SEXUAL SATISFACTION, IDENTITY AND SERO-ADAPTATION: AN INVESTIGATION INTO PERSONALITY AND BEHAVIOURAL CORRELATES OF BAREBACK IDENTITY AND BEHAVIOUR IN MEN WHO HAVE SEX WITH MEN

by

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A thesis submitted in conformity with the requirements for the degree of Master of Arts in Clinical and Counselling Psychology
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Abstract

Barebacking, or condomless anal intercourse in the presence of risk of contracting HIV, has emerged as a common phenomenon between men who have sex with men (MSM). The present cross-sectional study investigated psychological correlates of barebacking behaviour and identity, as well as how MSM increase their sexual satisfaction while reducing risk of HIV transmission. Two hundred and fifty-six MSM across Canada and the US were recruited for an online survey. Men who engaged in barebacking were significantly more likely to be HIV-positive, be higher in sexual sensation-seeking, meet sexual partners online, and use substances before and during sex. Self-identified barebackers were also more sexually satisfied than non-barebackers. Further, MSM who engaged in barebacking were found to use more sero-adaptive strategies, which are harm-reduction techniques to reduce risk of HIV transmission such as strategic positioning and taking PrEP. Barebacking should be framed within the context of recent advancements in biomedical HIV-treatment and prevention.

Keywords: HIV, Sexuality, Gay, bisexual and other men who have sex with men, Barebacking
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Introduction

In 2012, men who have sex with men (MSM) accounted for 50.3 % of HIV-positive test reports with known exposure in Canada, which is the largest single exposure category (Public Health Agency of Canada, 2012). Similarly, MSM accounted for 63% of all new HIV infections in 2010 in the United States. Previous research and intervention efforts have largely focused on behavioural issues such as reducing high-risk, or unprotected sex (Kalichman et al., 1997), increasing condom use (Varghese et al., 2002), increasing self-disclosure of HIV status to sexual partners (Bird, 2011), and increasing HIV testing (Myers et al, 1996). Despite these efforts, rates of condomless anal intercourse (CLAI) remain high. For example, a meta-analysis of 30 studies indicated that the prevalence in the US of having engaged in CLAI with any male partner was 43% among HIV-positive men (Crepaz et al., 2009). Research reveals a gap between intention to have safe sex and subsequent sexual behaviour in some MSM. An online survey of 2058 MSM in France found that despite the fact that intentions to use condoms with casual partners were high, one-third of the respondents reported CLAI with partners met online (Adam et al., 2011). Further, a longitudinal study of 732 MSM found that those who intended to use condoms consistently did not do so more frequently than men who expressed no such intention (McFarland et al., 2012). This gap between intention and behaviour may partly contribute to the continued high prevalence of HIV in MSM, although some MSM express no intention to use condoms, indicating that the “social boundaries of sexual risk-taking have changed” (Berg, 2008, p. 755). Barebacking\textsuperscript{1}, or condomless anal sex in the presence of risk of contracting HIV, has emerged as a common phenomenon among both HIV-positive and some HIV-negative MSM (Parsons & Bimbi, 2007). Furthermore, barebacking is not only a sexual behaviour, but has also developed as a personal identity and a ‘micro-culture’ organized around the eschewing of condoms (Halkitis, 2007). A recent study on self-identified barebackers revealed that sexual pleasure and intimacy was the most frequently cited reason for engaging in barebacking (Carballo-Dieguez et al., 2011). In addition, a (2008) review article by

\textsuperscript{1} See “Barebacking: Definitional Debates” for a more thorough examination of the term
Berg indicates that barebacking is a socioemotional experience that increases intimacy through semen exchange. Earlier HIV-prevention research by Catania et al. (1989) emphasized the need to incorporate the concept of sexual enjoyment and pleasure into prevention interventions for MSM. However, few published HIV intervention studies propose approaches that are organized around making sex both safe and pleasurable. The gap between intention and behaviour concerning condom use, as well as the intentional forgoing of condoms, reveal a need to focus on minimizing risk of HIV transmission while maximizing sexual pleasure and intimacy in MSM.

There are a number of contextual and biomedical strategies that barebackers may use to reduce risk of HIV transmission while maximizing their sexual pleasure. ‘Sero-adaptive practices’ include sero-sorting (having sex with men who have the same HIV status), sero-positioning (having the higher risk partner be the receptive partner during anal sex), taking pre- or post-exposure prophylaxis (preventative anti-retroviral medication), and frequent HIV testing for those who are as yet uninfected or taking anti-retroviral medication and ensuring a low viral load among those who are HIV-positive (Cassels & Katz, 2013). Furthermore, HIV-prevention efforts that promote condom use 100% of the time may paradoxically reinforce rates of unprotected sex, as self-identified barebackers may resist dominant normative narratives, and the forbidden nature of condomless sex may thereby become more sexually arousing and exciting (Crossley, 2004). The evidence suggests that pleasure is a priority for many MSM and especially for self-identified barebackers; therefore HIV prevention research and intervention should take this into account.

Additional factors that have been found to be associated with barebacking behavior are cognitive, behavioural and personality factors such as sexual sensation seeking (Kalichman, 1999), treatment optimism and safe sex fatigue (Adam et al., 2005). Substance use (Ross et al., 2001) has also been found to contribute to bareback sex in MSM. Most published research on barebacking frames condomless anal sex as a public health crisis (Grov, Parsons & Bimbi, 2010; Halkitis, 2007; Parsons & Bimbi, 2007). However, while some bareback sex may lead to transmission of HIV, recent research reveals little evidence of HIV transmission during condomless anal sex when the seropositive partner is taking ARVs and has an undetectable viral load.
(Rodger et al., 2015). A more in-depth investigation into how both HIV-positive and HIV-negative MSM may be maximizing their sexual pleasure while simultaneously reducing risk of HIV transmission and other sexually transmitted infections (STIs) is warranted.

The current study seeks to add to the barebacking literature by examining the following factors: (1) personality and behavioural correlates of bareback identity and behavior such as treatment and prevention optimism, sexual sensation-seeking, online sex-seeking and substance use during sex (2) perceived emotional, physical and psychological benefits of barebacking in MSM (3) how sexual satisfaction and pleasure relate to bareback identity and behaviour compared to sex with condoms (4) what factors facilitate or interfere with sexual satisfaction in MSM overall, and (5) how frequently do those who bareback use harm-reduction or sero-adaptive strategies compared with MSM who do not bareback.

**Review of the Literature**

**Barebacking: Definitional Debates**

Condomless anal intercourse in the presence of risk of contracting HIV has arisen as a recent phenomenon that ranges from occasional behaviour to a barebacker identity in MSM (Parsons & Bimbi, 2007). Empirical research on the barebacking phenomenon has varied in its operationalization of the term; some researchers use intention and presence of risk in UAI as the hallmark of barebacking behaviour (Bancroft et al., 2003; Grov, Parsons & Bimbi, 2010), whereas other studies emphasize self-identification and identity as a barebacker (Halkitis, 2007). Such a definitional disparity proves to be hazardous in academic research, as Halkitis et al. (2005a) posit that “a man who thinks of himself as a ‘barebacker’ does not necessarily have the same psychological profile or motivations as another who eschews a ‘barebacking identity’ but who nevertheless practices unprotected anal sex” (p. S4). Additionally, definitional variation exists both between academics and the MSM community and within the MSM community itself. A qualitative study of 120 men who were recruited by answering affirmatively to ‘are you into barebacking or do you consider yourself a barebacker?’ found that the majority of respondents defined ‘barebacking’
simply as condomless sex, while a minority of respondents mentioned intentionality and awareness of risk in their definitions of bareback (Carballo-Dieguez et al., 2009). Furthermore, some ethnic minority respondents believed that ‘bareback’ is a term that ‘White folks’ use, while they preferred terms such as ‘raw’ or ‘skin-to-skin’. Additionally, one third of respondents self-identified as barebackers, some participants expressed confusion around whether or not the act of having bareback sex qualified them as a ‘barebacker’ (Carballo-Dieguez et al., 2009). Evidently, there is a lack of consensus concerning a commonly understood and accepted definition of barebacking.

**Barebacker vs. Barebacking: Identity vs. Behaviour**

Barebacking behaviour or condomless anal sex does not necessitate a barebacker identity. Research on the formation of homosexual identity, for example, reveals that it is a complex, interactional, multi-step process (Rosario et al., 2006). A theoretical model of homosexual identity formation suggests that it involves linking “assigned personal meaning and behaviour,” (Cass, 1979, p. 220), and often requires positive social reinforcement. As mentioned above, those who strongly identify as a barebacker may have a different psychosexual profile than those who may practice CLAI but who do not claim a barebacking identity. Thus, identity may be a key construct to explore when investigating the psychosexual correlates of barebacking. While Parsons & Bimbi (2007) found that 72% of those who claimed a bareback identity compared with 30% of those who didn’t had UAI in the past 3 months, Halkitis (2007) found no direct relationship between strength of barebacking identity and frequency of CLAI or number of bareback partners. Therefore, strong identification as a barebacker may not be directly associated with barebacking behaviour. However, differences in perceptions of barebacking exist between those who practice CLAI and those who identify as barebackers. In Halkitis’ (2007) study, those who scored higher on a measure of barebacking identity perceived greater psychological, physical and emotional benefits to barebacking including feelings of intimacy, increased pleasure and increased perceptions of masculinity than those who scored lower. Though barebacking increases the risk of STI and HIV transmission, the social identity that surrounds it may facilitate connection between men who seek to have bareback sex (Halkitis, Parsons &
A number of studies have explored the impact of social identity and peer norms on sexual risk and safety in the gay community. In the past, sexual safety and risk has been found to be a social process. Gay identity, integration into and identification with a gay community are associated both with positive attitudes toward safe sex and practicing safer sex (Joseph, Adib, Joseph, & Tal, 1991; Ridge, Plummer, & Minichiello, 1994; Mortin & Duck, 2000). Morin et al. (2003) suggest that a shift in peer norms occurred in the gay community from the mid 1990’s to the early 2000’s whereby MSM went from reporting peer pressure for condom use to feeling pressured to bareback. While this may be true, shifts in such cultural norms are difficult to quantify, and the increased CLAI rates are also specific to certain subsets of the gay community. For example, those who identify as barebackers are five times more likely to be living with HIV, report higher peer norms for risk behaviour, higher prevalence of crystal methamphetamine use and cocaine use with sex, and higher drug and alcohol- influenced sexual experiences compared with non-barebackers (Parsons & Bimbi, 2007). Indeed, Adam (2005) proposed that barebacking is a ‘micro-culture’ that does not wholly represent the HIV-positive men or the MSM community in general, noting that “men outside the bareback micro-culture express considerable puzzlement and sometimes alarm in their stories of encountering men who show no interest in safe sex” (p.342). Thus, it is important to discern differences between barebacking identity and behaviour while exploring the importance of social influence on barebacking behaviours.

**Individual Differences: Sexual Sensation Seeking, Substance Use and Online Sex-Seeking**

A number of cultural, socio-political, social and interpersonal factors contribute to both bareback sex and bareback identity. These factors include: (1) medical advances in HIV treatment and prevention, (2) prevalent ideologies about safe sex, social group context and norms and ability to communicate with one’s sexual partner (Berg, 2008) (3) individual personality and behavioural factors such as desire for pleasure, sexual adventurism, substance use and online sex-seeking.
**Sexual Sensation-Seeking.**

Previous studies have found that constructs such as sexual adventurism, sexual compulsivity and sexual sensation-seeking, differentiated men who engaged in barebacking from those who did not (Halkitis & Parsons, 2003; Halkitis et al., 2005b; Grov, Parsons & Bimbi, 2010; Berg, 2008). Sensation-seeking is a construct originally studied by Zuckerman and colleagues (1964), which describes an increased willingness to take risks in order to achieve immediate gain. Sensation-seeking influences how the individual subsequently appraises risk, as high sensation-seekers are likely to downplay risk associated with a behaviour, if they have experienced that behaviour without negative consequences (Bancroft et al., 2003). Kalichman (1994) adapted this concept specifically to sexual behaviour in the ‘sexual sensation seeking scale’. Sexual sensation seeking was found to be a mediating variable of high-risk sex among MSM (Kalichman, 1994). Further, Berg (2008) found that sexual sensation seeking was significantly associated with barebacking, however, this study used behaviour rather than identity to define barebackers and barebacking. Research has yet to examine how sexual sensation seeking connects to identity as a barebacker compared with barebacking behaviour.

**Substance Use.**

Rates of drug and alcohol use in MSM have been found to be higher than in the general population, and high rates of drug and alcohol use is associated with higher risk sexual behaviour in MSM. Kalichman (1994) states that in addition to sexual sensation seeking, substance use may be associated with risk behavior in MSM. Furthermore, Ross et al. (1999) found strong associations between higher risk sexual behaviour and alcohol and drug use in 422 Midwestern MSM and that increased degree of alteration of consciousness and disinhibition were most strongly connected to unprotected sex. Similarly, Hirshfield et al. (2004) examined drug and alcohol use in 2916 gay and bisexual men and found that UAI was associated with using alcohol/drugs including poppers, crystal methamphetamine, cocaine, marijuana and Viagra before or during sex. Studies examining drug and alcohol use in both seropositive and HIV-negative self-
identified barebackers have found higher rates of methamphetamine use and higher drug and alcohol-influenced sexual experiences compared to non-barebackers (Halkitis et al., 2005b; Parsons & Bimbi, 2007). Finally, Berg’s (2008) study found that being drunk on alcohol in anticipation of sex was significantly related to barebacking. However barebackers and non-barebackers were not found to be significantly different in their reported use of crystal methamphetamine and other illicit drugs. Substances that cause disinhibition are associated with higher risk-taking and may be more commonly used among barebackers. Overall, the differences in the association between barebacking identity and behaviour and substance use still remain unclear.

**Online Sex-Seeking.**

As Internet use and access proliferates, more sexual interactions are facilitated by online media. It has become common for gay and bisexual men to seek sex online (Elford et al., 2001), and a number of apps tailored to this community provide a vehicle for men who bareback to seek others who are interested in condomless anal sex (Halkitis, Parsons & Stirratt, 2001). A meta-analytic review based on 15 findings from offline studies indicated that 40% of MSM had used the Internet to look for sex partners, and that UAI was more likely among MSM who sought sex partners online (Liau, Millet & Marks, 2006). Additionally, a study of HIV-positive men who seek sexual partners on the Internet found that 83.9% of respondents indicated at least one act of barebacking in the past three months (Halkitis & Parsons, 2003). This was in comparison with 47% of a sample of HIV-positive men recruited in person through community events (Parsons & Bimbi, 2007). Furthermore, MSM who use the Internet to find sexual partners are more likely than those who do not to have more sexual partners and to engage in unprotected sex (Benotsch, Kalichman, & Cage, 2002). In addition, Berg (2008) found that barebackers more frequently met partners online compared with non-barebackers.

A recent study of 2,527 MSM in France revealed that sexual risk-taking with partners met online was positively associated with online chatting and fantasizing about UAI beforehand. However, 80.3% of
MSM agreed that they would inform their chat partner that they would not engage in UAI in real life, if they were to chat and fantasize about it online (Adam, Murphy & de Wit, 2011). This discrepancy may reveal a gap between intention to wear a condom and sexual behaviour in the heat of the moment. Adam et al. (2011) proposed that engaging in a co-created, online sexual fantasy with a potential partner creates a script that shapes subsequent face-to-face interactions. Furthermore, the scripts that are created during online fantasizing may not be congruent with individual’s prior attitudes and intentions as the fantasy scripts are constructed in the heat of the moment. Other researchers argue that unprotected sex has become somewhat of a social norm on the Internet, creating social pressure for MSM to conform to a norm of condomless sex that in turn impacts subsequent behaviour (Morin et al., 2003; Berg, 2008). The evidence suggests that a distinct connection between bareback sex and online sex seeking exists. However, more research into how intention to seek bareback sex or safe sex online facilitates subsequent risk behaviour is warranted.

**Barebacking as Resistance**

Research has shown that cognitive, behavioural and personality factors such as sexual sensation seeking (Bancroft et al., 2003), sexual compulsivity (Grov, Parsons & Bimbi, 2010), treatment optimism, safe sex fatigue (Adam et al., 2005) and substance use (Ross et al., 2001) are factors that contribute to high-risk and bareback sex among MSM. However, critical health research problematizes investigations that seek to discover individual differences that contribute to barebacking without unpacking the cultural significance of such acts. Berg’s (2008) review article discusses macrosocial factors associated with barebacking. He summarizes research that views barebacking as “culturally situated in an oppressive society in which some gay men feel the need to assert the transgressional aspects of their non-normative sexuality…barebacking is an unconscious representation of gay men’s protest against antiseptic views of sex” (p. 757). Furthermore, Crossley (2002) discusses how health promotion interventions that focus on using condoms 100% of the time promote subtle value-laden messages about health and morality. Historically, gay sex has been deemed to be immoral. With the advent of the AIDS crisis, gay sex became doubly stigmatized by being associated with disease. Therefore, Crossley (2002) argues that in certain
contexts, barebacking can be viewed as a form of unconscious resistance from hegemonic societal narratives that seek to regulate and sterilize the sexuality of MSM. Furthermore, Parsons & Bimbi (2007) posit that since HIV-positive men are often “disenfranchised from the larger culture as well as gay community due to HIV phobia and discrimination” (p.284), barebacking identity may be an oppositional identity formed by men living with HIV against dominant culture and against the gay community. However, in Crossley’s subsequent (2004) paper, he acknowledges that his psychoanalytic conception of barebacking as unconscious rebellion risks pathologizing the act as ‘immature and regressive’ (p.237). Instead, Crossley (2004) highlights the value for gay men to reflect back on their personal, cultural and social histories. He argues that conceptualizing individual sexual behaviour as part of a broader social context can help to change “self-defeating” or “damaging” behaviour by framing safer sex as a social responsibility for future progress (p. 242). Finally, Bird’s (2010) HIV-prevention research on HIV status disclosure calls for future researchers to consider how HIV-positive individuals may process prevention messages differently than HIV-negative individuals. Bird (2010) warns that HIV-positive individuals may resist prevention messages that they perceive to be oppressive.

When examining barebacking as a form of resistance, it is important to note how resistance intersects with pleasure-seeking and fantasy fulfillment. In Eric Rofe’s (1998) book entitled “Dry Bones Breathe: Gay men creating post-AIDS identities and cultures,” he discusses how his sexual fantasies and cultural messages about gay sex mutually influenced each other:

Anal sex crept into my fantasy life slowly during the 1980s. Repeated cultural messages telling me to 'Wear a rubber every time' and 'Use condoms - 100 percent' may have heightened my interest in f***ing and created powerful new meanings of anal sex for me. As f***ing and getting f***ed asserted themselves in my daydreams, I wondered whether my own desires emerged from transgression? Was the now-forbidden nature of anal sex sparking new desires within me? Did I want to f*** guys now because it was dangerous? Was there something about illness, death and prohibition that got me hard? (Rofe, 1998, p. 298).
Thus, in some cases, dominant HIV prevention narratives may paradoxically serve to reinforce barebacking or UAI, as the forbidden nature of unprotected sex can be eroticized. For example, a qualitative study of 89 self-identified barebackers were asked about how they think and feel about risk when intentionally forgoing condoms with sexual partners. Results indicated that participants were aware of their enhanced risk, but described a reinvigoration of thrill and excitement after years of associating sex with disease and loss (Frasca, Ventuneac, Balan & Carballo-Dieguez, 2012). Furthermore, Junge (2002) explores barebacking from an anthropological perspective, arguing that “safer-sex ideology facilitates a distinct form of rationality” (p.195), and therefore condomless sex is viewed as dangerous, risky and irrational. Subsequently, risk and danger become either explicitly or implicitly erotically-charged, and barebacking becomes a dangerous, erotic fantasy (Junge, 2002).

Much of the discussion of barebacking as resistance and eroticization of risk is theoretical and difficult to measure empirically. However, the criticism of HIV-prevention interventions that promote zero tolerance for condomless sex that resistance theories invoke can have valuable implications for future health promotion for certain subsets of MSM. As over half of all new HIV infections in Canada are MSM (Challacombe, 2015), new directions for prevention are required. Indeed, the World Health Organization (WHO)'s new directions for HIV prevention have evolved away from promoting condom use and instead include: (1) treating all people living with HIV with ARV medication (2) all people at “substantial” risk of contracting HIV should be offered preventative ARV treatment, and (3) increase awareness of HIV infection among people living with HIV by increasing HIV testing (WHO, 2015). Recent advancements in prevention research and intervention will be discussed further in subsequent sections.

**Barebacking: Prioritizing Pleasure, Eroticizing Risk**

Another perspective on barebacking views the behaviour as a mode of maximizing pleasure, intimacy and fulfilling one’s sexual fantasies. Sexual pleasure has been found to be the most frequently cited reason for barebacking (Carballo-Dieguez & Bauermeister, 2004; Mansergh et al., 2002). In Carballo-Dieguez et al.’s (2011) qualitative study on barebacking, some of the most common reasons cited for UAI
and barebacking among MSM were increased sexual pleasure, emotional connection, erotic risk-taking, ‘heat of the moment,’ and fantasy fulfillment. Furthermore, Rotello (1997) argues that the popularization of the term “barebacking” in itself indicates a linguistic shift from the negative connotation of unprotected sex as “unsafe sex” to a sexy and clever colloquialism. Condomless sex between MSM is often motivated by pleasure seeking and can supersede knowledge about risk and intentions to have safe sex. Carballo-Dieguez et al. (2011) propose a psychoanalytic model of barebacking in which the pleasure seeking ‘id’ overtakes the rational and knowledgeable ‘ego’ and the moral concerns of the superego. Indeed, normal, rational, decision-making becomes impaired during sexual arousal, as the need for orgasmic release and gratification overpowers knowledge of risk (Bancroft et al., 2003). Moreover, a participant in an earlier qualitative study by Carballo-Dieguez (2001) proclaims “the pleasure I feel when I’m having sex…is so amazing!...protection does not fit into the fantasy” (p. 229). Similarly, another participant in this same study explained it this way: ‘you cannot rationalize not wearing a condom. It is part of your brain that refused to look at the situation realistically…you shut your brain down and create a reality so that you can enjoy yourself, and then torture yourself later. It’s the desire for pleasure” (p. 230). Finally, a pertinent example of the priority for pleasure is the number of HIV counsellors who participated in Carballo-Dieguez et al.’s (2011) study on barebacking. Despite being educators about safe sex in the community, these HIV counsellors described the strong motivational force of pleasure that supersedes their knowledge of HIV prevention and behavioural skills to use condoms. As few HIV-prevention programs acknowledge the role of arousal and pleasure seeking in human sexual behaviour, more research on interventions that aim to maximize pleasure while reducing risk are needed.

**Sexual Pleasure and Satisfaction in MSM**

As self-identified barebackers claim that maximizing pleasure can outweigh the costs of having unprotected sex, it appears that sexual satisfaction, pleasure and enjoyment are important factors to consider in this population. In fact, rates of sexual dysfunction in MSM are higher than those reported in heterosexual
samples (Hart & Shwartz, 2010) and multiple studies (Asboe et al., 2007, Cove & Petrak, 2004; Hijazi et al., 2001) have revealed low rates of sexual satisfaction and functioning in people living with HIV (PHAs). A number of factors including rates of erectile dysfunction (ED) increasing with age (Mykletun, 2005), impact of anti-retroviral (ARV) medication on sexual functioning (Hijazi et al., 2002) and psychosocial factors such as stigma and discrimination have been found to contribute to lower rates of sexual satisfaction among MSM (Cove & Petrak, 2004; De Ryck et al., 2012, Hart & Schwartz, 2010, Rojas Castro et al., 2010). A qualitative study of 102 ‘high-risk’ MSM found that one third of the respondents complained that condom use both decreases stimulation and often leads to loss of erection (Adam et al, 2005). Further, in a study of MSM over the age of 40, not using a condom due to difficulty with erections was the strongest predictor of unprotected receptive anal intercourse and also strongly predicted unprotected insertive anal intercourse (Jacobs, Kane & Ownby, 2012).

As highly active anti-retroviral therapy (HAART) becomes more prevalent and MSM PHAs are leading longer, healthier lives, some of them having an undetectable viral load, the need to address quality of life issues becomes more salient (Hijazi et al, 2001). Sexual satisfaction is a key factor contributing to perceived quality of life (Cove & Petrak, 2004), yet few studies have examined barebacking and its connection to sexual satisfaction. Though research suggests that pleasure is a priority for MSM who bareback (Carballo-Dieguez & Bauermeister, 2004, Carballo-Dieguez et al., 2011), studies have also yet to examine the extent to which condoms interfere with pleasure in MSM in general, and in barebackers, specifically.

**Sero-adaptive Practices and Barebacking**

Sero-adaptation is a harm-reduction strategy that includes a wide variety of behaviours and practices that use HIV status to inform sexual decision-making (Snowden, Raymond & McFarland, 2004). Examples of sero-adaptation include sero-sorting and sero-positioning, or intentionally appointing the partner living with HIV or of unknown sero-status to be the receptive partner during unprotected sex (Cassels & Katz, 2013). The concept of sero-positioning is founded upon the premise that unprotected receptive anal
intercourse can pose up to a ten times greater risk of infection than insertive anal intercourse (Vittinghoff et al., 1999). Lower risk sexual acts such as oral sex, having a low viral load or being on anti-retroviral medication are also sero-adaptive behaviours that have been cited in recent studies (Horvath et al., 2012; Prestage et al., 2009).

A recent review article of studies conducted on sero-adaptation in the US, Europe and Australia, indicated that prevalence rates of sero-sorting behaviours in MSM range from 14-44% of HIV-positive MSM and 25-38% of HIV-negative MSM. It was also found that 14-35% of HIV-positive and 6-15% of HIV-negative MSM sero-position (Cassels & Katz, 2013). Sero-adaptive practices have been found to be effective at reducing HIV transmission among HIV-positive men (McConnell et al., 2010; Truong et al., 2006). A prospective cohort study of 168 seropositive MSM found that sero-adaptive sexual choices reduced potential new infections by 98%. Further, in this sample, CLAI was 15.5 times more likely to occur with a positive partner than a negative one, receptive CLAI was 4.3 more likely in sero-concordant partnerships than with negative partners and insertive CLAI was 13.6 times more likely with positive partners (McConnell et al., 2010). Similarly, a meta-analysis of 30 studies in the US on the risk behaviour of HIV-positive MSM found that UAI was considerably higher with HIV-seropositive partners (30%) than HIV-negative or sero-status unknown (26%) (Crepaz et al., 2009). In HIV-negative MSM, a recent study using data from four longitudinal HIV prevention studies of MSM in North America found that sero-adaptive behaviours such as sero-sorting and sero-positioning were each associated with increased risk of acquiring HIV compared with no condomless anal sex. However, MSM who practiced sero-adaptive strategies were at lower risk than those who reported no sero-adaptive strategies (Vallabhaneni et al., 2012).

Despite evidence that sero-adaptive strategies may be an effective harm-reduction solution to HIV transmission, it is important to note that the efficacy of ‘sero-adaptation’ will be compromised if those who practice it are not being frequently tested for HIV (Cassels & Katz, 2013). In Canada, 2014 national data indicates that almost one in five MSM living with HIV remain undiagnosed (Challacombe, 2015). Therefore, while some MSM may factor in an unknown HIV status into a sero-adaptive strategy, others may
unknowingly increase risk of HIV transmission by assuming that an ‘unknown’ status is a negative status. With this caveat in mind, sero-adaptive strategies are an important way for MSM to prioritize sexual pleasure while reducing sexual risk, and may be promoted as a harm-reduction approach alternative to promoting condom use 100% of the time. Further, sero-adaptive tactics have been largely ignored in research on HIV transmission, as all condomless anal sex is often merged into a homogeneous, ‘high risk’ category. McConnell et al. (2010) estimated that failure to consider sero-adaptive tactics among seropositive men could overestimate risk of HIV transmission by more than 50-fold. Evidently, more research into how MSM and barebackers use sero-adaptive strategies to enhance sexual pleasure while reducing risk is warranted.

**PEP and PrEP Efficacy, Use and Impact on Condomless Sex.**

Post exposure prophylaxis (PEP) refers to the use of anti-retroviral medication (ARVs) in order to prevent HIV infection after being exposed to HIV and pre-exposure prophylaxis (PrEP) refers to using ARV’s as a prophylactic measure for those who are at high risk of contracting HIV. The ARV Truvada® (Gilead Sciences, 2015), or the combination of tenofovir disoproxil fumarate (TDF) and emtricitabine (FTC) was approved by the FDA as PrEP in 2012 in the US, but has yet to be approved as PrEP by Health Canada (FDA, 2012; Wilton, 2015). Furthermore, Truvada® as PEP is currently available to both U.S. and Canadian residents, though PEP is not always easily accessible. Clear guidelines exist across Canada for access to PEP for occupational HIV exposure. However, guidelines are less clear for non-occupational exposure and decisions are made on a case-by-case basis by a health-care provider (Wilton, 2011). The following section will summarize the recent research on efficacy of PEP and PrEP, and how these preventative drug protocols may influence the behaviour of MSM.

The most direct evidence supporting the efficacy of PEP is a case-control study of needle stick injuries among healthcare workers, which found an 81 % reduction in risk for acquiring HIV (Cardo et al., 1997). The “iPrEx Study,” a preliminary 6-country, randomized, controlled trial on efficacy of Truvada® as PrEP in MSM found that Truvada® only reduced incidence of HIV by 44%. However, low efficacy was
attributed to the fact that only 9% of subjects who contracted HIV were found to have detectable levels of the study drug in their blood. In participants with high adherence as evidenced by levels of the drug detected in their blood at clinic visits, prevention of HIV acquisition reached 90% (Grant et al., 2010). Indeed, low medication adherence is a significant barrier to using PrEP as a HIV-prevention strategy. A more recent study, “The PROUD study” is an unpublished randomized controlled trial examining the efficacy of PrEP, which recruited 545 MSM from sexual health clinics in England. The PrEP group revealed an 86% reduction in HIV infection compared to the waitlist control group, indicating that PrEP significantly reduces the risk of HIV infection (McCormack & Dunn, 2015). Finally, a clinic study of 657 MSM who began to use PrEP found no new HIV infections during the 7.2 month mean follow-up time (Volk et al., 2015).

Evidently, when taken regularly, recent research suggests that PrEP shows promising ability to reduce HIV transmission between MSM.

Despite its efficacy, PrEP has created controversy among MSM and healthcare providers due to the potential implications of relying on biomedical interventions rather than ‘safe sex’ for HIV prevention on HIV-negative MSM (Kirby & Thornber-Dunwell, 2014). A recent qualitative study examining knowledge and acceptability of risk reduction strategies found that generally, MSM show high rates of acceptability of alternative non-condom HIV-prevention strategies such as microbicides (Nodin et al., 2008). However, though MSM had generally optimistic reactions to PrEP, participants were more polarized about PrEP and expressed concerns such as hesitancy about efficacy and worry about side effects (Nodin et al., 2008).

Another (2008) cross-sectional survey of 1819 gay and bisexual men by Liu and colleagues found that 47% of the sample was aware of PEP, and only 16% of the sample was aware of PrEP. Further, awareness was associated with being older than 25, white, having an income greater than $100 000, and having seen a medical provider in the past year. Men who reported CLAI in the past year were also more likely to have heard about PrEP (Liu et al., 2008). In the clinic study by Volk et al. (2015), 656 participants were 99% MSM and after 6 months of PrEP use, 30% of PrEP initiators were diagnosed with another STI, as number of sex partners increased in 11% of PrEP initiators and condom use decreased in 41% of PrEP initiators.
This suggests that PrEP use may increase risk behaviour for some MSM. However, number of partners and condom use was unchanged for 74% and 56% of the sample, respectively. Despite concerns about the impact of treatment optimism on sexual behaviour, some research refutes the idea that PEP/PrEP may lower inhibitions due to perceived protection, leading to higher risk behaviours (Martin et al., 2004; Schechter et al., 2004). Due to mixed evidence regarding the impact of PrEP and PEP on the sexual behaviours of MSM, more research in this area is warranted. Further, evidence suggests that PEP and PrEP are sero-adaptive, risk-reduction strategies that may be accepted and used by barebackers and those who engage in UAI. An examination of how such preventative strategies may facilitate the sexual enjoyment of MSM who are already using condoms less frequently while reducing HIV risk is indeed relevant when studying barebacking behaviour.

Treatment as Prevention in HIV-positive MSM.

Since the advent of ARVs, research has found that for PHAs on medication who have an undetectable viral load, risk of HIV transmission is relatively low. Such findings have lead to the concept of “treatment as prevention” (TasP), which suggests that treating PHA’s with ARVs also reduces risk of HIV transmission to other people. A recent observational study called the “PARTNER study,” examined rates of HIV transmission within HIV sero-discordant couples who don’t use condoms, where the HIV-positive person is on ARVs and has an undetectable viral load. Results, which were presented at the Conference on Retroviruses and Opportunistic Infections in 2014, found that no linked transmissions have occurred so far in 586 heterosexual and 308 gay male couples after approximately 900 couple years of follow-up (Rodger et al., 2014). This finding may have a tremendous impact on subsequent research about HIV risk, condom use and barebacking in MSM. As more effective treatments become accessible to both HIV-negative and HIV-negative men, a radical transformation may begin to occur in how MSM, academic research and society at large view sexuality in this population. Though bareback sex at face value may seem like an ignorant or risky behaviour, shedding condom use while using sero-adaptive strategies such as ARVs, undetectable viral load, PEP and PrEP may be as calculated as using condoms in certain contexts.
Implications for Health Promotion for MSM

According to Crossley (2002), contemporary health promotion efforts impact the construction of identities by associating ‘health’ with ideological morality and goodness. Conversely, ‘unhealthy’ identities and ‘risky’ behaviours such as sero-positivity and unsafe sex become associated with immorality, irresponsibility and ‘badness.’ Such connotations are perpetuated by legal efforts to reduce HIV transmission, such as Canada’s recent legal efforts to criminalize the non-disclosure of HIV status (Adam et al., 2014). Such negative connotations may be embraced by the gay community as resistance to cultural norms of healthiness and cleanliness and thus, can at times fuel risk behaviours such as barebacking (Crossley, 2002). These prevention efforts may also act to perpetuate stigma against PHAs and risk behaviours such as condomless anal sex (Adam et al., 2014). Further, current prevention efforts often focus on the ‘rational’ sexual actor, while ignoring libidinal drives, pleasure-seeking, and desire for fantasy fulfillment in the heat of the moment (Carballo-Dieguez et al., 2012; Crossley, 2002). Since use of condoms 100% of the time is unrealistic for some MSM, and because engaging in UAI outweighs the importance of reducing risk for some men, an approach that appeal’s to men’s sexual desires may have a greater impact (Carballo-Dieguez et al., 2012; Catania et al., 1989; Prestage et al., 2012). Thus, a movement in prevention toward a sero-adaptive, harm-reduction approach that still prioritizes sexual pleasure and allows for fantasy fulfillment may be more effective. Examples of such practices include promoting responsible use of pre- or post-exposure prophylaxis (PEP or PrEP), strategic or sero-positioning, or selectively having only oral sex (Cassels & Katz, 2013). Further, use of microbicides may decrease the likelihood of HIV transmission without interfering with sexual pleasure (Nodin et al., 2008).

When examining the existing literature on barebacking in MSM, various gaps in research become apparent. First of all, more research is needed on how barebacking identity organizes sexual behaviour. Secondly, little research on barebacking has been completed since recent favourable results have been published on HIV transmission in the context of ARVs, PEP and PrEP. An examination of how such sero-adaptive strategies interact with pleasure-seeking, bareback behaviour and identity is necessary. Finally, an
examination of the occurrence of harm-reduction strategies and their impact on sexual enjoyment in MSM is necessary.

The Present Study

The present study will employ a quantitative approach to examine connections between sexual fantasies and sexual realities in MSM in Canada and the US. The study seeks to answer a number of questions including:

- How does identity as a barebacker and level of risk behaviour moderate the difference between perceived sexual enjoyment with and without condoms?
- What is the connection between barebacking identity and behaviour?
- What are some common reasons cited for barebacking?
- Are sexual sensation seeking, online sex-seeking and substance use related to barebacking identity and behaviour?
- What is the association between barebacking identity, behaviour and sexual satisfaction?
- What are main reasons cited for interference with sexual enjoyment? Do these reasons differ between barebackers and non-barebackers? HIV-positive vs. HIV-negative respondents?
- How frequently are MSM, broadly, and barebackers, specifically, using sero-adaptive practices and how do these practices relate to sexual enjoyment?

Hypotheses

The following hypotheses were made based on previous research:

- Since barebackers have been found to report a higher degree of perceived barriers of prevention methods such as condoms (Berg, 2008), respondents with a barebacking identity will have higher difference scores on the Pleasure Discrepancy With Condoms measure than respondents who do not report a barebacking identity.
• As barebackers have been reported to prioritize sexual pleasure (Carballo-Dieeguez et al., 2011), it follows that they may be more sexually satisfied than non-barebackers. Respondents with a barebacking identity will report higher levels of sexual satisfaction than non-barebackers.

• Consistent with study by Grov’s (2007) study which found strong evidence for strategic positioning and sero-sorting as harm-reduction strategies among barebackers, barebackers will be more likely to use harm-reduction protection strategies or sero-adaptive strategies than non-barebackers.

• As Halkitis’ (2007) study found that those who scored higher on a measure of barebacking identity perceived greater psychological, physical and emotional benefits to barebacking, those who report more benefits to barebacking on the Benefits of Barebacking Scale (BBS) will report a higher strength of barebacking identity on the Barebacking Identity Scale (BIS).

• Kalichman et al. (1994) found that sexual sensation seeking was positively correlated with CLAI. Similarly, Halkitis & Parsons (2003) found that HIV-positive men who report bareback sex scored higher on a measure of sexual adventurism than men who did not report bareback sex. It follows that respondents with a barebacking identity will score higher on sexual sensation seeking, as measured by the Sexual Sensation Seeking Scale (SSSS).

• Parsons & Bimbi (2007) found that barebackers report higher prevalence of crystal methamphetamine and cocaine use with sex, as well has higher drug and alcohol influenced sexual experiences compared with non-barebackers. Further, one study found that the Internet and availability of sex-oriented chat rooms were cited common reasons for the barebacking phenomenon (Halkitis, Parsons & Wilton, 2003). Another study found a main effect of barebacker identity on the amount of time spent on the Internet looking for sex and for dates (Grov et al., 2007). Consistent with this research, online sex-seeking behaviour and substance use before/ during sex will be positively associated with barebacking identity.

• Parsons & Bimbi (2007) found that 72% of those who claimed a bareback identity had CLAI in the past three months compared with 30% of non-barebackers. Similarly, Carballo-Dieeguez et al., (2006) found that HIV-positive men were significantly more likely to report not wanting their partners to use a condom
for anal intercourse and to not want to use a condom themselves for insertive anal intercourse than HIV-negative men. Sexual risk behaviour, as measured by the Kinsey Institute Sexual Activity and Condom Use Questionnaire will be higher in barebackers and HIV-positive respondents, than non-barebackers and HIV-negative participants.

- Parsons & Bimbi (2007) found that those who identify as barebackers are five times more likely to be living with HIV than non-barebackers, therefore, barebackers will have higher rates of sero-positivity than non-barebackers.
- There is evidence to indicate that barebackers prioritize pleasure (Carballo-Dieguez & Bauermestier, 2004) and may use strategic positioning more often that non-barebackers (Grov et al., 2007). Therefore, prevalence of these behaviours suggests that they interfere with pleasure less than condom use. Likewise, sero-adaptive strategies will have no or positive impact on sexual enjoyment compared with condoms in the general sample.

**Methods**

**Variables and Measures**

**Sociodemographic and health information.** Participants were asked about a number of demographic variables including: age, sexual orientation, gender identity, identity within queer community (i.e. barebacker, twink, bear, etc.) ethnicity, geographic location, relationship status, HIV status (if known), current medication, CD4 count (if known), viral load (if known), time since last HIV test, history of STIs, income (or parent’s income if student), education level, and any sexual dysfunction (see Appendix D). The “CAMH: Asking the Right Questions Document” was used to inform the construction of questions regarding sexual orientation, gender identity and relationship status (Barbara, Doctor & Chaim, 2007).

**Sexual Behaviour.** Sexual activity and behaviour was examined using an adapted version of the Kinsey Institute Sexual Activity and Condom Use Questionnaire (Bancroft et al., 2003) (see appendix E).
This questionnaire examines (a) sexual activity with men over the past three months, and (b) information about HIV testing and serostatus, and past history of other STIs. Sexual activity questions focus on anal intercourse and cover frequency, sex with casual partners or partners known to be having sex with others or partners whose HIV status was not known, and numbers of partners with whom unprotected sex occurred. This questionnaire was used in a study that examined sexual risk-taking, arousability and mood in gay men (Bancroft et al., 2003). A study on HIV risk behaviour self-report reliability found that a recall period of three month was found to produce the most reliable data (Napper et al., 2010).

**Barebacking Attitudes and Identity.** The Benefits of Barebacking Scale (Halkitis et al., 2003) and the Barebacking Identity Scale (Halkitis, 2007) are nine-item and six-item (respectively) likert-scales (see Appendix F). The Benefits of Barebacking Scale contains questions such as “Bareback sex increases the intimacy between men in a sexual encounter.” Reliability analyses yielded an internal consistency of 0.90 (Halkitis, Parsons & Wilton, 2003). Reliability analysis in the current study revealed an internal consistency of 0.92 for this scale. The Barebacking Identity Scale asks questions such as “barebacking is an important part of who I am.” Reliability analyses yielded an internal consistency measure of 0.86, and factor analysis revealed that all factors loaded greater than 0.75 (Halkitis, 2007). Reliability analysis in the current study revealed an internal consistency of 0.89.

**Online Sex Seeking.** Frequency of meeting sexual partners found online, frequency of erotic chatting, amount of online partners to whom bareback sex is mentioned during erotic chatting, preference for bareback sex in profile, preference for sero-sorting in profile, and number of online profiles geared at sex-seeking was assessed quantitatively (see Appendix J). Preference for bareback sex and serosorting were both dichotomous variables (yes or no). For the remaining questions, options range from “Never” to “frequently (more than 10 times per month)” on a 5-point likert scale, and “none of my online partners” to “all of my online partners” on a 5-point likert scale. Internal reliability for this scale was 0.72.
**Substance Use Before/ During Sex.** Drug and alcohol use before or during sex in the past three months was assessed (see Appendix K). The questionnaire asks about frequency of use of: MDMA, poppers, amphetamines, marijuana, alcohol, crack, cocaine, heroin, non-prescription methadone, opiates, GHB and ketamine. Participants are asked to select “Never” to “Always” on a four-point likert scale. Questions were adapted from the Risk Behaviour Assessment (Fisher, Napper & Reynolds, 2011). Internal consistency for this scale was 0.56, however items were examined individually.

**Frequency of protection and harm-reduction strategies used.** Participants were asked how frequently they use modes of protection including: condoms, microbicides, strategic positioning, sero-sorting, PEP or PrEP, low/medium- risk sexual activity, pulling out before ejaculation, monogamy, low viral load, rapid HIV testing, frequent HIV/ STI testing, and abstinence (see Appendix L). Participants select answers on a 5-point likert scale that range from “Not at all” to “All of the time.” Internal consistency analysis revealed an alpha value of 0.38 for this scale. However, low reliability estimates did not impact data analysis as each item was examined separately.

**Protection-related impact on sexual enjoyment.** Participants were asked to rate whether various protective and harm-reduction strategies impact their sexual enjoyment (see Appendix L). The strategies include: condoms, microbicides, strategic positioning, sero-sorting, PEP or PrEP, low/medium- risk sexual activity, pulling out before ejaculation, monogamy, low viral load, rapid HIV testing, frequent HIV/ STI testing, and abstinence. Answers range from “Definitely interferes with my sexual enjoyment” to “Definitely enhances my sexual enjoyment” on a five-point likert scale. Only participants who had used the protective strategies were asked to rate how much they facilitate or interfere with sexual enjoyment, therefore too few cases were available for reliability estimates.
**Treatment Optimism.** Participants were asked to indicate whether or not they believe that recent advancements in HIV treatment (ARVs), PEP and PrEP have impacted their decision to have condomless anal intercourse with a partner of unknown or positive HIV status in the past three months on a four-point likert scale ranging from “Not at all true for me” to “Very true for me” (see Appendix M). Reliability analysis revealed an internal consistency of 0.91 for this scale.

** Sexual Communication Barriers to Sexual Enjoyment.** Respondents were asked to indicate whether or not a number of concerns were barriers to sexual enjoyment (see Appendix L). For the present study, only two concerns were included in analysis: (1) discussing HIV and (2) discussing STIs. Reliability analysis for these two questions revealed an *alpha* of 0.85.

**Sexual Sensation Seeking.** The Sexual Sensation Seeking Scale (SSS) (Kalichman, 1994) is a ten-item questionnaire that examines sexual sensation-seeking (see Appendix H). Berg (2008) found that the SSS was the single best discriminating factor between gay and bisexual men who practice unprotected sex with limited concern about becoming HIV-infected and men who do not. Further, Kalichman (1994) found that the SSS had an *r*=0.32 among gay and bisexual men with rates of unprotected intercourse, number of sexual partners (*r*=0.38), and alcohol use in sexual contexts (*r*=0.23). Reliability analyses found that internal consistency *alphas* ranged from .75 to .79 in gay and bisexual men, and an *alpha* of .83 was found in HIV-positive men. Test re-test reliability over two weeks yielded correlations of *r*=0.69 and *r*=0.78 over three months. Finally, in terms of construct validity, the SSS is significantly correlated with perceived pleasure of an array of sexual activities, whereas it is inversely correlated with sexual risk reduction practices including condom use (Kalichman & Rompa, 1995). Reliability analyses in the current study revealed an *alpha* value of 0.81.
Pleasure discrepancy with and without condoms. The “Enjoyment of Condom Use” Measurement (Catania et al., 1989) is a 20-item questionnaire catered to MSM that examines sexual enjoyment during anal intercourse, oral- anal contact and oral- genital sex both with and without a condom or barrier. It measures enjoyment in both active and receptive positions as well as with varied forms of ejaculation (e.g. ‘pulling out’, and ‘swallowing’). This measure has been used on both heterosexual (Catania et al, 1992) and homosexual populations (Catania et al, 1989) in order to determine how condoms and safe sex impact sexual enjoyment in different populations. The current study used a short version of this questionnaire (see Appendix G) that asks participants to rate how much they would enjoy ‘active’ and ‘receptive’ anal intercourse with and without condoms on a six-point likert scale. Discrepancy scores were calculated by subtracting sexual enjoyment with condoms from sexual enjoyment without condoms in both active and receptive anal intercourse. Internal consistency of the active and receptive discrepancy scores was 0.85.

Sexual Satisfaction. The “Sex Life Satisfaction” subscale of the “Extended Satisfaction With Life Scale” (ESWLS) (Alfonso et al., 1996) was used to measure sexual satisfaction (see Appendix I). The scale is a seven-point likert scale that asks participants to assess how much they agree with each statement. There are five statements including: “In most ways my sex life is close to my ideal,” “the conditions of my sex life are excellent,” “I am satisfied with my sex life,” “so far I have gotten the important things I want from my sex life,” and “I am generally pleased with the quality of my sex life.” Internal consistency for the sex life subscale, measured on two independent samples, was 0.96, and test-retest reliability was 0.87 (Alfonso et al., 1996). The current study also revealed an internal consistency measure of 0.96 for this scale.

Procedure

This study had a cross-sectional design. Participants were recruited online through a variety of community recruiters including gay and bisexual men who had access to a network of other gay and bisexual men, AIDS service organizations, LGBT organizations, online HIV publications and online news and support groups for gay men and people living with HIV. Specifically, a Facebook page for the study
entitled “The ‘Let’s Talk About Sex’ Sexuality Study” was created, and a number of gay and bisexual men shared the page, inviting others to complete the survey. Furthermore, the following organizations shared the study in their newsletter or on their Facebook page: The Gay Men’s Sexual Health Alliance, Rainbow Health Ontario, Sherbourne Health Centre, AIDS Community Care Toronto, AIDS Committee of Toronto, Bisexual Men of Toronto, Ontario HIV Treatment Network, Canadian AIDS Society. Positivelite.com, a magazine for people living with HIV posted the study on their website. In addition, advertisements for the study were placed on craigslist.com in the “community volunteers” section. Finally, the majority of participants were recruited through reddit.com, a user-based news-sharing site that has a variety of community ‘subgroups’. The study was posted on the “gay” and “HIV” subgroups. The content of the advertisements for the study that were posted online can be found in Appendix B.

The survey was live from September 26th, 2015 until November 1st, 2015. After viewing the study advertisement, prospective participants followed the URL provided in the advertisement, which brought them to the study website, which was powered by Google Forms. Google Forms is a platform for creating and analyzing user-friendly online surveys. This survey platform allows researchers to design response options as multiple choice, checklist, short answer or paragraphs and also includes features such as page branching and question skip logic. In addition, participants can answer Google Forms surveys anonymously and privately. The study URL directed participants to the consent form (see Appendix C), which outlined the goal of the research, the survey process and the right to withdraw. Consistent with research ethics principles, participants were assured of the confidentiality and anonymity of their data. After respondents consented to the study by checking the “I agree” box, they were then asked four screening questions to ensure that they met inclusion criteria (see Appendix D). In order to qualify for the study, participants had to be living in Canada or the US, identify as male and as gay, queer or bisexual, be over the age of 18, and have been sexually active in the past three months. Participants were asked to complete the survey in a private location. The respondents were also asked not to complete the survey more than once. Pilot testing revealed that the survey was functional, readable and took approximately 20-30 minutes to complete. Upon
completion of the survey, participants were given the opportunity to enter in their emails into a separate survey to be entered into the draw for a $100 VISA gift card and to receive a summary of the results. Respondents were also provided with a list of local and national LGBT and HIV support resources they could access, should they feel the need after taking the survey (see Appendix N). Finally, respondents were directed to a final page thanking them for completing the survey, which verified that it was successfully submitted. HIV Ethical Review Board of the University of Toronto approved the research project.

Participants

The sample included 256 gay, bisexual and queer people who identified as male from both Canada and the United States. The researchers were unable to determine a response rate, as it was not possible to track the number of people who viewed the study advertisements. Two hundred and seventy-three people consented to participate in the study, however 17 participants (six percent of the sample) either did not meet the inclusion criteria or exited the survey before completing the study. Participant ages ranged from 18- 68 ($M = 29.1$ $SD = 9.64$). Sixty-nine percent of respondents lived in a large urban area (population above 100 000), 18.2% lived in a medium population centre (population of 30,000-99,999), 9.7% lived in a small population centre (population of 1,000- 29, 999) and 1.2% lived in a rural area (population less than 1,000). Forty-four percent of participants lived in Canada, while 54% of respondents lived in the United States.

In terms of education, 0.4% of respondents reported having a grade school education, 9.7% completed high school or GED, 13.6% completed college or trade school, 23.7% reported having ‘some university’ education, 31.8% completed a university undergraduate degree and 20.5% completed a post-graduate degree. Seven percent of participants reported making $10, 000 per year or less, 12.8% made between $10, 000- 24, 999, 16.3% made between $25,000- $39,999, 14.3% reported making $40,000-$54,999, 11.6% made between $55,000-$69,999, 11.6% made between $70,000- $84,999, 3.9% made between $85,000- $99,999 and 21.3% made $100,000 or more.

An examination of race and ethnicity indicated that the majority of the sample was White (80.2%), 1.2% of the population was Indigenous, 0.8% South Asian, 0.4% Filipino, 3.1% Mexican/Latin American,
1.2% West Asian, 2.7% Chinese, 0.4% Korean, 0.4 % Japanese, 0.4% African/ Black, 7.3% Biracial or mixed race and 2% ‘Other’. In terms of sexual orientation, participants were asked to “select all” sexual orientations that applied to them. Thus, these percentages represent overlapping categories and do not add up to one hundred percent. Seventy-seven percent of respondents identified as gay, 11% of the sample identified as queer, 17% were bisexual, 9.3% identified as MSM, 2.3% identified as polysexual, 0.8% identified as trans-sensual, 0.8% identified as asexual, 0.8% were two-spirit, 1.2% were questioning, and 1.2% were unsure of their sexual orientation.

Results

Analysis, Frequencies and Demographics. Independent samples t-tests and chi-square tests of independence were conducted to evaluate the study’s hypotheses about differences between barebackers and non-barebackers on a number of variables described below. For barebacking identity, a dichotomous variable was created by categorizing those who answered “Strongly Agree” or “Agree” to the question “I am a barebacker” as “barebackers”, and those who answered “Neither Disagree Nor Agree”, “Disagree” or “Strongly Disagree” as “non-barebackers”. In terms of barebacking behaviour, those who answered “yes” to “In the last 3 months, have you had anal intercourse with a partner living with HIV or of unknown HIV status without using a condom?” were compared with those who answered “no” to this question. In terms of barebacker identity, 25.6% of the sample was classified as barebackers, whereas 74.4% were classified as non-barebackers. In terms of barebacking behavior, 16.7% had barebacked in the past 3 months, while 79.8% of the sample had not. Four percent of the sample reported that they were “not sure” if they had had condomless anal sex in the past three months, and those respondents were excluded from analysis. Though barebacking behaviour was associated with identity ($\chi^2 (1, 240)= 6.82, p>0.01$), only 28% of people who identify as a barebackers have had condomless anal sex with a partner of unknown or positive HIV status. Therefore, the following results section will organize findings by reporting relationships between both barebacking identity and behavior and a number of the hypothesized outcome variables. An independent
samples t-test revealed no significant difference between participants who barebacked and those who didn’t in the past 3 months in terms of income ($t (240)=-1.1488, p = 0.14$). Barebackers were significantly ($t (240)= 3.459, p <0.01$) older in years ($M= 33.6, SD=9.68$) than those who did not bareback ($M=28.1, SD=9.29$) in the past 3 months. Chi Square tests of independence were performed to examine the relationship between barebacking behaviour, country and race/ethnicity. No significant differences in barebacking behaviour were found in Canada compared to the US ($X^2 (1, 239)=3.56, p=0.06$). Similarly, no relationship between race and barebacking behaviour was found ($X^2 (1, 242)=-2.70, p=0.60$). Spearman’s rank- order correlation was conducted to test the associated between barebacking behaviour, education, urbanity and outness. A significant association between urbanity and barebacking was found ($\rho (rho)=0.2, p<0.01$), as 90.2% of participants who barebacked lived in a large urban area (population 100,000 or more). Further, barebacking behaviour was significantly associated with outness, as participants who were more ‘out’ reported more barebacking behaviour ($\rho (rho)=-0.16, p<0.05$). No significant relationship between education and barebacking behaviour was found ($\rho (rho)=-0.12, p=0.07$). In terms of barebacking identity, no significant relationship ($\rho (rho)=-0.02, p=0.79$) was found between urbanity and barebacker identity. Further, barebacking identity was not associated with outness ($\rho (rho)=-0.06, p=0.39$). Otherwise, participants who identified as barebackers revealed similar demographics trends as those who barebacked in the past 3 months. Qualitative data on reasons for barebacking, barebacking definition and description of latest barebacking episode were collected, but will not be presented or discussed here.

**Gay Identity**

Participants were asked to ‘select all’ gay identities that applied to them. Twenty percent of respondents identified as a cub, 17% identified as queer, 5% identified as a queer person of colour or QPOC, 10% identified as barebacker, 7% identified as a daddy, 5.8% identified as poz, 0.8% identified as faerie, 15% identified as a bear, 19% identified as an otter, 13.2% identified as twink, 9.3% identified as gay jock and 1.2% identified as a queen. Chi square tests of independence were conducted to examine which gay identities were associated with barebacking behaviour and identity.
**Bareback Behaviour.** Participants who identified as cub ($X^2 (1, 243)=4.02, p<0.05$), daddy ($X^2 (1,243)=7.30, p<0.01$), and poz ($X^2 (1, 243)=39.03, p<0.001$) were more likely to have barebacked in the past 3 months than participants with other identities. An especially strong association between bareback behaviour and poz identity was found, as 79% of participants who identified as poz had barebacked in the past 3 months.

**Barebacker Identity.** Respondents who identified as daddy ($X^2 (1, 253)=7.088, p<0.01$), and poz ($X^2 (1, 253)=6.38, p<0.05$) were significantly more likely to identify as a barebacker than respondents with other identities.

**Benefits of Barebacking and Barebacking Identity**

A bivariate correlation analysis revealed that Benefits of Barebacking, measured by the BBS and Barebacking Identity, measured by the BIS were significantly correlated ($r=0.53, p>0.001$) Scores on the Benefits of Barebacking Scale ranged from 9-44 ($M=24.05, SD=8.97$). Scores on the Barebacking Identity Scale ranged from 5-23 ($M=10.30, SD=4.66$). The hypotheses that barebackers would perceive greater emotional, sexual and psychological benefits to barebacking as well as a stronger identity as a barebacker were supported.

**Barebacking Behaviour.** Those who barebacked ($M=28.79, SD=7.73$) reported significantly ($t (241)=3.827, p<0.01$) more benefits to barebacking than those who did not ($M=23.11, SD=8.94$). As expected, participants who had barebacked in the past three months reported having a significantly ($t (241)=3.956, p<0.01$) stronger identity as a barebacker ($M=12.60, SD=5.07$) compared with those who hadn’t barebacked ($M=9.79, SD=4.50$) (see Appendix A, Figure 2).

**Barebacker Identity.** Similarly, self-identified barebackers ($M=29.65, SD=7.12$) reported significantly ($t (252)= 6.183, p<0.01$) more benefits to barebacking than non-barebackers ($M=22.20, SD=8.76$). Those who reported a barebacker identity also scored significantly ($t (252)= 17.301, p<0.001$) higher ($M=16.18, SD=3.34$) on the Barebacking Identity Scale than those who didn’t ($M=8.28, SD=3.12$) (see Appendix A, Figure 3).
Sexual Sensation Seeking

Participant scores on the Sexual Sensation Seeking Scale ranged from 10-40 \((M=26.22, SD=5.49)\). The hypothesis that barebackers would score higher on sexual sensation-seeking than non-barebackers was supported. The following ranges have been reported in previous studies of sexual sensation seeking: 11-19- low sexual sensation seeking, 20-27- moderate sexual sensation seeking and 28-38- high sexual sensation seeking (Grosskopf *et al.*, 2011) On average, the present sample would be classified as moderate sexual sensation-seeking.

**Barebacking Behaviour.** Barebackers in the current study scored significantly higher \((t(241)=3.493, p<0.001)\) \((M=28.80, SD=4.87)\) than non-barebackers \((M=25.60, SD=5.50)\) (see Appendix A, Figure 2).

**Barebacker Identity.** Respondents who identified as barebackers \((M=28.27, SD=4.85)\) also scored significantly \((t(252)=3.44, p=0.001)\) higher on sexual sensation seeking than those who didn’t \((M=25.63, SD=5.48)\) (see Appendix A, Figure 3). Participants who barebacked and self-identified barebackers both scored in the high sexual-sensation seeking range.

Online Sex Seeking

Participants were asked about their online sexual behaviour in the past three months.

**Meeting Partners Online.** In terms of meeting sexual partners online, 42.7% of the sample had never met a sexual partner online, 38% of the respondents met partners online “occasionally” (1-2 times per month), 5.8% met partners online “sometimes” (3-5 times per month), 5.5% of the sample met partners online often (5-10 times per month) and 1.1% met partners online “frequently” (more than 10 times per month). A dichotomous variable was created to examine differences between participants who met sexual partners online \((n=138)\) and participants who did not \((n=118)\). Online sex-seeking respondents scored
significantly higher in sexual sensation seeking (M=28.19, SD=5.17) than participants who didn’t (M=23.91, SD=4.98).

As expected, those who barebacked met sexual partners online significantly (t (49.03)=4.895, p<0.01) more frequently than non-barebackers (see Appendix A, Figure 4). “Meeting sexual partners online in the past 3 months” was also split into a dichotomous variable (yes=1, no=0). Barebacking behaviour was significantly (χ² (1, 243)=20.17, p<0.001) associated with meeting sexual partners online. The same was not true for barebacker identity; no difference in frequency of meeting partners online (t (252)=0.40, p=0.70) or meeting partners online in general (χ² (1, 253)=0.12, p=0.73) (see Appendix A, Figure 5) between self-identified barebackers and non-barebackers.

**Erotic Chatting.** Forty-nine percent of the sample had never engaged in erotic chatting with anyone online. Twenty-six percent did so “occasionally”, 10.6% “sometimes”, 7.1% “often” and 7.1% “frequently”. A dichotomous variable (yes=1, no=0) was also created for erotic chatting in the past 3 months. A Chi Square test of independence revealed that participants who barebacked were more likely to chat erotically with potential partners (χ² (1, 243)=5.23, p>0.05) than participants who didn’t bareback. No such differences were found when barebacking was examined based on identity (χ² (1, 253)=0.002, p=.967).

**Webcam Sex.** Seventy-five percent of the sample had never had webcam sex, while 14.5% did so “occasionally”, 4.7% “sometimes”, 3.5% “often” and 2% “frequently”. A dichotomous variable (yes=1, no=0) was also created for webcam sex in the past 3 months. Participants who barebacked were more likely to have webcam sex with potential partners (χ² (1, 243)=8.51, p>0.01). No differences in webcam sex were found in barebackers compared to non-barebackers (χ² (1, 253)=1.056, p=0.3).

**Preference for Barebacking in Profile.** 4.7% of the sample reported a preference for barebacking in their online profiles, while 85.6% did not. 9.7% of the sample did not respond to this question. As expected, those who barebacked were more likely to state a preference for barebacking in their online
profiles ($X^2 (1, 212)=17.70, p>0.001$). Similarly, respondents who identified as barebackers were more likely to state a preference for barebacking in their online profiles ($X^2 (1, 230)= 29.64, p<0.001$).

**Preference for Sero-sorting in Profile.** Seventy-nine percent of the sample reported no preference for sero-sorting in their online profiles, while 7.8% did. 13.6% did not answer the question. A Chi Square Test of Independence revealed no differences between those who barebacked and those who did not in stating a preference for sero-sorting in online profile ($X^2 (1, 202)= 3.26, p=.07$).

Similarly, no difference in preference for sero-sorting was found among barebackers when compared to non-barebackers ($X^2 (1, 220)= .947, p=0.33$).

**Chatting about Barebacking.** Forty-one percent of the sample reported never chatting aboutbarebacking with online partners, whereas 8.9% did “occasionally”, 10.9% sometimes, 5.1% often and 5.8% frequently. 28.4% of the sample didn’t respond to the question. Chatting about barebacking was significantly associated with barebacking behaviour ($X^2 (1, 243)=17.079, p>0.01$) (see Appendix A, Figure 4). Further, 57.1% of participants who barebacked had chatted about barebacking online in past 3 months. Similarly, participants with a barebacking identity were more likely to chat about barebacking online ($X^2 (1, 253)=15.558, p>0.01$) (see Appendix A, Figure 5).

**Total Online Sex Seeking.** A total online sex seeking score was calculated by adding together the number of online sex-seeking behaviours (meeting partners online, erotic chatting, webcam sex, preference for barebacking in profile). Participants who barebacked had a significantly higher ($t (240)=4.936, p>0.01$) total online sex seeking score than participants who didn’t. No significant differences ($t (94.79)=1.758, p=.082$) were found in total online sex seeking between those who identified as barebackers and those who didn’t.

**Substance Use Before/ During Sex**

Participants were asked to indicate how frequently they used alcohol and a variety of drugs before or during sex in the past 3 months. Seventy-seven percent of the sample had used alcohol before or during sex in the past three months, 37.8% had used marijuana, 0.4% had used crack, 0.4% had used heroin, 0.4% had used
opiates, 6.3% had used cocaine, 6.3% had used speed, 6.3% had used MDMA, 23% had used poppers and 1.2% had used ketamine. Total drug use during sex was calculated by adding up participant scores based on frequency of use of each drug. Scores ranged from 11-23 ($M=13.29$, $SD=2.00$) Dichotomous variables were created for each individual drug to indicate whether or not the participant had used a particular drug before or during sex.

**Barebacking Behaviour.** As expected, those who had barebacked in the past 3 months used substances more frequently ($t (48.73)=2.847$, $p<0.01$) before or during sex than those who didn’t (see Appendix A, Figure 2). Participants who barebacked used cocaine significantly more often ($X^2 (1, 243)=4.31$, $p>0.05$) than participants who didn’t bareback, however those who did use cocaine specified that they used the drug ‘rarely’. Barebackers were also more likely to use speed before or during sex ($X^2 (2, 242)=26.21$, $p>0.001$) and 21.4% of barebackers had used speed before or during sex in the past three months. Also, a significant association between barebacking and popper use was found ($X^2 (3, 241)=24.34$, $p>0.001$), as 47.6% of participants who barebacked had used poppers before sex in the past three months. Further, barebackers were more likely to use Ketamine ($X^2 (2, 243)=6.35$, $p>0.05$), however only 4.8% of participants who barebacked had used ketamine before sex in the past 3 months. No significant relationship between alcohol use and barebacking was found ($X^2 (3, 243)= 4.57$, $p=0.21$).

**Barebacker Identity.** No significant differences in total substance use before or during sex were found in those with a barebacking identity compared with those without ($t (91.31)=1.872$, $p=0.64$) (see Appendix A, Figure 3). Participants who identified as barebackers were more likely to use speed during sex ($X^2 (2, 252)=10.17$, $p>0.01$), as 14% of self-identified barebackers had used speed during sex in the past 3 months compared with 3.2% of non-barebackers. Participants who identified as barebackers also reported more MDMA use than non-barebackers ($X^2 (2, 251)= 8.68$, $p>0.05$), as 12.7% of barebackers have used MDMA compared with 4.3% of non-barebackers. Finally, a significant association between ketamine use
and barebacking identity was found ($X^2 (2, 253)=6.16, p>0.05$), though rates were low as 3.1% of self-identified barebackers used ketamine compared to 0.5% non-barebackers.

**HIV Status**

In terms of HIV prevalence, 8.9% of the sample was living with HIV ($n=22$), 67.3% reported being HIV negative, and 23.7% had never been tested for HIV. One hundred percent of participants living with HIV were currently taking anti-retroviral medication (ARVs). Further, 91% of participants living with HIV ($n=20$) reported having an undetectable viral load, while the remaining 2 participants reported that their viral loads were 40 or less.

**Barebacking Behaviour.** A *Chi Square* Test of Independence revealed that those who barebacked were significantly more likely to be living with HIV ($X^2 (1, 187)=40.70, p>0.01$). Seventy-six percent participants living with HIV had barebacked in the past 3 months. Further, those who barebacked were more likely to have been tested for HIV ($X^2 (1, 236)=9.338, p>0.01$) (see Appendix A, *Figure 4*). Ninety-eight percent of respondents who barebacked had been tested for HIV.

**Barebacker Identity.** Those with a barebacking identity were more likely to be living with HIV ($X^2 (1, 194)= 7.04, p>0.01$). Forty-eight percent of people who identified as barebackers were living with HIV. No significant relationship between HIV testing and barebacker identity was found. ($X^2 (1, 253)=0.001, p=0.97$) (see Appendix A, *Figure 5*).

**STIs**

Regarding STI prevalence, 13.6% of the sample reported contracting at least one STI in the past year. In terms of lifetime prevalence of bacterial STIs, seventeen percent of the sample had contracted gonorrhoea at least once, 4.3% had contracted syphilis at least once, 13.1% had contracted chlamydia at least once, 7.7% had contracted non-specific urethritis at least once, and 13.6% had contracted crabs at least once. In terms of viral STIs, 1.9% had contracted Hepatitis C, 2.7% had contracted Hepatitis B and 6.2% had contracted herpes.
**Barebacking Behaviour.** Those who barebacked were more likely to have contracted an STI in the past year than those who hadn’t ($X^2 (1, 231)=11.25, p<0.05$) (see Appendix A, *Figure 4*). Thirty-one percent of participants who barebacked had contracted an STI in the past year. Further, those who barebacked had a significantly ($t (47.2)= 4.52, p<0.01$) higher lifetime prevalence of STIs ($M=2.3$) compared with those who hadn’t ($M=0.5$).

**Barebacker Identity.** No significant relationship between barebacker identity and STI lifetime prevalence ($t (247)=0.64, p=0.52$), or STI contraction in the past year ($X^2 (1, 242)=0.21, p=0.64$) (see Appendix A, *Figure 5*) was found.

**Risk Behaviour, Bareback Identity and HIV Status**

Participants were asked to report the number of sexual partners they had in the past 3 months, if they had anal sex with a partner of unknown or positive status, and approximate percentage of time that condoms were not used during encounters with partners of unknown or HIV positive status over the past three months. Respondents reported having a mean of 3.43 partners in the past 3 months ($SD=5.43$). Of participants who reported having anal intercourse with a partner of unknown or positive status in the past 3 months ($n=46$), 27% reported that this never happened without a condom, 21.2% reported that this happened without a condom between 10-30% of the time, 7.6% reported that this happened without a condom 40-60% of the time, 9.6% reported that this happened without a condom 90% of the time and 34.6% reported having condomless anal sex with a HIV-positive or unknown status partner 100% of the time. A dichotomous variable (0-90%=0, 100%=1) was created in order to further analyze the correlates of respondents who barebacked 100% of the time.

**Barebacking Behaviour.** Participants who barebacked also had a significantly higher ($t (45.12)=4.21, p<0.01$) number of sexual partners ($M=8$) in the past three months than those who didn’t ($M=2.5$). Surprisingly, no significant relationship ($t (74.42)=-1.48, p=0.14$) between barebacking behaviour and frequency of condom use was found, indicating that participants who had barebacked in the past three
months were not less likely to use condoms overall compared to the rest of the sample. Participants who barebacked also reported having anal sex more frequently than participants who didn’t report barebacking ($t (85.27)=3.933, p>0.001$). A significant association ($\chi^2 (1, 183)= 59.59, p>0.001$) between barebacking 100% of the time and HIV status was found. Sixty percent of participants who reported barebacking 100% of the time were living with HIV, compared with 4.3% of participants who barebacked less than 100% of the time or who didn’t bareback at all.

**Barebacker Identity.** No relationship ($t (249)=1.093, p=0.28$) between number of sexual partners and barebacker identity was found. However, barebacker identity was positively associated with having anal sex more frequently ($t (251)= 3.989, p <0.01$). Barebacker identity was negatively associated ($t (158.9)= -8.79, p<0.01$) with condom use. Further, a significant association ($\chi^2 (1, 239)=8.74, p>0.01$) between barebacking 100% of the time and barebacking identity was found.

**Pleasure Discrepancy With Condoms**

The Pleasure Discrepancy with Condoms variable ($M=0.49, SD=3.85$) was calculated by using a difference score between total pleasure without condoms (for receptive and insertive anal intercourse combined) and total pleasure with condoms (UAI-AI). Scores ranged from -10 to 10 and negative scores represented those who felt that sex was more pleasurable with condoms. It was hypothesized that barebackers would experience a greater pleasure discrepancy with condoms compared to without condoms during anal sex.

**Barebacking Behaviour.** This hypothesis was supported as those who had barebacked in the past 3 months experienced a significantly ($t (241)=3.631, p<0.01$) higher pleasure discrepancy ($M=2.42, SD=3.49$) with and without condoms than those who didn’t report barebacking behaviour ($M=0.9, SD=3.83$) (see Appendix A, *Figure 2*).

**Barebacker Identity.** The same was true for barebacking identity, as those who reported a barebacking identity reported experiencing a significantly ($t (251)=5.722, p<0.01$) higher pleasure discrepancy ($M=2.6769, SD=3.55$) compared with non-barebackers ($M= -0.27, SD=3.59$) (see Appendix A, *Figure 3*).
HIV Status. Participants living with HIV did not report experiencing a significantly (t (23.75)=1.80, p= 0.08) higher pleasure discrepancy with condoms compared to HIV-negative participants.

Sexual Satisfaction and Sexual Problems

Participant scores on the Sexual Satisfaction scale ranged from 5-35 ($M=21.18$, $SD=8.62$). It was hypothesized that barebackers would report higher sexual satisfaction than non-barebackers. Participants were also asked to report whether or not they are currently experiencing a sexual problem “such as erectile difficulties, premature ejaculation, or difficulties with orgasm.” Seventeen percent of participants reported currently experiencing some kind of sexual problem.

Barebacking Behaviour. This hypothesis was rejected as there were no significant differences ($t (241)=-0.546, p=. 59$) between barebackers ($M=20.65$, $SD=7.95$) and non-barebackers ($M=21.45$, $SD=8.80$) in terms of sexual satisfaction (see Appendix A, Figure 2). Further, 37.5% of participants who barebacked reported having a sexual problem. A significant relationship ($X^2 (1, 235)=14.71$, $p>0.001$) between barebacking behaviour and experiencing a sexual problem was found (see Appendix A, Figure 4).

Barebacker Identity. Those with a barebacker identity reported higher sexual satisfaction than those who didn’t. Those who reported a barebacker identity were significantly ($t (251)=2.805, p<0.01$) more sexually satisfied ($M=23.77$, $SD=8.054$) than those who didn’t report this identity ($M=20.34$, $SD=8.65$) (see Appendix A, Figure 3). Similarly, no association between barebacker identity and a sexual problem was found ($X^2 (1, 251)=2.92, p=0.88$) (see Appendix A, Figure 5).

HIV Status. Respondents living with HIV were more likely to experience a sexual problem ($X^2 (1, 193)=8.51$, $p<0.01$) than HIV-negative respondents. Forty-five perfect of HIV-positive respondents were currently experiencing a sexual problem, compared with 17.3% of HIV-negative respondents. Despite this, no significant differences ($t (193)= -0.81, p= 0.42$) in sexual satisfaction were found between HIV-positive ($M=20.37$, $SD=7.46$) and HIV-negative respondents ($M= 21.91$, $SD= 8.57$).
The Sero-adaptive Strategies variable captures the number of sero-adaptive strategies each participant uses and was calculated by adding together use of PrEP, strategic positioning, sero-sorting, low viral load, frequent HIV testing, pulling out and PEP. Scores ranged from 0 to 7 ($M=1.64$, $SD=1.47$). It was hypothesized that barebackers would use sero-adaptive strategies more frequently and use a greater number of these strategies.

**Barebacking Behaviour.** This hypothesis was supported as those who reported barebacking behaviour ($M= 3.09$, $SD= 1.76$) used significantly ($t(49.43)=6.138$, $p<0.01$) more sero-adaptive practices than those who didn’t ($M= 1.34$, $SD= 1.22$) (see Appendix A, Figure 2). Participants who barebacked also used PrEP ($X^2(1, 239)= 12.45$, $p>0.01$) (see Appendix A, Figure 4), strategic positioning ($t(45.72)=5.826$, $p<0.05$) (see Appendix A, Figure 4), low viral load ($t(46.4)=5.826$, $p<0.05$) and regular HIV testing ($t(233)=2.476$, $p<0.05$) more frequently as protective strategies than those who didn’t bareback. No significant differences were found in terms of sero-sorting ($t(65.16)=1.01$, $p=0.32$), pulling out ($t(236)=1.422$, $p=0.15$) or low risk sex as a protective strategy ($t(76.84)=1.324$, $p=0.22$).

**Barebacker Identity.** No significant differences were found in those who reported a barebacking identity in total sero-adaptive strategies ($t(86.15)= 1.97$, $p=0.05$) (see Appendix A, Figure 3). However, barebackers were more likely to be on PrEP ($X^2(1, 248)= 5.23$, $p>0.05$) (see Appendix A, Figure 5), used strategic positioning more often ($t(76.81)=2.32$, $p<0.05$) (see Appendix A, Figure 5) and used low risk sex as a protective strategy less frequently ($t(245)=2.29$, $p<0.05$). No significant differences in using sero-sorting ($t(240)=-.47$, $p=0.64$), low viral load ($t(233)=0.65$, $p=0.52$) pulling out ($t(106.33)=1.18$, $p= 0.23$), and frequent HIV testing ($t(239)=-.72$, $p=0.47$) as protective strategies compared to non-barebackers.

**HIV Status.** Participants living with HIV used significantly more ($t(193)= 2.88$, $p>0.01$) sero-adaptive strategies ($M= 2.77$, $SD= 1.63$) than HIV-negative respondents ($M=1.81$, $SD=1.45$). Specifically, 91% of respondents living with HIV used a low viral load as a protective strategy, compared with 18% of HIV-negative respondents ($X^2(1,195)=53.84$, $p>0.001$). Surprisingly, HIV-positive respondents did not use
sero-sorting significantly more often than HIV negative respondents, as 55% of respondents living with HIV, and 48% of HIV negative MSM used sero-sorting ($\chi^2 (1, 195)=0.53, p=0.65$). Thirty-two percent of HIV-positive respondents used strategic positioning, compared with 8.7% of HIV-negative respondents ($\chi^2 (1, 195)=10.45, p=0.001$).

**HIV Treatment and Prevention Optimism and Prevention Message Resistance**

Participants were asked to indicate whether or not the availability of effective treatments for HIV, PEP and PrEP impacted their willingness to engage in condomless anal intercourse with a partner of unknown or positive HIV status.

**HIV Treatment optimism.** Twenty percent of the sample reported that effective treatments for HIV had increased their willingness to engage in condomless anal sex with a partner of unknown or HIV positive status. A significant relationship between barebacking behaviour ($t (44.41)=6.40, p<0.01$) and HIV treatment optimism was found. Similarly, a positive relationship between barebacker identity and treatment optimism was found ($t (73.92)=3.437, p<0.01$).

**PEP Optimism.** Twelve percent of the sample stated that availability of PEP has increased their willingness to bareback. A significant relationship between barebacking behaviour ($t (44.41)=4.692, p<0.01$) and PEP optimism was found. PEP optimism was also significantly associated with barebacking identity ($t (78.57)=2.426, p<0.05$).

**PrEP Optimism.** Sixteen percent of the sample reported that the availability of PrEP has increased their willingness to bareback. Participants who barebacked were more likely ($t (44.22)=5.890, p<0.01$) to report PrEP optimism than those who didn’t. PrEP optimism was also significantly related to barebacker identity ($t (72.86)= 3.747, p<0.01$).

**Prevention Message Resistance.** Respondents were asked to indicate whether or not HIV prevention messages promoting condom use (from HIV organizations, friends, family) are relevant to their decision to engage in condomless intercourse. Fifty-three percent of the sample denied that prevention
messages impact their decision to engage in condomless anal sex. No relationship between barebacking behaviour and prevention message resistance was found ($t(237)=0.41$, $p=0.69$). However, participants with a barebacker identity were more likely $t(163)=-3.493$ $p<0.01$ to resist prevention messages than those without.

**Prevention Strategy Use and Sexual Enjoyment**

Participants were asked to indicate whether different protective strategies interfered with, had no impact or enhanced their sexual enjoyment.

**Condoms.** Eighty-nine percent of participants reported using condoms as a protective strategy. Sixty-three percent of participants reported that condoms interfere with their sexual enjoyment, 33% said they did not impact their sexual enjoyment, 4.4% said condoms increased their enjoyment.

**Microbicides.** Seven percent ($n=18$) of participants reported that they use microbicides to reduce risk, and 83% of those participants reported that microbicides had no impact on their sexual enjoyment.

**PEP.** Seven percent of participants ($n=18$) participants reported using PEP to reduce risk. Fifty-six percent of PEP users reported that PEP had no impact on their sexual enjoyment 33% said that it interfered with their enjoyment, and 11% stated that PEP enhanced their sexual enjoyment.

**PrEP.** Eight percent of the sample reported using PrEP to reduce risk. Ten percent of participants stated that PrEP interferes with their sexual enjoyment, 38% reported that it had no impact, and 52% said it enhanced their sexual enjoyment.

**Strategic Positioning.** Twelve percent of participants reported using strategic positioning to reduce HIV risk. Sixty-three percent of participants stated that strategic positioning had no impact in their sexual enjoyment, 32% stated that it interfered with enjoyment 17% reported that it enhanced enjoyment.

**Low risk sex.** Sixty-three percent of participants used low risk sex (oral sex, mutual masturbation) to reduce risk of HIV transmission. Fifty-one percent reported no interference with enjoyment, 22% reported that low risk sex interfered with their enjoyment and 27% stated that it enhanced sexual enjoyment.
**Pulling Out.** Twenty-nine percent of participants reported using pulling out as a protective strategy. Forty-seven percent reported that it had no impact on their sexual enjoyment, 40% said it had negative impact on their sexual enjoyment and 13.7% said it enhanced their enjoyment.

**Sero-sorting.** Forty-four percent of participants reported using sero-sorting to reduce risk of HIV transmission. Fourteen percent stated that it interferes with their sexual enjoyment, 48% reported no impact and 37.5% reported that it enhances their enjoyment.

**Monogamy.** Sixty-eight percent of participants reported using monogamy as a protective strategy. Eighteen percent reported that monogamy negatively impacted their sexual enjoyment, 28% reported no impact in their sexual enjoyment and 54% stated that it enhances their sexual enjoyment.

**Sexual Communication**

Participants were asked to indicate whether or not “discussing HIV” and “discussing STIs” interfered with their sexual enjoyment.

**Barebacking Behaviour.** Participants who barebacked were more likely to indicate that discussing HIV interfered with their sexual enjoyment compared with non-barebackers ($X^2 (1, 243)= 5.06, p>0.05$). 33% of barebackers endorsed that discussing HIV interferes with their sexual enjoyment, compared with 18% of non-barebackers. No significant association between discussing STIs and sexual enjoyment was found in those who bareback compared with those who didn’t ($X^2 (1, 243)=0.49, p=0.51$).

**Barebacking Identity.** Self-identified barebackers were not more likely to indicate that discussing HIV interfered with their sexual enjoyment compared with non-barebackers ($X^2 (1, 253)=0.75, p=0.75$). The same was true for discussing STIs ($X^2 (1, 253)= 0.13, p=0.72$).

**Predictors of Barebacking Behaviour**

A multiple logistic regression was conducted to predict barebacking behaviour from number of partners, frequency of meeting partners online, benefits of barebacking, number of sero-adaptive strategies and HIV status. These 5 predictors explained 58% of the variance in barebacking behaviour ($R^2=0.58$) and reliably
distinguished between barebackers and non-barebackers ($X^2=23.23$, $p>0.01$ with $df=8$). Prediction success was 91.8% overall (see Appendix A, Figure 1).

**DISCUSSION**

The present study aimed to examine psychosocial and behavioural correlates of barebacking in MSM with an emphasis on maximizing sexual pleasure and reducing risk of HIV transmission in the context of recent developments in HIV treatment and prevention. Previous research has explored barebacking either exclusively based on identity (Halkitis, 2007) or on behaviour (Bancroft et al., 2003; Berg, 2008). Thus, the current study is unique in having examined correlates of both bareback identity and behaviour. The results revealed both interesting similarities and discrepancies between identity and behaviour, and related definitional issues.

**Psychological and Behavioural Correlates of Barebacking**

Individual-level personality and behavioural constructs including sexual sensation-seeking, online sex-seeking and substance use were examined as correlates of barebacking. In terms of sexual sensation-seeking, the hypothesis that barebackers would score higher on the sexual sensation seeking scale than non-barebackers was supported, which is consistent with previous research (Kalichman, 1994; Berg, 2008). Based on ‘cut-off’ score data on sexual sensation-seeking (Grosskopf et al., 2011) barebackers defined by both identity and behaviour in the present sample were high sexual sensation-seekers. Such findings suggest that barebackers have a predisposition to minimize risk, participate in and seek out sexually gratifying situations than non-barebackers. To further support this finding, the present study also found that barebackers engaged in higher risk behaviour; they had anal sex more frequently and had more sexual partners than non-barebackers. Previous research has examined sexual sensation-seeking in relation to bareback behaviour (Berg, 2008; Grosskopf et al., 2011), yet this is the first study to find an association between barebacker identity and sexual sensation-seeking, indicating some congruence between identity and behaviour.
Online sex-seeking has been found to be significantly associated with high sexual sensation seeking (Grosskopf et al., 2011). Seeking sex on hook-up websites requires tolerance for a certain level of both social and sexual risk. Online partners are anonymous, will most often have no mutual friends and may disguise numerous elements of their appearance, personality and potentially, sero-status. Further, websites that facilitate gay sex and hook-ups create a community that is organized around prioritizing pleasure and sexual gratification. If one is looking to fulfill a specific sexual desire (i.e. bareback sex), this can be articulated online when chatting with potential partners or explicitly in one’s online profile. Hook-up websites then facilitate a direct connection to others who have similar sexual interests, making casual sex with multiple partners simple and readily available. As expected, barebackers were more likely to find sexual partners online, and did so more frequently than non-barebackers. This finding is consistent with previous research that examined Internet use and sex-seeking among self-identified barebackers (Grov et al., 2007). The present study also found that respondents who barebacked in the past three months were more likely to indicate a preference for barebacking in their online profile, to have webcam and chat sex, and to chat about barebacking with potential online partners. Adam, Murphy and de Wit (2010) found that online chatting about barebacking with partners met online was significantly associated with condomless anal sex with partners met online, after controlling for intentions, attitudes, behaviour and demographic characteristics. Such results suggest that shared fantasizing and erotic chatting about barebacking with online partners may influence or reinforce subsequent condomless anal sex.

The hypothesis that barebackers would have higher rates of drug use before or during sex was supported. A significant association between barebacking behaviour and cocaine, speed, popper, and ketamine use was found. Additionally, self-identified barebackers revealed higher rates of speed, MDMA or ecstasy, and ketamine use than non-barebackers. These findings are supported by previous research. Halkitis (2005a) found that more occasions of non-injection drug use during sexual encounters predicted barebacker identity. Additionally, one US national online study found that condomless anal sex was significantly correlated with use of poppers, crystal meth, cocaine, marijuana, ecstasy, GHB and ketamine
as well as finding sexual partners online (Hirschfield et al., 2004). Though drug use may have a disinhibiting effect that can ultimately lead to higher-risk sexual behaviours, sexual sensation-seeking as a personality dimension may better explain the association between drug use and higher-risk sex (Kalichman, Heckman & Kelly, 1996). Sensation-seekers often aim to heighten their sensory stimulation and arousal (Kalichman, Heckman & Kelly, 1996), and drugs such as poppers and amphetamines have been found to induce hypersexuality and euphoric states (Halkitis, Green & Caragher, 2006), just as condomless anal sex increases sensation. Additionally, “party n play” (PnP) is an increasingly used colloquialism among MSM, which connotes substance-enhanced sexual activity (Grov et al., 2007). A recent online study of barebacking and drug use found that 21.3% of the sample (n=181) indicated that they used the Internet to find partners for PnP, or sex combined with drugs. Further, barebackers in this study were found to spend more time looking for PnP than non-barebackers (Grov et al., 2007). Therefore, traits such as sexual sensation seeking can predispose MSM to engage in barebacking, online sex-seeking and drug use. In turn, web-based, sociological trends such as PnP have emerged, which may reinforce the hedonistic and pleasure-seeking behaviours of drug use and bareback sex.

**HIV Serostatus and Other STIs**

Consistent with the hypothesis and with previous research (Parsons & Bimbi, 2007), rates of seropositivity were higher among barebackers compared with non-barebackers. Barebackers were also more likely to identify as ‘poz’, and 60% of respondents living with HIV reported barebacking 100% of the time. One hundred percent of respondents living with HIV (n=22) were taking anti-retroviral medication and 91% of HIV-positive individuals reported having an undetectable viral load. Further, respondents living with HIV used more sero-adaptive strategies than HIV-negative respondents, including low viral load and strategic positioning. Many MSM living with HIV may have had a propensity for condomless anal sex before seroconverting, and this behaviour may continue after sero-conversion due to a number of reinforcing factors. Much previous research on HIV-positive barebackers frames this behaviour as a public health hazard that poses high risk of HIV-transmission (Halkitis, 2005; Halkitis & Parsons, 2003;
Kalichman, 1997). However, recent research suggests having an undetectable viral load makes it nearly impossible to transmit HIV to another sexual partner (Rodger et al., 2014). Secondly, 55% of HIV-positive respondents used sero-sorting as a protective strategy, indicating that many MSM PHAs are barebacking with other MSM PHAs to reduce risk of HIV transmission. Finally, 32% of PHAs in the present study used strategic positioning as a protective strategy, which has been found to reduce risk of transmission tenfold (Vittinghoff et al., 1999). Such findings are consistent with previous research on harm reduction in HIV-positive MSM (Parsons et al., 2005; Grov et al., 2007). The more concerning finding from the present study is that 23% of participants had never been tested for HIV. As one-quarter of Canadian PHAs do not know that they are living with HIV (Health Canada, 2011), MSM who are not seeking frequent HIV-testing may pose the highest risk for HIV transmission.

Relatively high rates of STIs were found among barebackers in the present sample. Approximately one third of participants who barebacked had contracted an STI in the past year, and barebackers exhibited a significantly higher lifetime prevalence of STIs compared with non-barebackers. In Canada, rates of STI transmission are steadily increasing. For example, a national STI report revealed that from 2002 to 2011, rates of gonorrhoea, chlamydia and syphilis increased by 41%, 62% and 232%, respectively (Public Health Agency of Canada (PHAC), 2014). Furthermore, the dramatic increase in syphilis rates has been most notable in MSM (PHAC, 2014). In addition, STI data from over 18,000 MSM was collected across 26 STI clinics in the US. Results indicated that the median prevalence in MSM tested for gonorrhoea was 19.2%, and median prevalence for chlamydia was 14.9% in 2014 (CDC, 2014). Finally, a recent review article of 37 studies has found that STIs are particularly prevalent among people living with HIV; on average, 16.3% of people living with HIV were co-infected with another STI (Kalichman, Pellowski & Turner, 2011). Indeed, risk-reduction and sero-adaptive strategies do not protect MSM from STIs, and may in fact increase STI transmission (McCormack & Dunn, 2015). Further, PHAs in the present study revealed very high rates of bareback sex, and STIs in PHAs can increase HIV viral load, thus increasing the risk of HIV transmission (Johnson & Lewis, 2008). Therefore, targeted interventions for both HIV-positive and HIV-negative
barebackers aimed at managing viral STIs, promoting regular STI testing and increasing access to STI treatment that is non-judgemental is an important next step.

**Sero-adaptation and Risk Reduction**

The hypothesis that barebackers would use a variety of sero-adaptive strategies more frequently than non-barebackers was supported. Participants who endorsed bareback behaviour used more sero-adaptive strategies compared with participants who did not. Barebackers were more likely to use PrEP, strategic positioning, low viral load or TasP and frequent HIV testing as preventive strategies than non-barebackers. Self-identified barebackers did not use more sero-adaptive strategies overall, however they were also more likely to be on PrEP and use strategic positioning compared with non-barebackers. These findings are significant as they dispel myths about barebackers having exclusively ‘irresponsible’ and high-risk sex.

Catania *et al.* (1989) stress that the development of techniques to make safe sex physically pleasurable for participants is a priority when developing prevention interventions for MSM. Sero-adaptive strategies are one such way. Indeed, while 63% of the present sample reported that condoms interfere with their sexual enjoyment, 90% of PrEP users (*n* = 17) reported that PrEP either enhances or does not interfere with sexual enjoyment. Further, 80% of respondents who used strategic positioning (*n* = 24) as a protective strategy stated that it either enhances or does not interfere with sexual enjoyment. Finally, 86% of sero-sorters (*n* = 111) reported that sero-sorting does not impact or increases their sexual enjoyment. Evidently, MSM in general and barebackers, specifically are often using strategies aside from condom use to reduce sexual risk. In turn, they are endorsing that such strategies enable them to enjoy their sexual encounters more than if they were to use condoms. Further, self-identified barebackers in the present study were more likely to resist prevention messages promoting condom use compared with non-barebackers. Some authors have discussed barebacking as a “resistance habitus” or potential “backlash” against the societal trend of sterilizing gay male sexuality (Crossley, 2004). Regardless, condomless anal sex is a significant aspect of self-concept in self-identified barebackers. Therefore, education and prevention efforts that focus on sexual pleasure and enhancing efficacy of sero-adaptive techniques (i.e. use of lubrication when strategic positioning,
medication adherence for TasP) may be more effective with this population than promoting condom use 100% of the time.

**Treatment and Prevention Optimism**

As expected, barebackers in the present sample believed that availability and efficacy of ARV medication, PrEP and PEP had increased their willingness to bareback, indicating higher treatment and prevention optimism among barebackers. Previous research has found an association between HIV treatment optimism and sexual sensation seeking (Grosskopf et al., 2001), therefore high sexual sensation-seekers may use recent advancements in HIV treatment and prevention as a justification to continue engaging in high-risk sexual behaviour. However, recent research on effectiveness of TasP and PrEP (Rodger et al., 2014; McCormack & Dunn, 2015) does indeed warrant optimism about advancements in treatments. Though some sceptics have expressed fears that ARVs and preventative medication will encourage bareback behaviour (Volk et al., 2015), only a small subset of the current sample believed that such advancements impacted their sexual behaviour (16% for PrEP, 12% for PEP and 20% for ARVs). Therefore, it is most likely that MSM who already tend to bareback or engage in higher risk sexual behaviour are the ones who decide to begin taking PrEP. It is less likely that MSM who already practice safe sex by using condoms or practicing monogamy will begin to have higher risk sex due to HIV treatment and prevention optimism. Further, even if new treatment and prevention methods begin to increase rates of condomless anal sex, new research on these treatments are beginning to drastically alter what ‘safe’ sex looks like between MSM. For example, condomless anal sex where one partner is HIV-positive but undetectable and the other partner is negative and taking PrEP most likely has less of a risk of transmission than two MSM using a condom and believe they are sero-negative but haven’t been tested recently. Again, the more pressing area of concern for health professionals may be prevention of other STIs in the wake of advancements in HIV treatment and prevention.

**Sexual Pleasure, Satisfaction and Problems**
Contrary to the stated hypothesis, barebacking behaviour was not associated with higher levels of sexual satisfaction. This finding was initially surprising as barebackers often cite increased sexual pleasure and satisfaction as a reason to have condomless intercourse (Carballo-Dieguez et al., 2010). However, 38% of participants who barebacked reported experiencing a sexual problem such as erectile dysfunction or delayed orgasm. This finding may be mediated by HIV status, as participants living with HIV were more likely to report a sexual problem than HIV-negative participants. Despite this, respondents living with HIV did not report lower levels of sexual satisfaction overall. Therefore, future research into how sexual satisfaction relates to sexual dysfunction, HIV status and barebacking is warranted.

Previous research has revealed strong associations between sero-positivity, sexual risk-taking and erectile difficulties with condoms (Cove & Petrak, 2004; Adam et al., 2005). Therefore, sexual problems in barebackers may account for lower rates of satisfaction and reluctance to use a condom, as many MSM experiencing sexual problems report that condom use exacerbates their difficulties (Cove & Petrak, 2004). Indeed, participants who barebacked and self-identified barebackers reported that sex with condoms was significantly less pleasurable compared to non-barebackers. On the other hand, self-identified barebackers reported increased sexual satisfaction and did not report higher rates of sexual problems compared to the rest of the sample. Qualitative differences between self-identified barebackers and participants who engaged in barebacking will be discussed further below. Briefly, self-identified barebackers are surmised to have bareback sex more frequently with a primary partner and be more confident about their partner’s negative status. These differences may play a role in increased sexual satisfaction among self-identified barebackers. Firstly, monogamous participants or participants who have a primary partner have been found to experience a more fulfilling sex life than participants who tend to have more one-night stands (Rojas Castro et al., 2010). Further, another study found that greater satisfaction with one’s relationship status was correlated with sexual satisfaction (Rosser et al., 1997). Secondly, sexual problems have been found to be associated with a number of psychosocial problems such as depression, anxiety, and low self-esteem (Asboe et al., 2007; Cove & Petrak, 2004) and sexual satisfaction is correlated with overall life satisfaction (Alfonso,
In turn, those with low self-esteem (HIV-positive men, in particular) often have difficulty with sexual communication (Moskowitz & Seal, 2011). Therefore, a subset of participants who barebacked in the past 3 months may be reluctant to discuss HIV or STIs with potential partners and therefore engage in sexual intercourse without knowing partners’ sero-status. Conversely, sero-negative self-identified barebackers who are aware about their sexual partners’ sero-negative status may be having more frank discussions about HIV status with potential partners, thus decreasing fears about HIV transmission and increasing sexual satisfaction. Findings regarding sexual communication in the present study will be discussed in the following section. Future research into sexual communication in self-identified barebackers and MSM who have condomless anal sex with partners of unknown status is warranted.

Another interesting finding is that non-barebackers on average reported that sex was more pleasurable with condoms. This finding suggests that some MSM who use condoms may find that they enhance sexual satisfaction as they can decrease any concern about STI or HIV transmission. Eroticizing condoms has been described in previous literature (Catania et al., 1989) as a strategy to increase condom use among MSM, and such results indicate that this strategy is actually being used by a subset of MSM. Catania et al. (1989) state, “a key component to practicing safe sex may be an individual’s ability to achieve and maintain a satisfying sex life within the context of safe sex” (p. 252). The present study found no significant differences based on sero-status in pleasure discrepancy with condoms. However, trends in the data reveal that participants living with HIV reported that sex with condoms was less pleasurable than sero-negative participants. Such trends may have been more salient with a larger sample of respondents living with HIV. Therefore, prevention interventions that focus on eroticizing condom use may be more effective for HIV-negative MSM. Whether safety or risk reduction is achieved through sero-adaptation, condom use, or sexual communication, the need to focus on sexual satisfaction when increasing sexual safety is paramount.

Identity, Behaviour and Attitudes about Barebacking
The present study defined bareback behaviour as “condomless anal sex with a partner of unknown or positive HIV status.” One of the most interesting and perhaps surprising findings of the present study was the significant discrepancy between bareback identity and bareback behaviour in the past three months. Though one might expect that condomless anal sex does not necessitate a bareback identity, it may be presumed that a barebacker identity would be associated with frequent bareback behaviour. This was not the case, as less than one third (28%) of participants who identified as barebackers had condomless anal sex with a partner of unknown or positive status in the past three months. Though surprising, this result is not inconsistent with previous findings. In fact, Halkitis (2007) found no direct relationship between strength of barebacking identity and frequency of condomless anal sex or number of bareback partners. This finding may be partially explained by varying interpretations of the word “barebacker.” For example, some participants who have condomless anal intercourse only with a primary partner may self-identify as a “barebacker,” which would not have been captured in the present study’s behavioural definition of barebacking.

The present study found that participants who engaged in barebacking were more likely to endorse that discussing HIV with sexual partners interferes with their sexual enjoyment compared with the rest of the sample. This fits well with previous research that found that barebacking behaviour most often happened with no discussion about STIs or HIV status (Carballo-Dieguez et al., 2011). No such differences were found when comparing self-identified barebackers with non-barebackers. Therefore, self-identified barebackers may be discussing sero-status with potential partners more frequently than those who engaged in barebacking behaviour, thereby decreasing the number of bareback encounters with “partners of HIV-positive or unknown status” for this population. Another interesting discrepancy was that no relationship between bareback behaviour and overall frequency of condom use was found, whereas barebacker identity was significantly negatively associated with condom use. Further, while bareback behaviour was correlated with having a higher number of sexual partners, bareback identity was not. This discrepancy in findings may be due to the third variable of relationship status, as it is likely that barebackers in a relationship would
rarely use condoms with their partner. On the other hand, some MSM who reported bareback behaviour in the past 3 months may normally use condoms, while barebacking may be an occasional “slip up” or anomaly. Such differences reveal a need for future researchers to account for varying definitions of “barebacking” and “barebacker” identity.

Despite the identity-behaviour discrepancy, the results of the present study suggest a significant connection between bareback behaviour and identity when compared with non-barebackers. As expected, participants who had barebarked in the past three months revealed significantly higher scores on the Barebacking Identity Scale than participants who had not. However, strength of barebacking identity appears to be weaker in the present sample of barebarkers compared to Halkitis’ (2007) study on MSM who had recently barebarked. Participants who barebarked also scored higher on the Benefits of Barebacking scale (BBS); they perceived greater emotional, sexual and psychological benefits to barebacking than those who hadn’t barebarked in the past three months. Barebarkers’ scores on the BBS in the present study were similar to scores reported in Halkitis’ (2007) study. These results suggest that for many barebarkers, identity, behaviour and attitudes mutually and reciprocally influence each other. Indeed, strength of barebacking identity and perceived benefits of barebacking were moderately, positively correlated. Self-concept as a barebarker may infuse condomless sex with meaning and in turn increase perceived emotional and psychological benefits of the act. High scores on the BBS suggest that for many barebarkers, the act of barebacking can be symbolic of trust, intimacy and shared erotic experience. Burke and Reitze’s (1981) paper on identity’s impact on subsequent behaviour in college students suggests, “identities are symbolic and reflexive in character. It is through interaction with others that these self-meanings come to be known and understood by the individual.” (p. 84). Likewise, barebarker identity implies a self-concept that is shared with some and differs from others, creating an in-group with whom to share the behaviour, thus bolstering both identity and behaviour.
Limitations

There are a number of methodological limitations to the present study. Firstly, as the study included a number of variables, the sample size could have been larger in order to increase generalizability of the findings. Specifically, more respondents living with HIV would have elucidated which factors were mediated by HIV status and would have provided more insight into this subset of MSM. Secondly, the sample was 80% white, highly educated, 63% of the sample made over $40 000 per year and 69% of the sample lived in a large urban area (population of at least 100 000). Therefore, the findings cannot be generalized across various cultural, socioeconomic and geographical variations in groups of MSM. With such an emphasis on sero-adaptive strategies, it is important to note that frequent HIV testing, ARV treatments and preventative protocols such as PEP and PrEP are highly expensive (especially in the US) and not accessible to many lower-income MSM of colour (Liu et al., 2008). Future research and intervention efforts should focus on increasing access to such preventative strategies. Thirdly, the present study was conducted as an online survey marketed as the “Let’s Talk About Sex Sexuality Study.” Response bias is a methodological limitation when conducting surveys in general, as respondents are often self-selected based on their particular interests. Further, online surveys do not capture respondents who do not have access to Internet (Anderson & Kanuka, 2003). The present sample may have a biased interest in sex and sexuality, and may have been potentially skewed toward higher sexual sensation-seeking scores and higher risk behaviour in general. Additionally, the sampling strategy was not randomized, and the majority of the respondents were recruited either by snowball sampling via Facebook, by HIV/AIDS and LGBT Health-focused Community Organizations and through online ‘gay’ and ‘HIV/AIDS’ subforums on reddit.com. Further, all of the measures in the present study were self-report; therefore the results are subject to self-report biases. Though the online platform provided a private and anonymous setting for participants to complete the survey, sexual behaviour is a highly sensitive topic and certain participants may be reluctant to report sexual risk behaviour due to stigma and social desirability.
Some of the present study’s results also revealed further methodological limitations. Since it appeared that “barebacking” was defined simply as “condomless anal sex” by the majority of the participants, future research should consider excluding monogamous participants and participants who only bareback with a primary partner. Many of such participants identified as a barebacker but may have accounted for much of the discrepancy between bareback identity and behaviour given the relatively low risk of their sexual behaviour. Similarly, many self-identified barebacks did not report having unprotected anal intercourse with someone of unknown or HIV-positive status. We posited the idea that this may be due to more thorough sexual communication among self-identified barebacks regarding HIV and STI status with potential partners. Future research should examine differences in sexual communication between self-identified barebacks and MSM who exhibit bareback behaviour. Further, a more apt behavioural definition for barebacking may be “condomless anal sex with anyone of HIV-positive or unknown serostatus or anyone other than a monogamous or primary partner.” Furthermore, other possible explanations for the identity and behaviour discrepancy may be that “barebacking in the past three months” was too narrow a time frame, or HIV-negative participants who identified as a barebacker were more confident that their sexual partners were also HIV-negative compared with MSM who engaged in barebacking behaviour. Additional standardized measures of HIV and STI disclosure would be necessary to further examine this phenomenon.

**Conclusion and Directions for Future Research**

The present study confirmed previous findings that indicate that barebacks are often high sexual sensation-seekers, meet sexual partners online and use substances before and during sex. Many barebacks perceive greater emotional and psychological benefits to condomless sex and have integrated their behaviour into their self-concept by claiming a barebacker identity. While those who endorsed recent barebacking behaviour reported a higher number of sexual problems, self-identified barebacks reported
being more sexually satisfied than non-barebackers. These findings indicate that while barebacker identity may be organized around increasing sexual satisfaction and prioritizing pleasure, some MSM may engage in barebacking behaviour to mitigate sexual problems. Though barebackers are more likely to be HIV-positive, have a greater number of STIs and exhibit greater risk behaviour than non-barebackers, this subset of MSM were also more likely to engage in sero-adaptive strategies to reduce sexual risk. Further, it is important to consider the broader historical and socio-political context of barebacking. Gay sex has historically been stigmatized by the public (Moskowitz, 2010), and during the onset of the HIV/AIDS crisis, it became inextricably linked to death and disease (Frasca et al., 2012). Since the early 1990’s, research has examined gay male sexuality from a public health perspective, framing condomless anal sex as pathological, “irrational,” and as an epidemiological crisis (Junge, 2002). However, barebackers in the present study perceived emotional and psychological benefits to barebacking, highlighting how trust and intimacy are motivators for condomless anal sex. Further, post-modern theorists have emphasized how bareback culture may be a healthy expression of sexuality between gay men and how the ‘intimacy’ and kinship that condomless sex creates may be an important remedy for the fear and shame that gay sex so often connoted (Dean, 2009; Junge, 2002). Much previous research on barebacking is now out-dated when considering the recent findings on the efficacy of treatment as prevention and preventative strategies like PrEP. Such advancements in treatment and prevention will inevitably begin to change public and academic discourse around the meaning of safe sex for MSM. Moreover, the present study revealed that while barebackers tend to be more optimistic about biomedical HIV treatments and prevention strategies, they also tend to be more resistant to prevention messages encouraging condom use. Therefore, future intervention efforts aimed at barebackers should focus on enhancing efficacy of sero-adaptive strategies (i.e. frequent HIV and STI testing, ARV and PrEP medication adherence, etc.) rather than on encouraging use of condoms. Finally, given the findings that indicate that a many barebackers use the Internet to find sexual partners online, Internet-based intervention strategies that focus on sero-adaptation may be an accessible and apt format for this population.
References


Appendices

Appendix A

Figure 1.

![Predictors of Barebacking Behaviour](image)

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Has barebacked</th>
<th>Has not barebacked</th>
<th>95% CI for Mean Difference</th>
</tr>
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<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>n</td>
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<tr>
<td>BB Benefits</td>
<td>28.79</td>
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<td>12.59</td>
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<td>7.95</td>
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</tr>
<tr>
<td>PDC</td>
<td>2.42</td>
<td>3.49</td>
<td>42</td>
</tr>
<tr>
<td>SUS</td>
<td>14.17</td>
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</tr>
<tr>
<td>SAS</td>
<td>3.10</td>
<td>1.76</td>
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* p < .05. **p < .01. ***p < 0.001

Figure 2.

*Results of t-tests and Descriptive Statistics of Barebacking (BB) Benefits, Barebacker (BB) Identity, Sexual Sensation Seeking (SSS), Sexual Satisfaction (SS), Pleasure Discrepancy with Condoms (PDC), Substance Use During Sex (SUS) and Seroadaptive Strategies (SAS) by Barebacking Behaviour*
### Figure 3

Results of t-tests and Descriptive Statistics of Barebacking (BB) Benefits, Barebacker (BB) Identity, Sexual Sensation Seeking (SSS), Sexual Satisfaction (SS), Pleasure Discrepancy with Condoms (PDC), Substance Use During Sex (SUS) and Seroadaptive Strategies (SAS) by Barebacker Identity

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Group</th>
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<th>df</th>
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</thead>
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<td></td>
<td>Barebacker identity</td>
<td>Non-Barebacker identity</td>
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<td></td>
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<tr>
<td>BB Benefits</td>
<td>M  29.65, SD 7.11, n 65</td>
<td>M 22.20, SD 8.76, n 189</td>
<td>5.07, 9.82</td>
<td>6.84***</td>
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<tr>
<td>BB Identity</td>
<td>M 16.18, SD 3.34, n 65</td>
<td>M 8.28, SD 3.12, n 189</td>
<td>7.00, 8.80</td>
<td>17.30***</td>
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<tr>
<td>SSS</td>
<td>M 28.26, SD 4.85, n 65</td>
<td>M 25.63, SD 5.48, n 189</td>
<td>1.12, 4.14</td>
<td>3.44**</td>
</tr>
<tr>
<td>SS</td>
<td>M 23.77, SD 8.05, n 65</td>
<td>M 20.34, SD 8.63, n 189</td>
<td>1.02, 5.83</td>
<td>2.81**</td>
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<tr>
<td>PDC</td>
<td>M 2.68, SD 3.55, n 65</td>
<td>M -0.27, SD 3.59, n 189</td>
<td>1.93, 3.95</td>
<td>5.73***</td>
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<td>SUS</td>
<td>M 13.73, SD 2.33, n 65</td>
<td>M 13.13, SD 1.78, n 189</td>
<td>-0.04, 1.14</td>
<td>1.87</td>
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<td>SAS</td>
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<td>M 1.52, SD 1.30, n 188</td>
<td>-0.01, 0.99</td>
<td>1.97</td>
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* p < .05. **p < .01 ***p < 0.001
Results of Chi-square Test and Descriptive Statistics for HIV Status, HIV testing, STI Contraction, Sexual Problems, Meeting Sexual Partners Online, Chatting about barebacking online by Bareback Behaviour

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<th>$X^2$</th>
<th>DF</th>
</tr>
</thead>
<tbody>
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<td><strong>HIV Status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV + HIV -</td>
<td>16 (39%)</td>
<td>5 (3.4%)</td>
<td>40.70***</td>
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</tr>
<tr>
<td></td>
<td>25 (61%)</td>
<td>141 (96.6%)</td>
<td></td>
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<tr>
<td><strong>HIV Testing</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>41 (97.6%)</td>
<td>148 (73.6%)</td>
<td>11.57**</td>
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<tr>
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<td>1 (2.4%)</td>
<td>53 (26.4%)</td>
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</tr>
<tr>
<td><strong>STI Contraction</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (30.8%)</td>
<td>96 (47.8%)</td>
<td>20.17***</td>
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<tr>
<td>No</td>
<td>27 (69.2%)</td>
<td>105 (52.2%)</td>
<td></td>
<td></td>
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<tr>
<td><strong>Sexual Problem</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>15 (37.5%)</td>
<td>50 (24.9%)</td>
<td>17.08***</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>25 (62.5%)</td>
<td>151 (75.1%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Meeting sex partners online</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>36 (85.7%)</td>
<td>105 (52.2%)</td>
<td>20.17***</td>
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<td>No</td>
<td>6 (14.3%)</td>
<td>172 (89.6%)</td>
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<td></td>
</tr>
<tr>
<td><strong>Chatting re: bb</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>24 (57.1%)</td>
<td>151 (75.1%)</td>
<td>17.08***</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>18 (42.9%)</td>
<td>50 (24.9%)</td>
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<td><strong>Barebacker Identity</strong></td>
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<td>Yes</td>
<td>18 (42.9%)</td>
<td>46 (23.2%)</td>
<td>6.82**</td>
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<tr>
<td>No</td>
<td>24 (57.1%)</td>
<td>152 (76.8%)</td>
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<td><strong>Taking PrEP</strong></td>
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<tr>
<td>Yes</td>
<td>9 (17.6%)</td>
<td>8 (4%)</td>
<td>12.08**</td>
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<td>No</td>
<td>42 (82.4%)</td>
<td>193 (96%)</td>
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<td><strong>Seropositions</strong></td>
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<tr>
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<td>16 (31.4%)</td>
<td>8 (4%)</td>
<td>35.42***</td>
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<tr>
<td>No</td>
<td>35 (68.6%)</td>
<td>193 (96%)</td>
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Numbers in parentheses indicate column percentages. *p < .05 **p < .01 ***p < .001
Figure 5.

Results of Chi-square Test and Descriptive Statistics for HIV Status, HIV testing, STI Contraction, Sexual Problems, Meeting Sexual Partners Online, Chatting about barebacking online, Taking PrEP and Seropositioning by Barebacker Identity

<table>
<thead>
<tr>
<th>Barebacker Identity</th>
<th>Barebacker</th>
<th>Non-Barebacker</th>
<th>$X^2$</th>
<th>DF</th>
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<tr>
<td><strong>HIV Status</strong></td>
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<tr>
<td>HIV + HIV -</td>
<td>11 (22.4%)</td>
<td>11 (7.6%)</td>
<td>7.94**</td>
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<td></td>
<td>38 (77.6%)</td>
<td>133 (92.4%)</td>
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<td><strong>HIV Testing</strong></td>
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</tr>
<tr>
<td>Yes</td>
<td>50 (76.9%)</td>
<td>145 (77.1%)</td>
<td>0.001</td>
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<tr>
<td>No</td>
<td>15 (23.1%)</td>
<td>43 (22.9%)</td>
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<td><strong>STI Contraction</strong></td>
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<tr>
<td>Yes</td>
<td>8 (12.7%)</td>
<td>27 (15.1%)</td>
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<tr>
<td>No</td>
<td>55 (87.3%)</td>
<td>152 (84.9%)</td>
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<td><strong>Sexual Problem</strong></td>
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<td></td>
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</tr>
<tr>
<td>Yes</td>
<td>16 (25%)</td>
<td>29 (15.5%)</td>
<td>2.92</td>
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</tr>
<tr>
<td>No</td>
<td>48 (75%)</td>
<td>158 (84.5%)</td>
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<tr>
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<td>Barebacker</td>
<td>Non-Barebacker</td>
<td>$X^2$</td>
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<td>34 (52.3%)</td>
<td>103 (54.8%)</td>
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<td>31 (47.7%)</td>
<td>85 (45.2%)</td>
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<tr>
<td><strong>Chatting re: bb</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>33 (50.8%)</td>
<td>46 (24.5%)</td>
<td>15.56***</td>
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<tr>
<td>No</td>
<td>32 (49.2%)</td>
<td>142 (75.5%)</td>
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<td><strong>Bareback Behaviour</strong></td>
<td>Barebacker</td>
<td>Non-Barebacker</td>
<td>$X^2$</td>
<td>DF</td>
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<td>Yes</td>
<td>18 (28.1%)</td>
<td>33 (17.8%)</td>
<td>3.09</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>46 (71.9%)</td>
<td>152 (82.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Taking PrEP</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9 (13.8%)</td>
<td>8 (4.3%)</td>
<td>7.09**</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>56 (86.2%)</td>
<td>180 (96.7%)</td>
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<tr>
<td><strong>Seropositions</strong></td>
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<td></td>
</tr>
<tr>
<td>Yes</td>
<td>12 (18.5%)</td>
<td>12 (6.4%)</td>
<td>8.21**</td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>53 (81.5%)</td>
<td>176 (93.6%)</td>
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</tbody>
</table>

Numbers in parentheses indicate column percentages. *p < .05 **p<0.01 ***p<0.001
Appendix B

Do you identify as a gay or bisexual male over the age of 18?

**Would you like the opportunity to reflect on your own sexuality?**

**Fill out this anonymous survey on sexuality!**

Sexual fantasy is a seldom-researched, incredibly personal and exciting topic. This is an opportunity for you to not only reflect on your own experience but also share your perspective anonymously.

We are recruiting male-identified participants over the age of 18 in Canada and the United States with access to internet, who self identify as ‘gay’, ‘queer’, or ‘bisexual’ and who are interested in filling out an online survey about their sexual fantasies, desires and behaviours.

It is important to us that our research reflects a diversity of opinion and experience from within the gay, bisexual and queer communities. This research seeks to better understand the community and contribute to a growing body of knowledge which seeks to support gay, bisexual and queer individuals and their experiences.

The survey will take approximately 30-45 minutes to complete and is entirely anonymous.

Upon completion of the survey you will be given the opportunity to enter your e-mail address for a draw for a **$100** VISA gift card. You have approximately a 1 in 50 chance of winning the VISA gift card.

If you are interested in participating please go to the link below to obtain more information about the study.

**LINK**

Department of Applied Psychology & Human Development Ontario Institute for Studies in Education
University of Toronto
Appendix C

Consent Form

The purpose of this informed consent is to ensure that you understand the purpose of the study and the nature of your involvement. The informed consent must provide you with sufficient information such that you have the opportunity to determine whether you wish to participate in the study.

Title of Study: Sexual Enjoyment, Identity and Resistance: An Exploration of Risk Behaviour in Men Who Have Sex With Men

Context of the Research Project: The researcher of this study is currently enrolled in the M.A. program at the Ontario Institute for Studies in Education at the University of Toronto (OISE/UT). This research partially fulfills the requirements for the researcher’s Master’s program and the results from this project may be used for professional publication. This letter is to help you understand the nature of the research so that you can decide if you want to participate. Participation is completely voluntary, and participants will be free to withdraw at any time. Your withdrawal will not affect the research in any way. Should you have any concerns about the research, you may at any time contact Dr. Roy Gillis (supervisor) at (416) 978-0679 or the researcher, Natania Marcus at sexualfantasiesandrealities@gmail.com. You will receive an update of the research after it is finished, if you request one.

Ethical Concerns: Should the supervisor or researcher not be able to address your concerns about this study, please contact the University of Toronto Ethics Review office at: (416) 946-3273 or ethics.review@utoronto.ca

Purpose: The purpose of this study is to better understand the relationship between sexual fantasies and desires and sexual behaviour in reality in gay and bisexual men. This study will focus particularly on how differing levels of sexual risk mediate the relationship between sexual fantasy and reality. The goal of this research is to better inform counsellors and clinicians who work with gay and bisexual men.

Task requirements. Participants must self identify as the male gender, gay/queer or bisexual, 18 years of age or older, and currently reside within the Greater Toronto Area (GTA). Eligible participants will complete an online self-report survey. You will be presented with survey questions concerning recent sexual activity, sexual satisfaction, and sexual fantasy with one of several options.

Duration and locale: This session will take approximately 30-45 minutes and will be completed entirely online using a confidential and secure web-based survey tool.

Storage and Retention of Participant Data: Data will be kept on secure, encrypted USB port and locked in a filing cabinet with access only by project staff. Data will be kept until after the publication of the results.

Publication and Presentation of Results: Results may be presented at conferences or published in journals. Your name will not be associated with the research in any way.

Potential risk/benefits: The data collected from this research study may or may not benefit you in the immediate. You will have the opportunity however through participation in this study to reflect upon your sexual fantasies, activities and satisfaction. Some people may find this reflection to be helpful in their personal lives. The goal of this research is to assist mental health practitioners and clinicians and others in understanding the importance or relevance of actualizing sexual desires and fantasies.

However, some of the questions may make you feel somewhat uncomfortable because they ask about personal aspects regarding your values and beliefs surrounding sex, sexuality and relationships. I will provide you with contact information of community resources that specialize in helping people who are experiencing difficult emotions and may need someone to talk to.
Anonymity/confidentiality: The data collected in this study are strictly confidential. You will not be asked to put your name anywhere on the survey. Only research personnel affiliated with this project will have access to the data. No identifying information will be used when we publish or present the results of this study. Furthermore, it is advised that you take this survey in a space that you will have at least 30-45 min of uninterrupted time, due to the sensitive nature of the questions. You may wish to erase your browser history following completion as well and instructions for doing so will be provided to you at the conclusion of the survey. The last screen of the survey will provide a link, which will take you out of the survey into a new webpage giving you the opportunity to enter your email for an approximately 1 in 50 chance of winning a **$100 VISA gift card**. This is optional and email addresses will be kept separate from collected data. You will also be given the opportunity at this point to request an emailed report of the study’s findings.

Right to withdraw: You may withdraw from the study at any time before the survey is completed by exiting the browser, however this will exclude you from the opportunity to enter the draw. You may choose to skip (i.e., not answer) questions (aside from the first 5 questions that determine your eligibility for the study) you find objectionable for any reason without penalty. However, if you complete the survey your data cannot be withdrawn from the study.

Other information: If you are interested in obtaining a brief report of the results you will be given the opportunity at the end of the survey to check a box that requests the findings be emailed to you using the email provided for the draw. Please complete this survey only once, any duplicate emails for the draw will be manually deleted from the data set.

I, (the participant) have read the above form and understand the conditions of my participation. My participation in this study is voluntary, and if for any reason, at any time, I wish to **exit the survey** I may do so without having to give an explanation. Furthermore, I am also aware that the data gathered in this study are confidential and anonymous. My e-mail address, should I decide to provide it, will not be associated with any of my data.

Please print this screen at this point if you want a copy of this page for your own records.

By clicking on the “I consent” button, this indicates that you have agreed to participate in this study and do not have any unresolved questions about your participation in the research.
Appendix D

Note from the researcher

This study hopes to capture a number of behaviour patterns specific to gay/queer communities while remaining inclusive of trans identities and those that defy the gender binary. However, I acknowledge that in using quantitative research methods, some gender identities may not be captured. After receiving feedback, I have changed the inclusion criteria to those who identify as male, as including trans women raised concerns about their inclusion in a study primarily examining sexuality in men. The study also seeks to capture detailed information about sexuality, sexual behaviour from a sex-positive lens and aims to be neutral and non-judgemental of sexual acts of higher 'risk'. Again, by using quantitative research methods, I acknowledge that I am unable to accurately capture all participants' experiences and that some participants may have questions or concerns about the language used in the study. Should you have such questions or concerns, please contact the researcher at msmsexualitystudy@gmail.com. Thanks for participating!

Inclusion Criteria

1. Are you 18 years of age or older? *
   yes
   no (Skip to question 6.)
2. Do you identify as gay, queer, bisexual or as a man who has sex with men? *
   yes
   no (Skip to question 6.)
3. Do you currently or have you at a certain point in your life identified as male? *
   yes
   no (Skip to question 6.)
4. Have you been sexually active with a male-identified person or person assigned male at birth in the past 3 months? *
   Sexual activity can be anything that you deem as sexual
   yes (Skip to question 7.)
   no (Skip to question 6.)

6. Based on your answer, you do not qualify for the current study. Though I would like to include everyone in my study, certain research often requires a focus on a particular population to narrow down the scope of the study. Thank you very much for your interest in participating in this study. If you have any questions or concerns, you can contact me at msmsexualitystudy@gmail.com or write out any concerns below. Please exit this page in your browser.

Demographic Information

1. How old are you? ____ (years)

2. Are you currently dating, sexually active or in a relationship(s)?
If yes… is (are) your partner(s) ■ female ■ male ■ intersex ■ transsexual ■ transgendered ■ two-spirit ■ other? ________________________________
■ prefer not to answer

How long have you been together or dating? ________________________________

How important/significant is this (are these) relationship(s) to you?
■ not much ■ somewhat ■ very much

If you have had previous relationships, was (were) your partner(s) ■ female ■ male ■ intersex ■ transsexual ■ transgendered ■ two-spirit ■ other? ________________________________ ■ prefer not to answer

3. How would you identify your sexual orientation?
■ straight/heterosexual ■ lesbian ■ gay ■ WSW (woman who has sex with women)
■ bisexual ■ MSM (man who has sex with men) ■ queer
■ transensual (person attracted to transsexual or transgendered people)
■ polysexual ■ two-spirit ■ questioning ■ asexual ■ autosexual
■ unsure ■ other ________________________________ ■ prefer not to answer

Do you have concerns related to your sexual orientation, or do you ever feel awkward about your sexual orientation?
■ not at all ■ a little ■ somewhat ■ a lot ■ unsure ■ prefer not to answer

4. How would you identify your gender identity?
■ female ■ male ■ intersex ■ transgendered ■ two-spirit ■ three-spirit ■ four-spirit ■ genderqueer
■ two-spirit ■ FTM (female-to-male) ■ MTF (male-to-female) ■ intersex
■ unsure ■ questioning ■ other ________________________________ ■ prefer not to answer

5. Do you have concerns related to your gender identity, or do you ever feel awkward about your gender identity?
■ not at all ■ a little ■ somewhat ■ a lot ■ unsure ■ prefer not to answer

6. How would you describe your identity within the gay community (if at all)?
Bear
Cub
Otter
Twink
Queer
Queer Person of Colour(QPOC)
Barebacker
Daddy
Queen
Poz
Faerie
Other (please specify) ________________________________
7. How would you describe your ethnicity? (select one):
   - First Nation
   - Black
   - White
   - South Asian
   - West Asian
   - Filipino
   - Arab
   - Latin
   - American
   - Chinese
   - Korean
   - Japanese
   - Biracial/
     mixed race
   - Other

8. Highest level of education attained (select one):
   - Grade School
   - High School Diploma or
   - GED College or Trade
   - School Some University
   - University undergraduate
     degree Post-graduate degree

9. What type of setting best describes where you live (select one):
   - large urban area (population of more than 100,000)
   - medium population centre (population of 30,000-99,999)
   - small population centre (population of 1000-29,999)
   - rural (population less than 1000)

10. What city/town do you currently live in or nearest to? __________________

11. In which country do you live

12. In which state/province do you live

13. Are you currently a student?
   - Yes
   - No

14. What is your approximate household income level? If your partner or someone in your family is supporting you, please include their income.
   - $10,000 or less
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</thead>
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<tr>
<td>$70,000 - $84,999</td>
</tr>
<tr>
<td>$85,000 - $99,999</td>
</tr>
<tr>
<td>$100,000 or more</td>
</tr>
</tbody>
</table>
Appendix E

Sexual Activity and Risk

This questionnaire asks questions about your sexual activity over the past 3 months.

8. Have you engaged in any sexual activity - e.g., mutual masturbation, oral sex, anal intercourse (penis in anus/rectum) with a man during the past three months?
   " Yes " No

9. On how many occasions have you engaged in sexual activity with a man during the past three months?
   " Once a month or less " Several times a month
   " Once or twice a week " Several times a week " At least once a day

10. On how many occasions have you engaged in oral sex with a man during the past three months?
    " Once a month or less " Several times a month
    " Once or twice a week " Several times a week " At least once a day

11. How often have you had anal intercourse in the past three months (If “not at all”, skip to question 15)?
    " Not at all " Once a month or less " Several times a month " Once or twice a week
    " Several times a week " At least once a day

12. When you have anal intercourse how often are you the insertor (“top”)?
    " I don’t have anal intercourse " Never " Sometimes
    " Most of the time " Every time

13. When you have anal intercourse how often are you the insertee (“bottom”)?
    " I don’t have anal intercourse " Never " Sometimes
    " Most of the time " Every time

14. In the past three months, have you had anal intercourse with a man without knowing his HIV status?
    Yes No

    If yes, how often would this have happened?
    " Once or twice " 3-5 times " 6-10 occasions " more than 11 occasions

    If yes, approximately what percentage of time would this have happened without wearing a condom?
    1 = 10% of the time 5 = 50% of the time 10 = 100% of the time
    0 1 2 3 4 5 6 7 8 9 10

15. With how many men have you had any sexual activity in the past three months?

    Please give actual number of men: ...........
16. How many people referred to in question 6 did you have anal intercourse without using a condom? Please give number:

17. In the past three months, how often have you visited bathhouses, saunas or health clubs, bars or other types of club in order to engage in sexual activity? Please give number of occasions..............

18. How open are you about your sexual orientation? Have not disclosed sexual orientation/ Not out to anyone
   • Have disclosed sexual orientation/ out to close friends only
   • Have disclosed sexual orientation/ out to friends and family only
   • Have disclosed sexual orientation/ out publicly including at work and in all social situations
   • unsure
   prefer not to say

19. Have you ever been tested for HIV?
   Yes
   No
   Unsure
   Not willing to say

20. If you have been tested for HIV, when was the last time that you were tested?
   Less than a month ago
   1-3 months ago
   3-6 months ago
   6 months- 1 year ago
   1-2 years ago
   More than 2 years ago

21. If you have been tested for HIV, what was the result?
   Living with HIV/ HIV positive
   Not living with HIV/ HIV negative
   Unsure
   Did not get test results
   Not willing to say

22. If you are living with HIV, have you had your CD4 count assessed recently?
   Yes
   No
   Not willing to say
   Unsure

23. a) If yes, what was the count?
24. b.) If you are living with HIV, have you had your viral load assessed recently?
   - Yes
   - No
   - Not willing to say
   - Unsure

11. c.) If yes, what was your viral load?

25. Have you contracted any sexually transmitted infections (STIs) during the past six months?
   - Yes
   - No

26. Have you ever contracted any of the following:
   - Genital herpes
   - Hepatitis B
   - Hepatitis C
   - HIV

27. How many times in your life have you contracted the following sexually transmitted infections?
   - Gonorrhea
   - Syphilis
   - Chlamydia
   - Non-specific Urethritis (NSU)
   - "Never"
   - "Once"
   - "More than once"

28. Are you currently taking anti-retroviral medication? Yes  No

29. Are you currently taking Pre-Exposure Prophylaxis? Yes  No

30. Are you currently experiencing a sexual problem such as erectile difficulties, premature ejaculation, or difficulties with orgasm? Yes  No

30. If you are living with HIV, have you had your CD4 count assessed recently?
   - Yes
   - No
   - Not willing to say
   - Unsure

31. a) If yes, what was the count?

32. b.) If you are living with HIV, have you had your viral load assessed recently?
   - Yes
   - No
   - Not willing to say
   - Unsure

33. c.) If yes, what was your viral load?

34. Are you currently taking anti-retroviral medication?
   Examples include: AZT (zidovudine) or Retrovir, Truvada (TDF + FTC), Epivir, Combivir, Viracept
   - Yes
   - No
35. Are you currently taking pre-exposure prophylaxis (PrEP)?
PrEP is a way for people who don't have HIV to prevent HIV infection by taking a pill every day. The pill contains two medicines that are also used to treat HIV. For example, Truvada.
Yes
No
Not willing to say

37. Are you currently experiencing a sexual problem such as erectile difficulties, premature ejaculation, or difficulties with orgasm?
Mark only one oval.
Yes
No
Not willing to say
Appendix F

Barebacker Identity Scale and Benefits of Barebacking Scale

The term “barebacking” doesn’t mean the same thing to everyone. Some people define it as “condomless anal sex with a non-primary partner,” others define it as "condomless anal sex with a non- primary partner who is living with HIV or whose HIV status is unknown”, while some use barebacking just to refer to “condomless anal sex”.

50. What does barebacking mean to you? ______________________

51. Please answer the following questions about barebacking based on your opinion or experience:

<table>
<thead>
<tr>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Neither Agree Nor Disagree</th>
<th>Agree</th>
<th>Agree Strongly</th>
</tr>
</thead>
<tbody>
<tr>
<td>I describe myself as a Barebacker</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barebacking is an important part of who I am</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Being a barebacker is central to how I think of myself</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I am a barebacker</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not think of myself as a barebacker</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One way I define myself is as a barebacker</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barebacking increases intimacy between men</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barebacking makes sex more romantic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barebacking is sexier than sex with condoms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barebacking is more &quot;butch&quot; and manly</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barebacking affirms love between men</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Barebacking is &quot;hotter&quot; than sex with condoms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There are psychological benefits to barebacking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Barebacking affirms masculinity
There are emotional
benefits to barebacking

If barebacking applies to you, in your own words, describe 3 reasons for why you engage in barebacking: (Based on the definition you provided above)

________________
________________
___________
Appendix G

Pleasure discrepancy with and without condoms

How much do you enjoy or think you might enjoy the following sexual activities with a male-identified partner or someone assigned male at birth? Please select a number for each sexual activity, whether you have done it or not.

53. Anal intercourse to ejaculation WITH a condom:

ACTIVE (TOP):
Dislike very much
Dislike somewhat
Dislike slightly
Enjoy slightly
Enjoy somewhat
Enjoy very much

RECEPTIVE (BOTTOM):
Dislike very much
Dislike somewhat
Dislike slightly
Enjoy slightly
Enjoy somewhat
Enjoy very much

54. Anal intercourse to ejaculation WITHOUT a condom:

ACTIVE (TOP):
Dislike very much
Dislike somewhat
Dislike slightly
Enjoy slightly
Enjoy somewhat
Enjoy very much

RECEPTIVE (BOTTOM):
Dislike very much
Dislike somewhat
Dislike slightly
Enjoy slightly
Enjoy somewhat
Enjoy very much
Appendix H

Sexual Sensation- Seeking Scale

A number of statements that some people have used to describe themselves are given below. Read each statement and then circle the number to show how well you believe the statement describes you.

Not at all like me  Slightly like me  Mainly like me  Very much like me

1. I like wild “uninhibited” sexual encounters
2. The physical sensations are the most important thing about having sex
3. My sexual partners probably think I am a “risk taker”
4. When it comes to sex, physical attraction is more important to me than how well I know the person
5. I enjoy the company of sensual people.
6. I enjoy watching “X-rated” videos.
7. I am interested in trying out new sexual experiences
8. I feel like exploring my sexuality.
9. I like to have new and exciting sexual experiences and sensations
10. I enjoy the sensations of intercourse without a condom
Appendix I

Sexual Satisfaction Scale

The following questions are about your sexual encounters in the past 3 months. Please select the option that is most true to you.

0- Strongly disagree 1- Disagree 2- Disagree Somewhat 3- Neither agree nor disagree 4- Somewhat Agree 5-Agree 6-Strongly Agree

- In most ways my sex life is close to my ideal
- The conditions of my sex life are excellent
- I am satisfied with my sex life
- So far I have gotten the important things I want from my sex life
- I am generally pleased with the quality of my sex life
Appendix J
Online Sexual Activity

The following questions ask about your online sexual activity or behaviour in the past 3 months:

1. How often do you meet sexual partners (that you have engaged in sexual activity with, in person) online or via smartphone apps?
   - Never
   - Occasionally (1-2 times per month)
   - Sometimes (3-5 times per month)
   - Often (5-10 times per month)
   - Frequently (more than 10 times per month)

2. How often do you 'sext' or have cyber sex with partners met online?
   - Never
   - Occasionally (1-2 times per month)
   - Sometimes (3-5 times per month)
   - Often (5-10 times per month)
   - Frequently (more than 10 times per month)

3. How often do you have 'cyber sex' via webcam with partners met online?
   - Never
   - Occasionally (1-2 times per month)
   - Sometimes (3-5 times per month)
   - Often (5-10 times per month)
   - Frequently (more than 10 times per month)

3.a) If you do 'sext' or have 'cyber sex' with partners met online, with how many partners would you mention having condomless or 'bareback' anal sex?
   - None of my online partners
   - A rare few of my online partners
   - Some of my online partners
   - Most of my online partners
   - All of my online partners

4. If you have an online profile or profile on an app, does your profile explicitly state a preference for bareback or condomless sex?
   - Yes
   - No

5. If you have an online profile or profile on an app, does your profile explicitly state a preference for sex with a partner with the same serostatus as you (serosorting)?
   - Yes
   - No

6. Which websites or apps do you have profiles on?
Appendix K

Drug Use Before/ During Sex

Looking back on your sexual encounters in the past 3 months, how would you describe your alcohol and drug use before or during sex?

Never   Rarely   Frequently   Always

Alcohol
Marijuana/ Hash
Crack
Cocaine
Heroin
Nonprescription methadone
Other opiates (ex. Demerol, codeine)
Amphetamines (ex. Speed, uppers, bennies, crystal meth)
GHB
Ecstasy (E, MDMA)
Poppers
Ketamine (Special K)

Other (please specify) __________
Appendix L

Protection-related sexual enjoyment interference and facilitation

1. How often do you use condoms during anal sex?
   Not at all
   Rarely
   Sometimes
   Most of the time
   All of the time

1 a.) Condoms (please skip if you've never used a condom)
   Definitely interfere with my sexual enjoyment
   Somewhat interfere with my sexual enjoyment
   Don't impact my sexual enjoyment
   Somewhat enhance my sexual enjoyment
   Definitely enhance my sexual enjoyment

2. How often do you use microbicides during anal sex?
   Microbicides are compounds that can be applied inside the rectum to protect against sexually transmitted infections (STIs) including HIV. They can be formulated as gels, creams, films, or suppositories.
   Mark only one oval.
   Not at all
   Rarely
   Sometimes
   Most of the time
   All of the time

2 a. Microbicides (please skip if you've never used microbicides):
   Mark only one oval.
   Definitely interfere with my sexual enjoyment
   Somewhat interfere with my sexual enjoyment
   Don't impact my sexual enjoyment
   Somewhat enhance my sexual enjoyment
   Definitely enhance my sexual enjoyment

3. How many times have you used postexposure prophylaxis (PEP)?
   PEP is a preventive medical treatment started immediately after exposure to HIV, in order to prevent infection. Number of times:

3 a.) PEP (Please skip if you've never used PEP):
   Definitely interferes with my sexual enjoyment
   Somewhat interferes with my sexual enjoyment
   Doesn't impact my sexual enjoyment
   Somewhat enhances my sexual enjoyment
   Definitely enhances my sexual enjoyment

4. How often do you use PrEP (pre-exposure prophylaxis)?
   Not at all
   Rarely
   Sometimes
Most of the time
All of the time
4. a.) PrEP (Please skip if you've never used PrEP):
Definitely interfere with my sexual enjoyment
Somewhat interfere with my sexual enjoyment
Doesn't impact my sexual enjoyment
Somewhat enhances my sexual enjoyment
Definitely enhances my sexual enjoyment

5. How often do you use strategic positioning?
(e.g. having a person living with HIV or higher risk partner be on the bottom, or if living with HIV, ‘bottoming’ more often than ‘topping’)
Not at all
Rarely
Sometimes
Most of the time
All of the time
5 a.) Strategic positioning (please skip if you've never used strategic positioning)
Definitely interferes with my sexual enjoyment
Somewhat interferes with my sexual
Doesn't impact my sexual enjoyment
Somewhat enhances my sexual enjoyment
Definitely enhances my sexual enjoyment

6. How often do you use low/medium risk sexual activity (e.g. kissing, 'hand jobs', oral sex) as a protective strategy?
Protective strategy is something you do in order to reduce risk of transmitting/contracting HIV or other STIs
Not at all
Rarely
Sometimes
Most of the time
All of the time
6. a.) Using low/medium risk sexual activity (e.g. kissing, 'hand jobs', oral sex) as a protective strategy: (Please skip if you've never used low/medium risk sexual activity as a protective strategy)
Definitely interferes with my sexual enjoyment
Somewhat interferes with my sexual enjoyment
Doesn't impact my sexual enjoyment
Somewhat enhances my sexual enjoyment
Definitely enhances my sexual enjoyment

7. How often do you or a partner use pulling out before ejaculation as a protective strategy?
Not at all
Rarely
Sometimes
Most of the time
All of the time
7. a.) Using pulling out before ejaculation as a protective strategy: (Please skip if you've never used pulling out as a protective strategy)
Definitely interferes with my sexual enjoyment
Somewhat interferes with my sexual enjoyment
Doesn't impact my sexual enjoyment
Somewhat enhances my sexual enjoyment
Definitely enhances my sexual enjoyment

8. How often do you use serosorting (having sex with people who have the same HIV status) as a protective strategy?
Not at all
Rarely
Sometimes
Most of the time
All of the time

8. a.) Using serosorting as a protective strategy (Please skip if you've never used serosorting as a protective strategy):
Definitely interferes with my sexual enjoyment
Somewhat interferes with my sexual enjoyment
Doesn't impact my sexual enjoyment
Somewhat enhances my sexual enjoyment
Definitely enhances my sexual enjoyment

9. How often do you use monogamy as a protective strategy?
Not at all
Rarely
Sometimes
Most of the time
All of the time

9. a.) Using monogamy as a protective strategy: (please skip if you've never used monogamy as a protective strategy)
Definitely interferes with my sexual enjoyment
Somewhat interferes with my sexual enjoyment
Doesn't impact my sexual enjoyment
Somewhat enhances my sexual enjoyment
Definitely enhances my sexual enjoyment

10. How often does having a low viral load or a partner with a low viral load act as protective strategy for you?
Not at all
Rarely
Sometimes
Most of the time
All of the time

11. How often do you use rapid HIV testing as a protective strategy?
Not at all
Rarely
Sometimes
Most of the time
All of the time

12. How often do you use frequent HIV/STI testing as a protective strategy?
13. How often do you use abstinence as a protective strategy?
Not at all
Rarely
Sometimes
Most of the time
All of the time

14. Which characteristics of a sexual partner are most important to you?
Please check all characteristics that apply:
Someone with the same serostatus as me
Someone who is willing to bareback
Someone who I can easily communicate with
Someone who uses protection
Someone who is passive
Someone who takes control
Someone whom I find sexy
Someone whom I can trust
Someone who I'm in love with
Someone who I can top
Someone who I can bottom with
Other:

15. Do the following concerns impact your sexual enjoyment?
Some people have reported the concerns below. These concerns may arise before sexual activity,
during sexual intercourse or after sexual intercourse. Please select the box on the right hand side
if the following concerns apply to you.
Finding partners who are willing to do what turns me on
Worry about contracting HIV or if living with HIV, fear of contracting super-infection
Worry about passing on an STI
Worry about contracting other STIs
Worry about passing on HIV
Worry about legal action against me if I pass on HIV
Discussing STIs
Discussing HIV
Self-disclosing HIV status
Self-disclosing about an STI
Feeling self-conscious about communicating my sexual desires to a partner
Appendix M
Treatment and Prevention Optimism

Has the availability of effective treatments for HIV increased your willingness to engage in condomless anal intercourse with a person living with HIV or a partner of unknown HIV status in the last 3 months?

Not at all true for me
Somewhat true for me
Quite a bit true for me
Very true for me
N/A (not engaging in any anal intercourse in the past 3 months)

Has the availability of PEP increased in your willingness to engage in condomless anal intercourse with a person living with HIV or of unknown HIV status in the last 3 months?

Not at all true for me
Somewhat true for me
Quite a bit true for me
Very true for me
N/A (not engaging in any anal intercourse in the past 3 months)

Has the availability of PrEP increased in your willingness to engage in condomless anal intercourse with a partner living with HIV or of unknown HIV status in the last 3 months?

Not at all true for me
Somewhat true for me
Quite a bit true for me
Very true for me
N/A (not engaging in any anal intercourse in the past 3 months)

Messages encouraging condom use are relevant to my decision whether to engage in condomless anal intercourse in the last 3 months.

These messages could be from AIDS services organizations, peers, family, etc.

Not at all true for me
Somewhat true for me
Quite a bit true for me
Very true for me
N/A (not engaging in any anal intercourse in the past 3 months)
Appendix N

Resources

Sometimes completing questionnaires that ask about sex and sexuality raise some questions or concerns for people. Below, please find a list of resources for agencies in your community that may provide you with some support or counselling should you wish to contact them.

http://www.familyservicetoronto.org/programs/dkslesgay.html
Family Service Toronto: David Kelley Services Offers counseling to the gay, lesbian, bisexual and trans community. 416-595-9618

http://www.gersteincentre.org/ Gerstein Crisis Resources
This resource offers free, voluntary and confidential crisis intervention service over the phone and in-person, 24 hours a day, 7 days a week in Toronto. Crisis line 416-929-5200

http://www.the519.org/blog/tag/free-counselling/ 519 Community Centre offers free counseling services for those in need of short-term care in Toronto.

http://sherbourne.on.ca/counselling-services/
The Sherbourne Centre offers LGBTQ Health and Counselling Services in Toronto.

http://www.actoronto.org
Resources and support for people living with HIV/ AIDS in Toronto.

http://www.pwatoronto.org
Resources and support for people living with HIV/ AIDS in Toronto.

http://acmontreal.org
Resources and support for people living with HIV/AIDS in Montreal.

http://aco-cso.ca
Resources and support for people living with HIV/AIDS in Ottawa.

http://www.acns.ns.ca
Resources and support for people living with HIV/AIDS in Nova Scotia

http://acnl.net/services
Resources and support for people living with HIV/AIDS in Newfoundland and Labrador

http://www.hivcl.org
Resources and support for people living with HIV/AIDS in Calgary

http://ninecircles.ca/information/hiv-aids.html
Resources and support for people living with HIV/AIDS in Winnipeg

http://www.aidsvancouver.org
Resources and support for people living with HIV/ AIDS in Vancouver.

https://positivelivingbc.org
Resources and support for people living with HIV/ AIDS in Vancouver.

http://www.avert.org/hiv-aids-help-and-advice-us.htm
HIV/AIDS support by region in the United States.

http://www.avert.org/emotional-needs-and-support.htm
Information about emotional needs and support for people living with HIV.

http://www.glbthotline.org
National LGBT Help Centre in the United States.

http://www.mentalhealthamerica.net/finding-therapy
National resource for finding low-cost psychotherapy in the United States.

If you are looking for a resource and are located in an area not covered in the above list, please email msmsexualitystudy@gmail.com to assist in finding resources in your area.