



Published in final edited form as:

Psychol Sex. 2016 ; 7(3): 177–196. doi:10.1080/19419899.2016.1168312.

Attachment orientation and sexual risk behaviour among young Black gay and bisexual men

Stephanie H. Cook, DrPH^{1,2}, Daphne C. Watkins, Ph.D³, Benjamin Calebs, AS², and Patrick A. Wilson, Ph.D⁴

¹Department of Health Behavior and Health Education, School of Public Health, University of Michigan, Ann Arbor, MI

²Department of Psychology, The College of Literature, Sciences & Arts, University of Michigan, Ann Arbor, MI

³School of Social Work and Medical School, Department of Psychiatry, University of Michigan, Ann Arbor, MI

⁴Department of Sociomedical Sciences, Mailman School of Public Health, Columbia University, New York, NY

Abstract

This mixed methods study used an explanatory sequential design to examine the relationship between attachment and sexual behavior among young Black gay and bisexual men (YBGBM). Cross sectional online surveys and sex diaries were completed by a sample of YBGBM in New York City ($n = 153$) to assess the association between adult attachment insecurity and sexual risk behavior. The Experiences in Close Relationships Scale-Revised (ECR-R) was used to assess three types of adult attachment (i.e., secure, anxious, and avoidant). Participants reported condomless sex encounters, as well as serodiscordant condomless anal sex encounters, as measures of sexual risk. Quantitative findings suggested that there were few associations between attachment type and sexual risk behavior; only men with attachment avoidance were likely to engage in condomless sex. However, qualitative findings illuminated some of the social complexities of the association between attachment in childhood, attachment in young adulthood and intimate partnerships, which could be linked to young adult sexual risk behavior. The study findings highlight the need for researchers to further examine the process by which individual differences in attachment orientation are related to YBGBM's sexual behavior.

Keywords

attachment; HIV; sexual behavior; young Black gay and bisexual men

A number of research studies have explored the link between attachment insecurity and sexual behavior (Ahrens, Ciechanowski, and Katon (2012)). Specifically, much of the

available evidence suggests that individuals with higher levels of attachment insecurity are more likely to engage in sexual risk behavior, which can in turn increase risk for negative physical health outcomes (Ahrens, Ciechanowski, & Katon, 2012; Bogaert & Sadava, 2002; Ciesla, Roberts, & Hewitt, 2004; McElwain, Kerpelman, & Pittman, 2015; Olley, 2010). Despite this, there continues to be a dearth of research which focuses on how attachment in adulthood is associated with sexual behavior overall and more specifically sexual risk behavior. Findings from this line of research are extremely important for sexual minority young men, who have heightened incidence of sexually transmitted infections (e.g., HIV) and who are subjected to a variety of physical health disparities, including higher rates of certain cancers (Lick, Durso, & Johnson, 2013). This is especially true for certain sub-populations of sexual minority men, such as young Black gay and bisexual men (YBGBM), who have increased levels of sexual risk behaviors (Millet et al., 2012). Sexual risk behaviors are associated with health outcomes (e.g., HIV) (Center for Disease Control and Prevention, 2010; Millet et al., 2012). Therefore, due to the implications of sexual risk behaviors, it is necessary for health researchers to understand the association between sexual behaviors (including sexual risk behaviors) and health among YBGBM. To this end, the current study utilizes a mixed methods approach to examine the association between adult attachment and sexual behavior, including sexual risk behaviors, among YBGBM.

Sexual Risk Behavior among Sexual Minority Men

Researchers have found that populations of gay and bisexual males have some of the highest rates of HIV in the United States. For example, in 2009, gay and bisexual males accounted for 27% of new HIV infections and 69% of new HIV infections among individuals aged 13 to 29 years (CDC, 2010). Furthermore, rates of new HIV infection increased by 48% between 2006 and 2008 (CDC, 2010). Some studies have shown evidence of race/ethnicity differences regarding HIV infection rates among gay and bisexual males. For example, in 2009, 63% of gay and bisexual males infected with HIV were Black (CDC, 2010). In a recent meta-analysis, Millett et al. (2012) found that YBGBM were five times more likely to be HIV-positive and seven times more likely to have an undiagnosed HIV infection than young gay and bisexual men of other races/ethnicities. In addition, according to the New York Department of Health, from 2001 to 2006, rates of HIV increased 126% among young black gay and bisexual males aged 13 to 29 years (Center for Disease Control and Prevention, 2010).

Due to the high rates of HIV among YBGBM, many researchers have attempted to identify the potential behavioral factors that may place them at increased risk for HIV infection. The most common mode of HIV transmission among gay and bisexual males in the United States is condomless sex (Center for Disease Control and Prevention, 2010), thus some researchers have made an effort to examine the relationship between condomless sex and HIV risk. Other researchers have noted that serosorting practices (i.e., the act of selecting sexual partners with a similar HIV status) have become increasingly used as a means to reduce sexual transmission of HIV in communities of gay and bisexual men (Snowden, Raymond, & McFarland, 2009). Because more gay and bisexual men are participating in serosorting practices, researchers have become interested in examining serodiscordant condomless anal sex (i.e., insertive anal intercourse between an HIV-positive and HIV-negative/unknown

person) as a significant sexual risk behavior that may increase HIV vulnerability among gay and bisexual men (Snowden et al., 2009).

In their study exploring the relationship between sexual behavior and increased HIV risk, Millett et al. (2012) found that YBGBM were less likely to have had a recent condomless sex encounter and more likely to have been recently tested for HIV than other young gay and bisexual men. These findings seem to suggest that YBGBM should have lower rates of HIV infection, yet the authors also found that YBGBM were five times more likely to be HIV-positive and seven times more likely to have an undiagnosed HIV infection (Millett et al., 2012). Reports on the disparities in serodiscordant condomless anal sex between Black gay and bisexual men and White gay and bisexual men have also shown mixed results. In one study, Black gay and bisexual men were found to be more likely than White gay and bisexual men to report having a sexual partner with an unknown HIV status (Maulsby et al., 2013). Along similar lines, a study of newly HIV infected gay and bisexual men, found that Black participants were more likely than White participants to report that their last sexual encounter was with an HIV-unknown status male (Oster et al., 2011). However, in an earlier meta-analysis, Millett, Flores, Peterson, and Bakeman (2007) found that in the United States both HIV-negative Black gay and bisexual men and HIV-negative White gay and bisexual men were equally as likely to have an HIV-positive sex partner. While the literature on the sexual risk behavior of gay and bisexual men shows some evidence of differences based on race/ethnicity, the specific factors that contribute to these differences require further study.

Attachment Theory and Sexual Risk Behavior

Attachment theory, as conceptualized by Hazan and Shaver (1994), serves as a framework through which to explore the association between attachment and intimate relationships. This theory specifically focuses on how the attachment relationships during childhood between the individual and his/her parents are related to the attachment relationships in adulthood between the individual and his/her intimate partners (Hazan & Shaver, 1994). Attachment theory proposes that working models associated with relationship formation and maintenance are developed early in the life course and, in turn, come to inform attitudes, feelings, and behaviors around the formation and maintenance of close relationships in general (J. A Simpson & Rholes, 2010). These working models use early childhood experiences in attachment relationships to guide views, procedural knowledge, and behaviors in attachment relationships in adulthood and are adjusted throughout the life course (Grossman, Grossman, & Waters, 2005; J. A Simpson, Collins, Tran, & Haydon, 2007).

Attachment orientation is typically measured along two dimensions, including attachment avoidance and attachment anxiety. Individuals who have high levels of attachment avoidance and/or attachment anxiety are considered insecurely attached. Individuals with low levels of both attachment avoidance and attachment anxiety are considered securely attached. Attachment anxiety is associated with feelings of preoccupation and high levels of anxiety and insecurity about relationships. Attachment avoidance is associated with a strong desire for independence in relationships and decreased comfort with intimacy. Secure attachment is associated with comfort with intimacy and emotions. Further, securely attached individuals

have been shown to be able to negotiate and maintain close relationships with greater ease than insecurely attached individuals (Mikulincer & Shaver, 2007).

Using this framework, attachment researchers have found that individuals who have higher levels of attachment anxiety or attachment avoidance (i.e., individuals who are insecurely attached), as compared to individuals who have lower levels of both attachment anxiety and attachment avoidance (i.e., individuals who are securely attached), are more likely to have negative feelings and thoughts associated with relationship formation and maintenance (Mikulincer & Shaver, 2007). For instance, Feeney (2008) found that individuals who were anxious in their attachment orientation were more likely than secure or avoidant individuals to believe that their intimate partner was less available than they actually were. Thus, attachment orientation has been found to be associated with both the perceptions of intimate relationships and the manner in which individuals engage in these relationships.

Though few empirical studies have examined the relationship between adult attachment and sexual risk behavior, the relevant literature suggests that securely attached individuals participate in less risky sexual behavior as compared to individuals with higher levels of attachment anxiety and attachment avoidance (Ahrens, Ciechanowski, & Katon, 2012; Bogaert & Sadava, 2002; Ciesla, Roberts, & Hewitt, 2004; McElwain, Kerpelman, & Pittman, 2015; Olley, 2010). For example, some studies have found that attachment anxiety is associated with negative beliefs about condom use, decreased likelihood of condom use, and lower perceived risk of HIV infection (Feeney, 1999; Hazan, Zeifman, & Middleton, 1994). This may be a consequence of the tendency for individuals who are higher in attachment anxiety to use their sexual relationships to meet attachment needs (Schachner & Shaver, 2004). This could, in turn, lead to decreased assertive communication around sexual matters, as any conflicts arising from such communication would be viewed as a threat to the relationship (Davis et al., 2006; Khoury & Findlay, 2014).

Prior research looking at the relationship between attachment avoidance and sexual risk behavior has been inconclusive. Some studies have found a relationship between attachment avoidance and sexual risk-taking behaviors among heterosexual (Anderson, May, & Anderson, 1992) and same-sex relationships (Ridge & Feeney, 1998), while other studies have found no relationship (Bogaert & Sadava, 2002). Attachment avoidance has been associated both with avoiding sex (i.e., negatively associated with sexual risk behavior) and having many casual sexual partners (i.e., positively associated with sexual risk behavior) (Gentzler & Kerns, 2004; Kalichman, Roffman, Picciano, & Bolan, 1998). However, several studies have shown that individuals with an avoidant attachment style are more likely to accept the idea of having casual sexual partners, as well as engage in sexual relations with more casual sexual partners than securely or anxiously attached individuals (Brennan & Shaver, 1995; Feeney, Noller, & Patty, 1993; Gentzler & Kerns, 2004; Kershaw et al., 2007; J. A. Simpson & Gangestad, 1991). Studies employing different measures of sexual risk (i.e., STI history, knowing partners STI history, condom self-efficacy, and condom usage) in the examination of attachment avoidance and sexual behavior have also produced mixed results. For instance, one study using a sample of gay men found that higher attachment avoidance was associated with less condom use with casual sexual partners' (Starks & Parsons, 2014).

Beyond attachment theory, other research has focused on the associations between relationship perceptions and behaviors for sexual minorities. Researchers have suggested that couple-based analyses could contribute to a better understanding of HIV risk among young gay and bisexual men (Mustanski, Lyons, & Garcia, 2011). As most condomless sex occurs within committed relationships among gay and bisexual men (Sullivan, Salazar, Buchbinder, & Sanchez, 2009), partner characteristics and relationship dynamics may play a critical role in understanding behaviors that may contribute to HIV risk within sexual relationships. For instance, relationship dynamics between two individuals within a couple may influence factors such as condom negotiation. Indeed, Semple and colleagues (2003) found that partner type and self-efficacy influenced the likelihood that individuals would engage in safer sex practices, with non-casual relationships and fear of partner rejection being associated with engaging in unprotected anal intercourse. As such, an examination of partner characteristics and relationship dynamics in intimate relationships could help researchers better understand the links between behavior and HIV risk among YBGBM.

Although some researchers contend that sexual risk (e.g., condomless sex) cannot exist within monogamous relationships (Calsyn, Campbell, Tross, & Hatch-Maillette, 2011), for the purpose of this study, sexual risk was defined as something that can occur within or outside of a monogamous relationship. As mentioned before, researchers have found that much of the sexual risk behavior that does occur among gay and bisexual men occurs within relationships (Sullivan et al., 2009). Further, due to the high rates of HIV among YBGBM, it is important to examine the processes and mechanisms associated with HIV risk (e.g., condomless sex), which can occur within or outside of a monogamous relationship. Lastly, based on the extant research literature, attachment processes can influence sexual behavior within and outside of sexual relationships. Thus, it is important to examine how attachment may influence sexual behaviors overall and sexual risk behavior more specifically.

Taken together, previous studies suggest that there may indeed be a relationship, albeit a complex one, between attachment orientation and sexual risk behavior. However, further research is needed to better understand the links between attachment orientation and sexual risk behavior. Specifically, researchers must look at the mechanisms by which relationship dysfunction associated with attachment insecurity relates to sexual risk behaviors among populations with increased HIV risk, such as YBGBM.

Present Study

The present study explored how attachment relationships, both with parental figures in childhood and peers in young adulthood, were associated with sexual risk behaviors among YBGBM. The present study builds on previous research of attachment and sexual behavior by examining how differences in how YBGBM view their relationships are associated with sexual behavior and, specifically, sexual risk behaviors. Two principal questions framed this study: 1) how is young adult attachment associated with sexual risk behavior among YBGBM? and 2) what are potential explanatory mechanisms for links between childhood attachment, young adult attachment, and sexual behaviors, particularly sexual risk behaviors? The study used a mixed methods approach. For the quantitative phase of the study, it was hypothesized that men who had higher attachment insecurity (i.e., attachment

avoidance and attachment anxiety) would have engaged in more condomless sex and serodiscordant condomless anal sex (i.e., insertive anal intercourse between an HIV-positive and HIV-negative/unknown person) than men who had lower attachment insecurity (i.e., men who were more securely attached). The qualitative data were then used to identify potential mechanisms through which childhood attachment may be related to both attachment and sexual behavior in young adulthood.

Method

Study Design and Procedures

Table 1 displays the sample characteristics. An explanatory sequential design was used to guide the study's framework and analysis (Clark & Creswell, 2011; Creswell, 2014). The study involved two phases: a quantitative phase and a qualitative phase. The two types of data represent different levels of analysis within a common phenomenon, with the intent to form an overall interpretation of the phenomenon (Clark & Creswell, 2011; Creswell, 2014). In this design, researchers use different methods (i.e., quantitative and qualitative) to understand one particular phenomenon (Teddlie & Tashakkori, 2003). This research integrates the strengths of qualitative and quantitative approaches through the integration of data (Kartalova-O'Doherty & Doherty, 2009). Following this design, quantitative (i.e., survey) and qualitative (i.e., interview) data were collected and analyzed. Rigorous procedures were used in data collection and analysis appropriate to each method's tradition.

The study was part of a larger mixed methods research project called The Brothers Connect Study (BCS), which examined psychosocial and situational factors related to enhanced vulnerability to HIV and other poor health outcomes. Between 2010 and 2011, a community sample of 228 YBGBM participated in the larger BCS study. Of these 228 men, a sub-sample of 153 men who experienced at least two condomless sex episodes in the last 2 months was selected from the cross-sectional component of the BCS study to complete an 8-week quantitative structured sex diary. The diary involved a self-administered questionnaire that was completed on a weekly basis. Participants were asked to complete the 20 minute sex diary on the same day every 7 days. Reminder emails were sent to participants every week to increase compliance. A variety of recruitment methods were used including social media outlets and community venues. Flyers and/or business cards were placed on websites targeted at YBGBM. Flyers and study business cards were also distributed or posted in gay bars, gay clubs, college campuses and cafés. Participants were recruited from community-based organizations (CBOs), such as the LGBT Community Center, and Callen-Lorde Community Health Center, a primary care clinic that provides health care to LGBT individuals. Participants received a \$10 gift card for referring up to two respondents who ultimately participated in the study.

Individuals who completed the quantitative components of the study were contacted by the BCS project coordinator and asked if they would like to participate in the qualitative portion. This recruitment process continued until 30 individuals completed the semi-structured interview component of the study. The semi-structured interviews were conducted between August 2011 and October 2011 by trained BCS study staff members. Interviews lasted

between 45 and 120 minutes with the average interview lasting 56 minutes. The [BLINDED] Institutional Review Board granted approval for this research study.

Quantitative Measures

Demographic and health-related information—Demographic and health-related information was assessed using a 24-item measure consisting of fixed-choice and fill-in-the-blank questions. Participants completed items assessing age, race/ethnicity, sexual orientation, education level, annual income, relationship status (married/have a boyfriend vs. single), employment status, and HIV status. To participate in the study, participants had to report being born male. The self-report measure of sexual orientation included the following options: straight, gay, bisexual, and other. Participants were also asked if they had had sex with another man in the past month.

Adult attachment—The Experience in Close Relationships Scale-Revised (ECR-R; Fraley, Waller, & Brennan, 2000), a modified 13-item version of the original 36-item scale, was used to evaluate participants' attachment orientations by measuring levels of attachment anxiety and attachment avoidance. The ECR-R is a self-report measure of adult attachment, consisting of two scales assessing attachment anxiety and attachment avoidance. During administration, respondents were instructed to evaluate statements pertaining to their thoughts and feelings about a past or present romantic relationship. Statements were rated on a seven-point Likert scale ranging from a score of zero ("Not At All Like Me") to six ("Very Much Like Me"). Cronbach's alpha for the modified scales was .82 (95% one-sided CI = .81) for attachment avoidance and .84 (95% one-sided CI = .83) for attachment anxiety.

Condomless sex—Participants were asked to indicate if they had had sex in the prior seven days. If the respondent reported engaging in sex, he was asked to provide further information on the sexual encounter that occurred in the prior seven days. Condomless sex was assessed using separate questions, asking if the participant had: 1) condomless insertive sex or not during the encounter and 2) condomless receptive sex or not during the encounter. The variable was dichotomous, indicating the absence or presence of condomless insertive sex or condomless receptive sex in the selected sexual encounter for each week. Due to the limited number of participants who had only receptive or insertive sex, the condomless insertive sex and condomless receptive sex variables were combined to produce a single condomless sex variable that was coded with 0 = *No condomless sex* or 1 = *Condomless sex*.

Serodiscordant condomless anal sex—In addition to asking questions concerning the type of sexual behavior participants engaged in (i.e., condomless insertive sex and condomless receptive sex), the diary asked questions about the HIV status of a participant's sexual partner(s). Thus, using the HIV status of the participant taken from another part of the survey along with the HIV status of the sex partner and the type of sex (i.e., condomless insertive sex, condomless receptive sex), the serodiscordant condomless anal sex variable was created. If one partner was HIV-positive and another partner was HIV-negative or unknown, then the sexual encounter was considered serodiscordant. The resulting variable was categorical with 0 = *No serodiscordant condomless anal sex encounter* and 1 = *At least one serodiscordant condomless anal sex encounter*.

Quantitative Data Analysis

Descriptive statistics, univariate analyses, and bivariate analyses were performed to describe the relationships between variables. Generalized Estimating Equations (GEE; Zeger & Liang, 1986), a form of population average analyses, were used to examine the relationship between attachment style and sexual risk behavior over the eight-week period. GEEs produce efficient estimators by estimating the average response for observations sharing the same covariates. An exchangeable correlation structure was used. In addition, robust standard errors were calculated, which produced unbiased estimators. All of the analyses used a Gaussian distribution. Models adjusted for age, relationships status, and HIV status. Two GEE models were constructed to examine the relationship between adult attachment and sexual risk behavior (i.e., condomless sex and serodiscordant condomless anal sex).

Qualitative Measures

The BCS interviews collected data on five major topics: 1) Childhood relationship with parents; 2) Motivation for sex with partner; 3) Sexual partnering and sexual behavior; 4) Sexual and racial identity; and 5) Barriers and facilitators to HIV prevention, testing, and treatment. For the purposes of this study, data were reported for the first three topics. The six questions that comprised the first topic (i.e., childhood relationship with parents) were adapted from the Adult Attachment Interview (AAI)(George, Kaplan, & Main, 1985). These items were designed to assess childhood and adult attachment. The full semi-structured AAI asks adults about their childhood memories related to their relationship with a primary caregiver. The interview aims to trigger mental representations concerning early childhood attachment relationship functioning.

Researchers have used various assessment categories for the AAI, but the most common categories are secure-autonomous, preoccupied, and dismissing-avoidant (Roisman et al., 2007). There is much debate concerning how the AAI categories map on to insecure (i.e., avoidant and anxious) attachment styles assessed via self-report; however, many researchers have found that the “dismissing” category of the AAI maps onto the avoidant attachment style while the AAI category of “preoccupied” maps onto the anxious attachment style (Mikulincer & Shaver, 2007; Roisman et al., 2007). This categorization was used in the present study.

Qualitative Data Analysis

A directed content analysis approach (Hsieh & Shannon, 2005) was used to identify themes that might help to explain the findings from the quantitative component of the study (quantitative data analysis preceded qualitative data analysis). Four members of the BCS study team began by reading all thirty transcripts to immerse themselves in the data. Next, the researchers met to discuss, compare, and develop codes for the entire interview. Several transcripts were open-coded to develop the first draft of the codebook, which included the primary and secondary codes and their definitions. Based on the modified questions from the AAI, each completed interview was coded as *Secure, Avoidant, or Anxious* and grouped as such. Next, two members of the BCS interview team worked within each of the three groups of transcripts and applied codes from the codebook. Once this part of the coding and analysis was completed, the study team members then drafted memos that reflected their

initial thoughts related to the research aims. Then after a second review of the transcripts, themes related to the quantitative hypotheses and results were identified. For instance, the first hypothesis was specifically related to the relationship between attachment and sexual behavior; thus, responses related to these concepts were coded. All interviews were transcribed and entered into NVIVO 10 software for data management and organization purposes.

After codes were developed and applied to the transcripts, similar codes were grouped together to create a coding hierarchy that allowed the researchers to assess the relationships between the codes and each of the qualitative aims. First, the researchers listed each qualitative research aim and the corresponding codes from the categories in the hierarchy. This strategy resulted in four clusters of codes that helped direct the analyses. Then the data were reviewed for overlap between codes within and between each cluster. Finally, using notes, memos, and the codebook, the data were explored to look at how the qualitative themes helped to explain the quantitative findings on attachment and sexual behavior among YBGBM. It was believed that theoretical saturation (Auerbach & Silverstein, 2003) was reached at 26 interviews but the mixed method analysis was completed with all 30 interviews.

Results

Quantitative Findings

The results for the GEE analyses are displayed in Table 2. The GEE analysis technique was used to examine the relationship between the attachment insecurity variables (i.e., attachment anxiety and attachment avoidance) and the sexual risk behavior variables. The analysis was only conducted with participants who reported having had sex during the previous 7 days. For the model predicting overall condomless sex, there were 470 total observations, 128 participants, and an average of 3.7 weeks of observations per participant (min: 1, max: 8). For the model predicting serodiscordant condomless anal sex, there were 457 total observations, 124 participants, and about 3.7 weeks of observations per participant (min: 1, max: 8). Model 1 predicting condomless sex was statistically significant ($\chi^2 = 15.85, p < .01$). Attachment avoidance was marginally statistically significant, as men who had higher levels of attachment avoidance were marginally more likely to have had condomless sex ($OR = 1.17, p < .10$). Men who were single were less likely than men in a relationship to have had a condomless sex encounter over the eight-week period ($OR = 0.38, p < .01$). Attachment anxiety was not related to the likelihood of having had a condomless sex encounter.

Qualitative Findings

The qualitative data offered a more complex understanding of respondents' views on intimate partnerships and sexual behavior, and thus helped to explore some of the complexities of the association between attachment and sexual behavior among YBGBM. Below, the three attachment types (i.e., secure attachment, avoidant attachment, and anxious attachment) organize the qualitative findings.

Secure attachment—Young men with a secure attachment style often spoke of being in love and emotionally connected with their current or previous intimate partners; they reported feeling comforted by the love they received from intimate partners. For instance, one young man aged 27 years who was currently in a monogamous relationship said:

I felt really good because he asked me to be his boyfriend. It was Christmas, and he asked me to be his boyfriend, and that's all I wanted. And I felt really good. Like I felt I was in love, I am in love, and I felt really, really good about it.

It appeared that young men with a secure attachment style were able to develop secure emotional bonds with their previous and/or current intimate partners and feel secure in their relationships.

Young men often reported positive feelings after having sex with a current and/or previous intimate partner. One man, aged 23 years, discussed his feelings after having sex with his current intimate partner. During the dialogue, the interviewer asked this man to describe how he felt after sex, to which the man replied “loved, tired, and fulfilled.” When asked to expound further on “fulfilled,” this man stated that he felt “...fulfilled emotionally—well not even emotionally, because I don't need sex. Just fulfilled—I guess just fulfilled sexually.” In addition, some young men with a secure attachment style reported wanting an emotional connection in order to have sex with another person. For example, a different 23-year-old man reported the importance of having emotional feelings for someone to have sex with them. When asked if an emotional connection with a sexual partner was important, this man stated:

It's not always important but it's important...especially with someone who I like being with. Like what are we gonna talk about after the sex and there's nothing, really to talk about. I feel like there has to be something there...

Avoidant attachment—Four sub-themes emerged regarding the relationship between attachment avoidance and sexual behavior. First, young men with an avoidant attachment style often reported having trouble building emotional bonds with intimate partners. These men attributed this difficulty creating emotional bonds with intimate partners to the many unhealthy relationships they experienced in their childhood and adulthood. Second, men with an avoidant attachment style seemed to distinguish between casual sexual relationships and relationships with partners, with whom they were currently or would like to be emotionally attached. Third, men with an avoidant attachment style reported using sex as a means to establish an emotional connection with a potential relationship partner. Lastly, some men spoke of feeling detached or uninterested in developing emotional bonds with intimate partners at all. However, in some instances young men reported understanding the benefits of being emotionally connected to another person intimately or platonically, but were unable to develop an emotional bond either due to a fear of being hurt or due to an overall lack of desire to do so.

In an attempt to facilitate bond formation with sexual partners in young adulthood, young men sometimes engaged in sexual risk behaviors such as condomless sex. The passage

below from a 29-year-old young man exemplifies how sexual risk behaviors were sometimes used in an attempt to emotionally connect with a potential sexual partner:

Okay. I think, again, it's made me a little more wise in certain things, but I think that, at times, in terms of, again, that emotional connection I felt I needed that I didn't get in my childhood. And then, on some level, still [having unprotected sex] just not as much in the present, and that is seeking [sex] in not so healthy ways – that emotional connection – as well as it's – it's acting out sexually or those kinda things...

It appeared that some men with an avoidant attachment style used sex as a means to seek out an emotional attachment to another man. For instance, one young man aged 21 years said:

I think to build—develop a connection. 'Cause, you know, you may be talking to someone, you may have an emotional connection; but sometimes, you know, having a sexual connection can be, you know—feel things a bit more.

Young men with an avoidant attachment style, similar to young men with a secure attachment style, distinguished between sex with a sexual partner they cared about and sex for sexual release only. This distinction seemed to drive the way in which young men behaved during the sexual encounter (e.g., leaving directly after the sexual act as opposed to staying). One young man aged 25 years said:

I try not to [have sex with other men] because I am in a relationship, so sometimes it's like to fuck and that's it—just to get a nut off. So, I don't wanna like get all—you know—I don't like to cuddle or anything. Like, we just had sex.

In addition, young men with an avoidant attachment style were more likely than men with a secure attachment style to report that they did not want their sexual partner to engage in emotionally intimate behaviors (e.g., cuddling) after sex. Some young men reported using sex as a way to gain gratification, but not as a means of building or maintaining an emotional bond with another man. One young man who was describing his sexual encounter with his last sexual partner explained:

Not really, cause' I do feel like I just want him to leave after I finish having sex with him anyway. I'm not really the touchy touchy feel type of guy. Some people like to lay down after they finish having sex. Not me. I'm like, okay, get out. Goodbye.

Another 24-year-old man who was asked about his motivation for sex noted, “I guess it's just pleasure, a bond I guess. For the moment at least.” The two young men above conveyed that they were less interested in forming a long-term emotional bond with sexual partners. Some young men with an avoidant attachment style described their sexual experiences in terms of pleasure seeking and less so in terms of emotional bond formation or maintenance.

Anxious attachment—Similar to young men with a secure and an avoidant attachment style, young men with an anxious attachment style often distinguished between men with whom they hook-up and men with whom they want to be in a monogamous relationship. This distinction between types of sexual partners may have driven their willingness to connect emotionally with a sexual partner. Young men with an anxious attachment style

often reported needing to feel an emotional connection with their sexual partner. Though some men participated in a casual sexual encounter, many reported wanting to be in a committed or monogamous relationship and having only one sex partner. Lastly, the interview data suggested that there was a connection between enjoying a sexual encounter and being emotionally connected to the sexual partner.

Young men often discussed the different types of sexual relationships and their level of interest in forming an emotional bond. A young man aged 27 years exemplified this in the following excerpt:

If it's not a relationship or it's not somebody you're trying to get to know the sex is just sex and you just kind of want them to go after the sex. But if it's a relationship you want to like, you know, cuddle kind of thing, having them spend days at your house instead of just a night, so it's a little bit different.

Another young man aged 22 years said:

It depends on the relationship. It could be a sexual relationship or it could be a romantic relationship. With a sexual relationship I expect—I wanna release and you can go, but if it's a romantic relationship, I wanna stay there with you. I wanna be there with you after sex. I want you—let's take a shower together.

Thus, it appears that, similar to men with an avoidant and secure attachment style, young men with an anxious attachment style had two types of sexual partners—sexual partners with whom they simply wanted to have sex and sexual partners with whom they wanted to have an emotional connection.

Men with an anxious attachment style often discussed the need for an emotional bond with sexual partners. One young man aged 29 years discussed in detail how his need for an emotional connection with a sexual partner was tied to his ability to enjoy sex with that partner. He said:

If I'm about to have sex with somebody, I like—I'm about to have an emotional connection, at least. And, I'm gonna be passionate and whatnot, and if I have that emotion, if I have that connection, then I can enjoy myself, really. If I'm not, if it's just a random person, or just something random—or somebody says the wrong thing, or something just pops in my head, I'll just get preoccupied with that. Or, my demeanor or mood just completely changes, and I don't enjoy myself.

Another young man who was in a monogamous relationship, aged 31 years, and who self-identified as being a person that perceived sex as a tool to generate emotional connectedness in a relationship stated:

Personally, I [have sex] to bring us closer. I don't like having sex outside of a relationship...but I've always been like that. I don't like one nightstands and hook ups. I can't say I've never done them, but that's not primarily who I am.

The majority of men with an anxious attachment style echoed the sentiment of the young man quoted above. They often reported not fully enjoying a casual sexual encounter or feeling unfulfilled after the sexual encounter. In addition, some young men with an anxious

attachment style reported using sex as a means to find a partner with whom they could have an emotional bond. For instance, one 31-year-old man discussed the importance of sex when attempting to form an emotional bond with another man:

Interviewee: ...I'm just looking for that special connection.

Interviewer: Okay. So the most important reason to have sex aside from the obvious is to look for a special connection.

Interviewee: Yeah. At this point in time for me.

Many young men felt that sex could lead to an emotional bond. Therefore, they often discussed their sexual relationships as a means to develop this bond with another man. Men with an anxious attachment style seemed to overwhelmingly have sex with men with whom there was already an emotional connection or use sex as a means to find an emotional connection with another man.

Discussion

The purpose of this study was to assess the relationship between attachment and sexual risk behavior. The hypothesis regarding the relationship between attachment insecurity and sexual risk behavior was not generally supported by the data. There was no relationship between attachment anxiety and the likelihood of having had a condomless sex encounter or a serodiscordant condomless anal sex encounter. In addition, there was no relationship between attachment avoidance and the likelihood of having had a condomless sex encounter. There was also no association between attachment anxiety and the likelihood of having had a condomless sex encounter. These findings on attachment insecurity were surprising, given that previous research suggests that attachment anxiety is associated with a failure to negotiate sexual relationships, resulting in low condom self-efficacy (Feeney, Peterson, Gallois, & Terry, 2000) and with an increased likelihood of being coerced into unwanted sexual activities (Davis, Shaver, & Vernon, 2003; Mikulincer & Shaver, 2007). As these behaviors can increase an individual's risk of HIV infection and transmission and thus can be associated with physical health outcomes, it is important to situate the results from the present study in the current literature on the intersection between relational dynamics and sexual behavior.

Other studies offer insight into the factors that may be related to the relationship between attachment insecurity and sexual risk behavior. For instance, Edwards and Barber (2010) found that rejection sensitivity and anxious attachment are similar constructs that relate to less condom use with intimate and casual sexual partners. The authors posit that understanding the relationship between rejection sensitivity and attachment insecurity may be of value in helping to understand how interpersonal factors relate to increased sexual risk behavior. Other researchers have suggested that factors such as motivations for sex (Schachner & Shaver, 2004), self-esteem and negative affect (Gentzler & Kerns, 2004), and relationship satisfaction (Kershaw et al., 2007) mediate the relationship between attachment insecurity and sexual risk behaviors. Research has also shown that emotional closeness to sexual partners and/or sexual relationship satisfaction may be key to understanding the

attachment insecurity/sexual behavior relationship (Bogaert & Sadava, 2002; Strachman, Impett, Henson, & Pentz, 2009).

Also noteworthy are the several different configurations of sexual relationships (e.g., long-term sexual relationships vs. one night stands) that could complicate the understanding of the link between adult attachment and sexual risk behavior. Much of the theorization of adult attachment and sexual behavior has been confined to couples (e.g., married couples and long term dating couples; (Stefanou & McCabe, 2012) and research examining the relationship between attachment and forms of sexual trauma (e.g., intimate partner violence; (Bogaert & Sadava, 2002; Feeney & Raphael, 1992). There has been limited research that looks at sexual risk behavior and attachment among single individuals and LGB populations. Further, there has been limited research examining the relationship between attachment orientation and specific sexual risk behaviors (e.g., condomless sex and serodiscordant condomless anal sex). Despite the lack of significant quantitative findings, the present study helped to address some of these gaps in the literature.

The qualitative findings were more consistent with previous research. For instance, men with a secure attachment style were more likely to report being in a monogamous or committed relationship, feeling emotionally close to their last sexual partner, and/or currently having (or having had in the last three months) successful intimate relationships. For men with a secure attachment style, the ability to form and maintain emotional bonds in childhood was related to being able to maintain these emotional bonds with sexual partners in adulthood. In contrast, some men with either an anxious or avoidant childhood attachment style reported difficulties in forming relationships with potential partners in adulthood, which appeared to be related to their difficulties in forming relationships in childhood. These findings are supported by the research literature examining linkages between childhood and adult attachment style (Bogaert & Sadava, 2002). Though research is limited, attachment researchers have proposed and tested several theories that examine the process by which childhood attachment is related to adult relationship functioning (Bogaert & Sadava, 2002).

The qualitative findings allowed further exploration of the ways in which YBGBM form emotional bonds with sexual and/or committed partners and how these connections inform their perceptions of their sexual behaviors. Along these lines, some key themes that emerged from the qualitative interviews concerned the types of partnerships and the ways in which sex was used differently by men depending on attachment style. Interestingly, regardless of their attachment style, YBGBM distinguished between casual sexual partners with whom they did not want an emotional bond and sexual partners with whom they potentially wanted to be emotionally close. However, men with an avoidant attachment style were more likely than men with a secure attachment style to have casual sexual partners and not be in a committed relationship. Also, unlike men with a secure attachment style, men with an avoidant attachment style seemed to have multiple different narratives in terms of their relationships with sexual partners.

Young men with an insecure attachment style reported using sex as a means to establish an emotional bond with a potential intimate partner, participating in potentially risky sexual behaviors in an attempt to establish an emotional bond with another man, and/or not being

particularly interested in feeling a connection with sexual partners (young men with an avoidant attachment style only). Men with an anxious attachment style in particular reported using sex as a means to create or reinforce an emotional bond with a sexual partner. Insecurely attached individuals also tended to not be in a committed relationship; however, men with an anxious attachment style were more likely to want to be in a monogamous relationship. Young men who were more secure also used sex to reinforce an emotional bond but were more likely to be in a committed relationship.

These findings are supported by prior research. The research concerned with understanding the association between attachment and sexual behavior demonstrates that attachment style is related to different sexual behaviors and partnership forms (Bogaert & Sadava, 2002). Hazan and Shaver (1987) found that adults with a secure attachment style are more likely to have longer relationships than individuals with an insecure attachment style. In addition, researchers have found that men who are more avoidant are more likely to have casual sexual partners than men with an anxious or secure attachment style (Brennan & Shaver, 1995; Miller & Fishkin, 1997). Despite this research, questions remain about the process by which attachment style may be associated with sexual relationships—whether casual or committed—and attitudes regarding uses of sex.

The qualitative data provide insight into how sexual relationship configurations may be associated with sexual risk behavior. Young men who were more secure seemed to desire a monogamous relationship as defined by having sex with only one partner. Young men with an anxious attachment style expressed this same sentiment yet were not often in a monogamous relationship and had multiple casual sex partners. Some young men with an avoidant attachment style also reported a similar relational interest while others reported not being interested in an intimate relationship. These results are supported by the extant research literature examining the association between attachment and sexual behavior (Stefanou & McCabe, 2012). Attachment researchers have posited that attachment avoidance could be related to HIV risk due to the increased likelihood that these individuals have multiple casual sex partners as compared with individuals with a secure attachment style (Anderson et al., 1992). Relatedly, individuals high in attachment anxiety may be more likely to engage in sexual risk behavior due to their need to feel emotionally bonded to another individual, thus resulting in frequent sexual encounters with casual partners (Feeney, 2000). However, individuals with an avoidant attachment style may use condoms more frequently as a consequence of having more sexual partners, and thereby limit their risk of HIV infection and transmission.

Limitations

Although the present study demonstrates considerable strengths, there are some limitations. First, the results are not generalizable to the general population of YBGBM in cities and contexts other than New York City. However, this study addresses an important avenue for future research with different YBGBM in different settings. Second, young men were not asked about their Pre-exposure prophylaxis (PrEP) use or serosorting practices, which may have influenced the quantitative and qualitative findings. Limitations notwithstanding, this

study provides novel information regarding how attachment categories may influence sexual behaviors and sexual risk behaviors among YBGBM.

Conclusion and Future directions

Both qualitative results suggest that the relationship between attachment and sexual risk behavior may be associated with other relationship factors, while the quantitative findings were not significant. The qualitative findings highlight emotional bond formation and reinforcement with a sexual partner as a significant component of sexual relationships among YBGBM. However, the wide array of relationship configurations complicates the ability to draw conclusions about the specific pathways by which childhood attachment, adult attachment, and sexual behavior are related. After analyzing both the quantitative and qualitative data, it is clear that future research could benefit from further examination of potential mechanisms associated with attachment, sexual relationships, and sexual risk behaviors.

Specifically, researchers should focus on: 1) the association between attachment and sexual risk behaviors within different configurations of sexual relationships (e.g., casual dating relationship, monogamous relationship, and single individuals); 2) the particular internalized experiences (e.g., rejection sensitivity) that influence sexual motivations of insecurely attached YBGBM; 3) the strategies, if any, young men with insecure attachment styles use to increase their ability to form emotional bonds; 4) the links between attachment, sexual behavior, and characteristics of the sexual relationship (e.g., length of relationship, relationship satisfaction, perceived support from a sexual or intimate partner); and 5) factors that may moderate or mediate the relationship between attachment insecurity and sexual risk behavior among YBGBM. Such inquiries may provide a fuller understanding of the relationship between attachment insecurity and sexual risk behavior among YBGBM. Further research in these areas could also be used to design interventions that could help reduce HIV risk among YBGBM.

Acknowledgments

This research was supported by the U.S. Centers for Disease Control and Prevention (U01 PS000700—Minority HIV/AIDS Research Initiative; PI: Patrick A. Wilson) and The National Institutes of Mental Health (1 F31 MH087125-01; PI: Stephanie H. Cook). Views expressed in this manuscript do not necessarily represent the views of the funding agencies.

References

- Ahrens KR, Ciechanowski P, Katon W. Associations between adult attachment style and health risk behaviors in an adult female primary care population. *Journal of Psychosomatic Research*. 2012; 72(5):364–370. [PubMed: 22469278]
- Anderson, RM.; May, RM.; Anderson, B. *Infectious diseases of humans: Dynamics and control*. Vol. 28. Oxford: Oxford University Press; 1992.
- Auerbach, C.; Silverstein, LB. *Qualitative data: An introduction to coding and analysis*. New York, NY: New York University Press; 2003.
- Bogaert AF, Sadava S. Adult attachment and sexual behavior. *Personal Relationships*. 2002; 9(2):191–204.

- Brennan KA, Shaver PR. Dimensions of adult attachment, affect regulation, and romantic relationship functioning. *Personality and Social Psychology Bulletin*. 1995; 21(3):267–283.
- Calsyn DA, Campbell AN, Tross S, Hatch-Maillette MA. Is monogamy or committed relationship status a marker for low sexual risk among men in substance abuse treatment? Clinical and methodological considerations. *The American Journal of Drug and Alcohol Abuse*. 2011; 37:294–300. [PubMed: 21854271]
- Center for Disease Control and Prevention. Prevalence and awareness of HIV infection among men who have sex with men --- 21 Cities, United States, 2008. *MMWR Morbidity & Mortality Weekly Report*. 2010; 59:1201–1207. Retrieved from <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5937a2.htm>. [PubMed: 20864920]
- Ciesla JA, Roberts JE, Hewitt RG. Adult attachment and high-risk sexual behaviour among HIV-positive patients. *Journal of Applied Social Psychology*. 2004; 34(1):108–124.
- Clark, VLP.; Creswell, JW. *Designing and conducting mixed methods research*. 2nd. Thousand Oaks, CA: Sage Publications; 2011.
- Creswell, JW. *A concise introduction to mixed methods research*. Thousand Oaks, CA: Sage Publications; 2014.
- Davis D, Shaver PR, Vernon ML. Physical, emotional, and behavioral reactions to breaking up: The roles of gender, age, emotional involvement, and attachment style. *Personality and Social Psychology Bulletin*. 2003; 29(7):871–884. [PubMed: 15018675]
- Davis D, Shaver PR, Widaman KF, Vernon ML, Follette WC, Beitz K. “I can’t get no satisfaction”: Insecure attachment, inhibited sexual communication, and sexual dissatisfaction. *Personal Relationships*. 2006; 13(4):465–483.
- Edwards GL, Barber BL. The relationship between rejection sensitivity and compliant condom use. *Archives of Sexual Behavior*. 2010; 39(6):1381–1388. [PubMed: 19760145]
- Feeney JA. Issues of closeness and distance in dating relationships: Effects of sex and attachment style. *Journal of Social and Personal Relationships*. 1999; 16(5):571–590.
- Feeney JA. Implications of attachment style for patterns of health and illness. *Child Care Health and Development*. 2000; 26(4):277–288.
- Feeney, JA. Adult romantic attachment: Developments in the study of couple relationships. In: Cassidy, J.; Shaver, PR., editors. *Handbook of attachment: Theory, research, and clinical applications*. 2nd. New York, NY: Guilford Press; 2008. p. 456–481.
- Feeney JA, Noller P, Patty J. Adolescents' interactions with the opposite sex: Influence of attachment style and gender. *Journal of Adolescence*. 1993; 16(2):169–186. [PubMed: 8376641]
- Feeney JA, Peterson C, Gallois C, Terry DJ. Attachment style as a predictor of sexual attitudes and behavior in late adolescence. *Psychology & Health*. 2000; 14(6):1105–1122. [PubMed: 22175265]
- Feeney JA, Raphael B. Adults attachments and sexuality: Implications for understanding risk behaviors for HIV-Infection. *Australian and New Zealand Journal of Psychiatry*. 1992; 26(3):399–407. [PubMed: 1417625]
- Fraley RC, Waller NG, Brennan KA. An item response theory analysis of self-report measures of adult attachment. *Journal of Personality and Social Psychology*. 2000; 78:350–365. [PubMed: 10707340]
- Gentzler AL, Kerns KA. Association between insecure attachment and sexual experiences. *Personal Relationships*. 2004; 11(2):249–265.
- George, C.; Kaplan, N.; Main, M. *Adult attachment interview (AAI)*. University of California at Berkeley; 1985. Unpublished manuscript
- Grossman, KE.; Grossman, K.; Waters, E. *Attachment from infancy to adulthood*. New York, NY: Guilford; 2005.
- Hazan C, Shaver P. Romantic love conceptualized as an attachment process. *Journal of Personality and Social Psychology*. 1987; 52(3):511–524. [PubMed: 3572722]
- Hazan C, Shaver PR. Attachment as an organizational framework for research on close relationships. *Psychological Inquiry*. 1994; 5(1):1–22.
- Hazan, C.; Zeifman, D.; Middleton, K. *Adult romantic attachment, affection, and sex*; Paper presented at the 7th International Conference on Personal Relationships; Groningen, The Netherlands. 1994 Jul.

- Hsieh H, Shannon SE. Three approaches to qualitative content analysis. *Qualitative Health Research*. 2005; 15(9):1277–1288. [PubMed: 16204405]
- Kalichman SC, Roffman RA, Picciano JF, Bolan M. Risk for HIV infection among bisexual men seeking HIV-prevention services and risks posed to their female partners. *Health Psychology*. 1998; 17(4):320–327. [PubMed: 9697941]
- Kartalova-O'Doherty Y, Doherty DT. Satisfied carers of persons with enduring mental illness: Who and why? *International Journal of Social Psychiatry*. 2009; 55(3):257–271. [PubMed: 19383669]
- Kershaw TS, Milan S, Westdahl C, Lewis J, Rising SS, Fletcher R, Ickovics J. Avoidance, anxiety, and sex: The influence of romantic attachment on HIV-risk among pregnant women. *Aids and Behavior*. 2007; 11(2):299–311. [PubMed: 16865541]
- Khoury CB, Findlay BM. What makes for good sex? The associations among attachment style, inhibited communication and sexual satisfaction. *Journal of Relationships Research*. 2014; 5
- Lick DJ, Durso LE, Johnson KL. Minority stress and physical health among sexual minorities. *Perspectives on Psychological Science*. 2013; 8(5):521–548. [PubMed: 26173210]
- Maulsby C, Millett GA, Lindsey K, Kelley R, Johnson K, Montoya D, Holtgrave D. HIV among Black men who have sex with men (MSM) in the United States: A review of the literature. *Aids and Behavior*. 2013; 18(1):1–16.
- McElwain AD, Kerpelman JL, Pittman JF. The role of romantic attachment security and dating identity exploration in understanding adolescents' sexual attitudes and cumulative sexual risk-taking. *Journal of Adolescence*. 2015; 39:70–81. [PubMed: 25598388]
- Mikulincer, M.; Shaver, PR. *Adult attachment: Structure, dynamics, and change*. New York, NY: Guilford; 2007.
- Miller, LC.; Fishkin, SA. On the dynamics of human bonding and reproductive success: Seeking windows on the adapted-for human–environmental interface. In: Simpson, JA.; Kenrick, DT., editors. *Evolutionary Social Psychology*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.; 1997. p. 97-236.
- Millett GA, Flores SA, Peterson JL, Bakeman R. Explaining disparities in HIV infection among Black and White men who have sex with men: A meta-analysis of HIV risk behaviors. *AIDS Care*. 2007; 1:2083–2091.
- Millett GA, Peterson JL, Flores SA, Hart TA, Jeffries WL, Wilson PA, Fenton KA. Comparisons of disparities and risks of HIV infection in Black and other men who have sex with men in Canada, UK, and USA: A meta-analysis. *The Lancet*. 2012; 380(9839):341–348.
- Mustanski B, Lyons T, Garcia SC. Internet use and sexual health of young men who have sex with men: A mixed-methods study. *Archives of Sexual Behavior*. 2011; 40(2):289–300. [PubMed: 20182787]
- Olley BO. The role of insecure and fearful attachment styles in sexual risk behaviors among HIV-positive women attending a support group in Ibadan, Nigeria. *Gender and Behaviour*. 2010; 8(2): 3389–3406.
- Oster AM, Wiegand RE, Sionean C, Miles IJ, Thomas PE, Melendez-Morales L, Millett GA. Understanding disparities in HIV infection between Black and White MSM in the United States. *Aids*. 2011; 25(8):1103–1112. [PubMed: 21505305]
- Ridge SR, Feeney JA. Relationship history and relationship attitudes in gay males and lesbians: Attachment style and gender differences. *Australian and New Zealand Journal of Psychiatry*. 1998; 32(6):848–859. [PubMed: 10084350]
- Roisman GI, Holland A, Fortuna K, Fraley RC, Clausell E, Clarke A. The Adult Attachment Interview and self-reports of attachment style: An empirical rapprochement. *Journal of Personality and Social Psychology*. 2007; 92(4):678–697. [PubMed: 17469952]
- Schachner DA, Shaver PR. Attachment dimensions and sexual motives. *Personal Relationships*. 2004; 11(2):179–195.
- Sample SJ, Patterson TL, Grant I. Partner type and sexual risk behavior among HIV positive gay and bisexual men: Social cognitive correlates. *AIDS Education and Prevention*. 2000; 12(4):340–356. Retrieved from <http://search.proquest.com/docview/197990481?accountid=14667>. [PubMed: 10982123]

- Simpson JA, Collins WA, Tran S, Haydon KC. Attachment and the experience and expression of emotions in romantic relationships: A developmental perspective. *Journal of Personality and Social Psychology*. 2007; 92(2):355–367. [PubMed: 17279854]
- Simpson JA, Gangestad SW. Individual differences in sociosexuality: Evidence for convergent and discriminant validity. *Journal of Personality and Social Psychology*. 1991; 60(6):870–883. [PubMed: 1865325]
- Simpson JA, Rholes WS. Attachment and relationships: Milestones and future directions. *Journal of Social and Personal Relationships*. 2010; 27(2):173–180.
- Snowden JM, Raymond HF, McFarland W. Prevalence of seroadaptive behaviours of men who have sex with men, San Francisco, 2004. *Sexually Transmitted Infections*. 2009; 85(6):469–476. [PubMed: 19505875]
- Starks TJ, Parsons JT. Adult attachment among partnered gay men: Patterns and associations with sexual relationship quality. *Archives of Sexual Behavior*. 2014; 43(1):107–117. [PubMed: 24297659]
- Stefanou C, McCabe MP. Adult attachment and sexual functioning: A review of past research. *Journal of Sexual Medicine*. 2012; 9(10):2499–2507. [PubMed: 22759319]
- Strachman A, Impett EA, Henson JM, Pentz MA. Early adolescent alcohol use and sexual experience by emerging adulthood: A 10-year longitudinal investigation. *Journal of Adolescent Health*. 2009; 45(5):478–482. [PubMed: 19837354]
- Sullivan PS, Salazar LF, Buchbinder S, Sanchez TH. Estimating the proportion of HIV transmissions from main sex partners among men who have sex with men in five US cities. *Aids*. 2009; 23(9): 1153–1162. [PubMed: 19417579]
- Teddlie, C.; Tashakkori, A. *Handbook of mixed methods in social & behavioral research*. 1st. Thousand Oaks, CA: Sage Publications; 2003. Major issues and controversies in the use of mixed methods in the social and behavioral sciences; p. 3-50.
- Zeger SL, Liang K. Longitudinal data analysis for discrete and continuous outcomes. *Biometrics*. 1986; 42(1):121–130. [PubMed: 3719049]

Table 1

Structured Diary Demographic and Covariate Characteristics of Young Black Gay and Bisexual Men in New York City at Week 1 (n = 153)

	N/% or (M/SD)
Age	24.6 (4.2)
Race ^a	
African-American/Black	89 (59.3)
Black Hispanic/Latino	32 (21.3)
Afro-Caribbean/West Indian	9 (6.0)
Mixed-Race	20 (13.3)
Education	
Less than HS diploma	10 (6.5)
HS Diploma/GED	110 (71.9)
Some College	30(19.6)
College or Graduate Degree	3 (1.96)
Employment ^b	
Working	50 (34.5)
Student	38 (26.2)
Unemployed	57 (39.3)
HIV Status	
HIV-Negative	117 (76.5)
HIV-Positive	36 (23.5)
Relationship Status	
Married/Have a boyfriend	30 (19.6)
Single	123 (80.4)

^a 3 participants had missing data.

^b 8 participants had missing data.

Table 2

GEE Analyses for Adult Attachment Insecurity Predicting Condomless Sex and Serodiscordant Condomless Anal Sex among Young Black Gay and Bisexual Men in New York City

Variable	Model 1		Model 2	
	Condomless Sex (<i>n</i> = 128)		Serodiscordant Condomless Anal Sex (<i>n</i> = 124)	
	OR	Robust SE	OR	Robust SE
Attachment Anxiety	1.03	0.11	1.24	0.21
Attachment Avoidance	1.17	0.11	0.98	0.19
Age	1.04	0.37	0.96	0.04
Single	0.38*	-0.13	0.70	0.35
HIV-Negative	1.53	0.53	-	-

* $p < .05$,