Perceived Likelihood of HIV and Sexually Transmitted Infection Acquisition Among Men Who Have Sex With Men

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Men who have sex with men (MSM) continue to be affected by HIV, particularly in the United States, where 61% of estimated new infections in 2009 were attributed to this population (Prejean et al., 2011). To account for this trend, researchers have pointed to several individual-level factors associated with sexual risk taking among these men, including: optimistic attitudes (or fewer concerns about transmission) resulting from advances in treatment (Crepaz, Hart, & Marks, 2004; Kalichman et al., 2007; Rowniak, 2009), higher (Molitor, Facer, & Ruiz, 1999) or lower perceived risk of infection (MacKellar et al., 2007; Mayer et al., 2012), fatalistic attitudes about remaining HIV negative (Yi, Sandfort, & Shidlo, 2010), and safer sex fatigue in HIV-negative men (Ostrow et al., 2008; Rowniak, 2009).

With few exceptions, much of this research has focused on how MSM perceive their risk of acquiring or transmitting HIV, with less attention paid to other sexually transmitted infections (STI). Nevertheless, rates of STIs in the United States have also increased among this population (Centers for Disease Control and Prevention, 2011), coinciding with a rise in sexual risk taking (Klausner & Wong, 2003). Holt, Bernard, and Race (2010) found that MSM consider STIs to be less important than HIV. Conversely, van der Snoek and colleagues (2006) reported no differences in perceived susceptibility to HIV or STIs. Two additional studies noted that some men with low perceived STI risk reported behaviors that placed them at a high risk for HIV/STI acquisition or transmission (Mimiaga, Goldhammer, Belanoff, Tetu, & Mayer, 2007; Taylor et al., 2011).

The issue of when MSM anticipate acquiring HIV/STIs is less explored in the literature, with researchers typically assessing only general or lifetime perceived risk. Knowing if these men perceive risks in the near future and/or in their lifetimes can guide sexual health education and risk reduction counseling in primary care settings. The current study attempted to clarify perceptions that MSM have about their risks of becoming infected with HIV and other STIs, specifically during three time periods (i.e., the next 6 months, the next year, and lifetime), as well as to examine potential associations with high-risk sexual behaviors.

Method

The data presented in this article are drawn from a cross-sectional study of 204 MSM who completed an Internet survey from May to September 2008 regarding their: (a) sexual venue attendance (bathhouse, sex club, bar, video/buddy booth, public bathroom, public park, or gym/health club) in the previous month; (b) high-risk sexual behaviors during venue attendance (oral-receptive sex with ejaculation in the mouth, rimming/oral-anal contact, and anal sex without a condom); (c) demographics (age, HIV status); (d) perceived likelihood of becoming infected with HIV; and (e) perceived

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likelihood of becoming infected with an STI. For the last two items, men were specifically asked, *How likely are you to become infected with HIV during: the next 6 months, the next year, and your lifetime?* and *How likely are you to become infected with an STI (Sexually Transmitted Infection) other than HIV during: the next 6 months, the next year, and your lifetime?* Using an ordinal scale, response choices were defined as: 1 = *very unlikely*, to 10 = *very likely*. Participants who indicated that they were HIV infected received only those questions pertaining to the perceived likelihood of becoming infected with an STI. Men were eligible for the study if they actively engaged in sexual behavior with other men and were at least 18 years of age.

Procedure

The study relied on a multi-pronged approach to Internet-based recruitment occurring in two phases: (a) strategic opportunistic sampling (Harding & Peel, 2007), whereby research study solicitations containing a survey link were e-mailed directly to lesbian, gay, bisexual, and transgender community LISTSERVs; and (b) advertisements were posted to online bulletin boards frequented by MSM (e.g., *Craigslist* and *Backpage*). Specifically, the author posted study advertisements in both personals and volunteer categories in urban centers with high percentages of gay and bisexual men (e.g., New York City metropolitan area including parts of New Jersey and Connecticut; Los Angeles; San Francisco). Venue-based recruitment efforts were attempted but proved to be unsuccessful. A full description of sampling procedures has been provided elsewhere (Downing, 2012). Recruitment solicitations indicated that there was a chance to win a $50 prize and instructed potential participants to contact the study e-mail address requesting a link to the Internet survey.

After accessing the survey, participants were prompted to read a consent page and click their agreement. This page informed participants that the survey would take approximately 20 minutes to complete. At the end of the survey, individuals were given the option to provide an e-mail address for entry into a random drawing for one of two $50 electronic gift certificates. The institutional review board affiliated with the author's university approved the study protocol.

Data Analysis

Data were analyzed using StatPlus (Version 2009; AnalystSoft, Vancouver, BC, Canada). Kruskal-Wallis analysis-of-variance tests were used to examine differences in perceived likelihood of becoming infected with HIV or an STI by participant age. Friedman analysis-of-variance tests were used to examine changes in perceived likelihood of HIV infection or STI across the three projected time periods. Post hoc analyses were conducted using Wilcoxon matched-pairs tests. Wilcoxon matched-pairs tests were also used to compare participants' perceived likelihood of HIV infection with their perceived likelihood of becoming infected with an STI during each time period. Mann-Whitney U tests were conducted to compare differences in perceived likelihood of HIV infection or STI by venue attendance (*yes/no*) and engagement in risky sexual behaviors (oral-receptive sex with ejaculation in the mouth, rimming, anal sex without a condom) during recent venue attendance. A p-value of .05 or less was considered to indicate statistical significance.

Results

A total of 204 surveys were completed and subjected to data analysis. Participants ($N = 191$) reported their ages as follows: 18–24 (10.5%), 25–29 (9%), 30–40 (31%), 41–60 (43.5%), and older than 60 years (6%). The perceived likelihood of becoming infected with HIV or an STI did not differ by participant age for any of the three time periods. For HIV status, most of the participants reported that they were not infected with HIV (85%); a small percentage indicated that they were infected with HIV (6%) or that they did not know their status (9%). Descriptive data for high-risk sexual behaviors were as follows: anal sex without a condom ($n = 33$, median [Mdn] = 4, interquartile range [IQR] = 2–8.5); oral-receptive sex with ejaculation in the mouth ($n = 60$, $Mdn = 4$, IQR = 2–9); and rimming ($n = 41$, $Mdn = 2$, IQR = 1.25–7.5).

Although participants rated their likelihood of becoming infected with HIV as *low* for each of the three time periods, these ratings significantly increased with projected time: 6 months ($Mdn = 1$,