and Bulgaria found that reference group norms could be modified to elicit increased AIDS risk reduction knowledge, safer beliefs about peer norms, greater self-efficacy, and increased frequency of condom use (Amirkhania et al. 2003). Taken altogether, the research that has examined interventions designed to influence adolescent norms associated with sexual risk behaviors indicate that some aspects of sexual behavior among YMSM can be explained by a modified version of the theory of reasoned action and social cognitive theory, and further explained through social network theory (Morris 1997) and diffusion of innovation theory (Rogers 1995).

While it has been noted that self-efficacy associated with reducing risk behavior has been associated with risk reduction among heterosexual adolescents (Jemmott & Jemmott, 2000), we did not find that self-efficacy was associated with UAI. For adolescents in our study, peer relationships and stigma were more relevant correlates of UAI, which is consistent with social cognitive theory such that relationships (e.g., social modeling) influence behavior (Bandura, 1994). Indeed, the social context may be a stronger predictor of sexual risk behavior in our study because of the sexual identity of the youth in our study. Most of the studies that have been conducted to date have been on heterosexual youth (Harper & Riplinger, 2012), and our findings suggest that constructs that are relevant for heterosexual youth may not be relevant for gay and bisexual youth. It will be important for future studies to examine more closely the influence of multiple cultures (e.g., youth, ethnicity, geographic location) and multiple identities (e.g., male, gay/bisexual, race/ethnicity) on risk behavior (Harper & Riplinger, 2012), particularly among gay and bisexual adolescent males.

The association of stigma and sexual risk behavior suggests the need to examine the relationships between perceived stigma towards homosexuality, distress, self-esteem, and UAI to determine whether reducing perceived stigma towards homosexuality can reduce UAI, and if so, whether this relationship is mediated by reducing distress and stigma towards homosexuality.

Several limitations need to be considered to put the study findings in the appropriate context. First, the study was conducted in a Midwestern city and may not be generalizable to other geographic locations in the United States. Second, we recruited a convenience sample of gay and bisexual youth who were seeking services at a community center whose mission is to create community and provide prevention outreach for sexual minorities. Individuals who seek services from this type of community center may not be generalizable to those who do not. Also affecting generalizability was our small sample size. Small samples lend themselves to spurious findings. However, it is important to note that we believe this is mitigated in our study by the robust statistical parameters along with the consistency of our findings with the larger body of scientific papers that has examined correlates of risk behavior among MSM. Third, we used self-report measures which are susceptible to bias because of errors in recall and social desirability. Fourth, we did not assess sexual partner characteristics (i.e., gender, length of time in relationship, relationship status, etc) which have been shown to influence sexual behavior in adult samples and may influence risk behavior among adolescents. Finally, the cross-sectional design of the study prevents us from making causal interpretation of the results.

CONCLUSIONS

Despite the study limitations, the study demonstrates robust findings that are consistent with previous research and have significant implications for future research and HIV prevention among YMSM. Furthermore, as previously noted, almost two-thirds of the adolescent males in this study reported having sex with female partners, suggesting the need to understand the fluidity of sexual relationships. In this context, risk factors associated with the transmission of sexually transmitted infections may vary by the gender of one's sexual partner.

The disparity of HIV prevalence and incidence that is found in African American urban communities requires a broad stance—beyond individual behavior. Future research is needed to understand the developmental context of stigma and its influence on risk behavior over the course of one's life span. As prevention efforts mature into the 21st century, we will need to have interventions that adapt across social and developmental contexts. Although prevention efforts are primarily focus on individual factors, others constructs such as societal, interpersonal, structural, epidemiological, and biological are likely to be key factors in understanding HIV transmission and acquisition rates across diverse populations, particularly among African American MSM who continue to represent disproportionate rates of HIV infection despite the lower rates of reported risk behavior.

Racial and ethnic minority gay and bisexual adolescent males are underrepresented in research, yet account for most of the new HIV infections in United States, indicating a strong need for prevention efforts that target socio-cultural aspects of sexual risk behavior that are unique to them. In addition to research that examines risk factors, future studies among adolescents are needed to delineate protective factors within a developmental framework that considers gender, sexual orientation, and culture.

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Table 1

Sociodemographic Characteristics of Sample (N = 52)

	<i>M (SD)</i>	<i>Range</i>	<i>% (n)</i>
Age	17.8 (1.1)	15-19	
Sexual Orientation			
Gay			61.5(32)
Bisexual			38.5(20)
Ethnic background(s)			
African-American			71.2 (37)
Caucasian			9.6 (5)
Hispanic			1.9 (1)
Mixed/Other			17.3 (9)
Last Grade Completed	11.2 (1.0)	8-12	
Household income			
Less than \$14,999			13.7 (7)
\$15,000-24,999			19.6 (10)
\$25,000-34,999			19.6 (10)
\$35,000 or more			47.1 (25)

Table 2

Descriptive data for Independent and Dependent Variables (N = 52)

Variable*	Mean (SD)	% (n)	Range
Number of Sexual Partners in Past yr	4.38 (6.69)		1 – 40
Self-Efficacy	14.79 (5.36)		9 – 27
Stigma	21.83 (5.00)		7 – 33
Peer Sexual Norms	11.37 (2.34)		7 – 16
Unprotected Anal Intercourse		55.8 (29)	

* Note: Data represent summed scores

Table 3

Binary Logistic Regression Examining Factors Associated with Unprotected Anal Intercourse (N = 52)

Variable	<i>B</i>	SE	Odds Ratio	95% (CI)
African American	-3.58	1.43	.028	(.002 - .458) ***
Number of Sexual Partners	.61	.25	1.84	(1.13-2.99) ***
Self-Efficacy	.12	.09	1.12	(0.95 - 1.33)
Stigma	.26	.12	1.29	(1.01 - 1.65) *
Peer Sexual Norms	.61	.27	1.85	(1.08 - 3.15) **

p < .02,

**
p < .03,

*
p < .05

Note: Only variables retained in the final model are shown in table.