

The Effect of a Potential Partner's Serostatus on Behavioral Sexual Intentions of Men who Have  
Sex with Men Online and Offline

By

Hunter P. Drake

A thesis submitted in partial fulfillment  
of the requirements of the  
University Honors Program

April 24, 2017

Thesis Director: Dr. Tiffany Chenneville  
Associate Professor, College of Arts and Sciences

University Honors Program  
University of South Florida St. Petersburg  
St. Petersburg, Florida

CERTIFICATE OF APPROVAL

---

HONORS THESIS

---

This is to certify that the Honors Thesis of

Hunter P. Drake

has been approved by the Examining Committee

on April 24, 2017

as satisfying the thesis requirement

of the University Honors Program

Examining Committee:

---

Thesis Director: Tiffany Chenneville, Ph.D.  
Associate Professor, College of Arts and Sciences

---

Thesis Committee Member: Christina Salnaitis, Ph.D.  
Instructor, College of Arts and Sciences

---

Thesis Committee Member: Thomas Smith, Ph.D.  
Associate Professor, Director of University Honors Program

Table of Contents

Abstract ..... 5

CHAPTER 1: Introduction ..... 6

    Statement of the Problem..... 6

    Purpose of the Study ..... 6

    Research Questions and Hypotheses ..... 6

CHAPTER 2: Review of the Literature ..... 9

    Overview..... 9

        Epidemiology. .... 9

    Online Dating.....11

        Types of Online Venues .....11

        HIV Disclosure in Online Venues. .... 14

    Sexual Risk Taking ..... 14

        Risky Sexual Behaviors. .... 14

CHAPTER 3: Methods ..... 17

    Sample Size..... 17

    Participants..... 17

    Measures ..... 17

        Demographic Questionnaire. .... 18

        Behavioral Intentions Questionnaire..... 18

    Pilot Study..... 18

    Procedure ..... 18

    Data Analysis ..... 19

CHAPTER 4: Results ..... 20

Participant Demographics ..... 20

Online Behavioral Intentions ..... 20

    Intention to engage in sex. .... 20

    Intentions to Use Condoms ..... 21

Offline Behavioral Intentions ..... 21

    Intention to engage in sex. .... 21

    Intentions toward Condom Usage..... 22

    Condom Usage Online vs. Offline..... 22

CHAPTER 5: Discussion..... 23

    The Effect of Serostatus on Willingness to Engage in Sex..... 23

    The Effect of Venue on Willingness to Engage in Sex ..... 24

    The Effect of Serostatus on Intentions to Use Condoms ..... 25

    Limitations ..... 26

    Future Directions ..... 27

References..... 29

Appendix..... 41

### Abstract

The purpose of this study was to investigate the impact of HIV status (serostatus) and meeting venue (online or offline) on the sexual behavior (engagement and safer sex practices) of men who have sex with men (MSM). Participants included 469 MSM aged 18 and older recruited using Amazon Mechanical Turk. Participants who met eligibility criteria and agreed to participate were directed to a survey administered via Qualtrics. The survey collected basic demographic information as well as information about behavioral intentions regarding sexual engagement and safer sex practices. Data were analyzed using descriptive statistics, the chi-square test for independence, and correlational statistics. Findings revealed that meeting venue affected the impact of a potential partner's serostatus on MSM's willingness to engage in sexual behavior. These findings have important implications for thinking about HIV prevention and disclosure interventions.

## **CHAPTER 1: Introduction**

### **Statement of the Problem**

HIV infection rates remain high and have even begun to rise in the MSM community. In the age of HIV as a chronic condition due to the success of anti-retroviral therapy, pre-exposure prophylaxis (PrEP), and post-exposure prophylaxis (PEP), people may be paying less attention to serostatus when deciding whether or not to engage in sex. Liao, Millett, and Marks (2006) found a relationship between meeting venue and sexual risk taking whereby individuals were more likely to engage in sexual risk taking when meeting partners online. However, research suggests that serostatus disclosure may affect sexual risk taking behavior. Using mathematical modeling, O'Connell, Reed, and Serovich (2015) found that serostatus disclosure has a protective effect through the following mechanisms: (1) MSM limit choices of potential sex partners to HIV-negative partners only; (2) MSM use condoms during sex when serostatus is known, and (3) MSM engage in less risky sexual behaviors when sex partners identify as HIV-positive or when serostatus is undisclosed. Questions remain about the impact of serostatus and meeting venue on the sexual behavior of MSM.

### **Purpose of the Study**

The purpose of this study was to investigate the effects of serostatus of a potential sex partner and meeting venue (online or offline) on the sexual behavior (engagement and safer sex practices) of MSM.

### **Research Questions and Hypotheses**

This study proposed to answer the following questions:

1. Does a potential sexual partner's serostatus (positive, negative, or undisclosed) affect willingness to engage in sexual behavior?

2. Does meeting venue (online versus offline) affect willingness to engage with a potential sexual partner with HIV?
3. Do behavioral intentions regarding safer sex vary based on the serostatus of the potential sexual partner?

The following hypotheses were tested:

1. MSM will be less likely to engage with a potential sexual partner whose serostatus is positive.
2. MSM will be less likely to engage with a potential sexual partner whose serostatus is undisclosed.
3. MSM will be more likely to engage with a potential sexual partner with HIV in online settings than in offline settings.
4. MSM will be more likely to engage in safer sex practices when serostatus is disclosed as HIV-positive or undisclosed regardless of venue.

### **Definitions**

**AIDS** – an acronym for Acquired Immune Deficiency Syndrome, which describes a collection of symptoms where there is a severe loss of the body's cellular immunity, greatly lowering the resistance to infection and malignancy

**Analingus** – a sex act involving oral to anal stimulation and/or penetration

**Bear** – a term used by gay men to describe a husky, large man with a lot of body hair

**Cruising** – to go out or to go online for the purpose of looking for possible sexual partners

**Fellatio** – a term referring to the act of orally stimulating the male sex organ with, but not limited to, the lips, mouth and tongue

**Fetishes** – a sexual fixation or obsession with a usually non-sexual object. (e.g., socks, horses, monkeys, pain, bondage)

**Geo-Spatial Social Network App** – a term describing an app that combines the features of social networking with location services, allowing users to know the real-time proximity of other users

**HIV** – an acronym for Human Immunodeficiency Virus, which is the virus that can lead to the development of AIDS.

**Human Intelligence Task (HIT)** – a question or task that can be answered or completed online

**MSM** – men who have sex with men

**Post-Exposure Prophylaxis (PEP)** – antiretroviral medicines prescribed for use within 72 hours of exposure of HIV for the purpose of limiting transmission

**Pre-exposure Prophylaxis (PrEP)** – antiretroviral medicines (e.g., Truvada) prescribed for daily use to reduce the risk of HIV transmission

**Seroguessing** – the process of guessing or assuming someone's HIV-status based on a personal, non-medical, subjective assessment

**Serosorting** –the practice of choosing a sexual partner who has the same serostatus as you, often motivated by a desire to engage in unprotected sex

**Serostatus** – a person's HIV-status



## CHAPTER 2: Review of the Literature

### Overview

**Epidemiology.** The precursor to the Human Immunodeficiency Virus (HIV) dates back to as early as the late 1800s in Central Africa (Centers for Disease Control and Prevention [CDC], 2016a). Chimpanzees that carry a similar virus, simian immunodeficiency virus (SIV), are thought to be the original agent of infection in humans (CDC, 2016a). The virus remained unidentified as it spread surreptitiously around the globe over decades. The virus's capability to mutate allowed it to become the virus that we know today as HIV. Once inside the human body, the virus attacks the immune system. Left untreated, the immune system may become severely compromised through the destruction of CD4 cells, also known as T-cells. Subsequently, HIV infection can progress to Acquired Immune Deficiency Syndrome (AIDS; CDC, 2016a). AIDS can make people susceptible to opportunistic infections or cancers, which may lead to death.

***HIV Worldwide.*** Globally, 36.9 million people are thought to be living with HIV (CDC, 2016b). Approximately 2 million new cases of HIV were reported in 2014 alone (CDC, 2016b). The CDC attributes approximately 25.3 million deaths to AIDS-related illnesses since the year 2000. Sub-Saharan Africa carries the largest disease burden with 66% of new HIV infections occurring in this region (CDC, 2016b). Other areas significantly affected by this worldwide epidemic are Asia and the Pacific, Latin America and the Caribbean, and Eastern Europe.

***HIV in the United States.*** HIV first appeared in the US in the 1980s, predominately affecting young, white, middle-class men who have sex with men (MSM) from larger metropolitan areas on the east and west coasts (Moore, 2011; Hall et al., 2008; El-Sadr, Mayer, & Hodder, 2010). Today, there is far greater diversity with regard to HIV epidemiology. According to the CDC (2016c), over 1.2 million people currently are living with HIV in the US. The

southern region of the US has the largest number of people living with HIV, but the Northeast has the highest rate of HIV per capita (CDC, 2016b). One in eight people is thought to be unaware they are infected (CDC, 2016c). The CDC estimates there were 44,073 new cases diagnosed in 2014 (CDC, 2016c). This is a 19% drop in new HIV diagnoses from their 2005 report. Racially, African Americans (44%) and Hispanics/Latinos (23%) shoulder the largest and most disproportionate burden of HIV diagnoses (CDC, 2016c). In 2014, the distribution by age of persons diagnosed with HIV were 13-19 (4%), 20-29 (36%), 30-39 (24%), 40-49 (19%), 50-59 (12%), and 60+ (4%) (CDC, 2016c). Young people aged 13-24 are most likely to be unaware they are living with HIV (44%) (CDC, 2016c). Gender statistics from 2006 show the ratio of males to females living with HIV in the US to be three to one (Moore, 2011). New HIV diagnoses in the US in 2014 show the largest transmission category to be MSM sexual contact (67%), followed by heterosexual contact (24%), injection drug use (6%), and MSM contact plus injection drug use (3%) (CDC, 2016b).

***HIV in the MSM population.*** As stated above, the population most affected by HIV in the US is MSM. Estimates of new HIV infections in 2014 suggest MSM accounted for 83% of HIV diagnoses among males and 67% of all diagnoses (CDC, 2016b). This group is of special concern because it stands alone as the only group to have increased in the number of new diagnoses between 2007 and 2010 (Wejnert et al., 2013). This trend is not restricted to the US. High-income areas of Australia, France, and the United Kingdom also show an expansion of the epidemic in the MSM population (Beyrer et al., 2012). A meta-analysis conducted by Breyer and colleagues (2012) showed that receptive anal intercourse plays a central role in the transmission of HIV in the MSM population. Examination of molecular epidemiological data demonstrated

pronounced clustering of HIV among MSM networks and higher rates of persons living with multiple-variant HIV infection than in the heterosexual population (Beyrer et al., 2012).

Halkitis, Zade, Shrem, and Marmor (2004) suggest this incidence rate may be related to a trend of more MSM engaging in risky sexual practices. The decision to engage in risky sexual practices may be influenced by beliefs that medical advances such as advanced medications, pre-exposure prophylaxis (PrEP) and post-exposure prophylaxis (PEP) have mitigated the threat of HIV (Halkitis et al., 2004; Davis, Hart, Bolding, Sherr, & Elford, 2006). These beliefs may play an important role in the choice of a sexual partner. Strategies have emerged in the MSM community to try to lessen the chances of HIV transmission while engaging in risky sexual behaviors (e.g. unprotected sex, illicit drug use, etc.), including serosorting, choosing seroconcordant partners, and strategic positioning, where the person without HIV chooses the insertive sexual role when having intercourse with a serodiscordant partner (Hart & Elford, 2010). The foreknowledge and use of serostatus, as well as serodisclosure, have become important factors of sex partner selection in the MSM community.

### **Online Dating**

**Types of Online Venues.** Today, MSM have a myriad of ways to look for potential sexual partners. Beyond the traditional venues for looking for sex (cruising) in bars, clubs, parties, social gatherings, bathhouses, parks, and adult video stores, men now have the convenience of anonymously cruising for sex electronically. MSM are not only looking for casual or repeat hookups, but current research also shows that more frequently MSM are finding their first sexual partner online (Franssens, Hospers, & Kok, 2010). There are three general types of electronic cruising: internet-based classified advertisements, membership-based internet hookup sites, and geospatial social networking mobile apps.

***Internet-based Classified Ads.*** Internet-based classified advertisement (ad) systems such as Craigslist.com or Backpage.com allow users to place, read, and respond to newspaper-like personal ads placed by other users. These services are often free of charge for basic ad services. Unlike traditional print ads, users are not constrained to a small word count, and many include sexually explicit photos and/or media. There are very few, if any, rules for the content of the ads on these services, and the few rules that do exist are loosely regulated by users flagging content as objectionable (Clements-Nolle, Buttar, Dermid-Gray, Peterson, & Esp, 2015). Clements-Nolle and colleagues (2015) found that, among the MSM using Craigslist, few disclosed their HIV status or discussed safe sex in their ads, supporting previous research (see Rosenbaum et al., 2013 and Grov et al., 2010). More research by Grov (2012) found that MSM using Craigslist.com reported the lowest rates of condom usage during anal sex when compared to MSM looking for sex in bars, clubs, or bathhouses.

***Membership-based Internet Hookup Sites.*** Membership-based internet hookup sites such as manhunt.net, adam4adam.com, and men4sexnow.com require registration and are profile content driven. While basic ad and messaging services are free to use, paid VIP accounts are available to remove advertisements, remove messaging limitations, and increase the number of profile media that users can post in their profiles and view in the profiles of others. Personal profiles for members allow users to advertise their sexual tastes (e.g., preferences for safe sex, sexual activities, roles, or fetishes) and report personal or physical characteristics. Sites differ on how they choose to handle unanswered profile items. In the set list of demographic fields typically offered by sites, most include an item for reporting serostatus where users can report “Ask me,” “Don’t know,” “Negative,” “Undetectable,” “Pre-exposure prophylaxis (PrEP),” “Positive,” or “Unanswered.” On sites like Manhunt.com, serostatus is always listed somewhere

in the profile text even if left unanswered, drawing attention to and raising serostatus awareness. However, on other sites (e.g., Adam4Adam), the serostatus field is optional. Should the user leave it unanswered, the profile text will not mention serostatus at all. Thus, these types of sites are comparable to those offered by the internet-based classified ad services. As with internet-based classified ad services, research shows that condom usage is rarely discussed in hookup ads (Whitfield, Kattari, Walls, & Al-Tayyib, 2017; Cheeseman, Goodlin-Fahncke, & Tewksberry, 2012). Klein and Tilly (2012) found an inverse relationship between the perception of HIV-risk and condom usage among men who reported using these hookup sites; as perceived risk among this population increased, condom usage decreased. In the same study of men using these sites, overall condom usage was found to be low.

***Geospatial Social Networking Apps.*** The proliferation of the smartphone has led to a third class of electronic cruising options based on the combination of internet access and geospatial positioning. Known as geospatial social networking apps (GSNA), Grindr, Jack'd, Scruff, Hornet, and many others offer their users access to potential sex partners in the convenience of a smartphone app. They offer the anonymity and ease-of-access of the internet based hookup sites with the added benefit of knowing the physical proximity of potential sex partners. The most widely used service is Grindr which boasts a three-year membership total of approximately four million users in over 196 countries with over 2 million of those users active each day (PR Newswire, 2012; Grindr, 2015). While Grindr is the largest service, there are apps to serve numerous other specialty fetish or niche communities. For example, Recon is an app for fetishists while Growler and Scruff serve the bear community (Whitfield et al., 2017). A meta-analysis by Grov (2014) found that, across multiple studies ranging from the late 1990's to 2013, anywhere from 45% to 70% of men studied reported using a GSNA to look for sex. Research

comparing MSM who use GSNA and those meeting people in other ways (internet hookup sites, clubs, or bars) found that GSNA users were more likely to use condoms (Rice et al., 2012). However, more recent research shows discrepancies in the frequency of unprotected anal sex among GSNA users with percentages ranging from as much as 70% (Landovitz et al., 2013) to as little as 28% (Phillips et al., 2014). Much like the internet hookup sites, these apps differ on their requirements for users reporting their serostatus. For instance, on Grindr and Scruff, if a user does not report their status, then serostatus is not mentioned in the text of their profile. Rules for profile content are a little more rigid for GSNA than for internet sites due to requirements placed on developers by Apple and Google (Rice et al., 2012).

**HIV Disclosure in Online Venues.** Noor, Rampalli, and Rosser (2014) identified a relationship between meeting venue and serodisclosure, finding that accurate serodisclosure rates differ between online and offline meeting venues. This study also corroborated earlier findings that showed there are high levels of inaccuracy in serostatus reporting and disclosure in online environments (see Ross, Simon Rosser, Coleman, & Mazin, 2006). Davis and colleagues (2006) suggested the online venue offers an opportunity for people to filter their potential sex partners anonymously by serosorting, the practice of choosing sex partners who self-report a particular serostatus. However, this potential benefit may be complicated by a potential partner's online profile correctly indicating their serostatus. While internet-based communication affords users the ability to lessen the humiliation often accompanying rejection due to serostatus disclosure, it also allows for deception and/or miscommunication of serostatus between users.

### **Sexual Risk Taking**

**Risky Sexual Behaviors.** In relation to HIV transmission, the CDC (2016d) cites the following sexual behaviors as risky for MSM: anal sex, oral sex, and behaviors involving illicit

drug use. The CDC also considers sexual touching and deep kissing risky behavior, albeit much less risky than other behaviors.

***Anal Sex.*** Anal sex is currently thought to be the riskiest type of sex where HIV is concerned. Both insertive and receptive partners are exposed to the possibility of contracting or transmitting HIV but for different reasons dictated by sexual role. Receptive partners (bottoms) carry the largest risk for either contracting or transmitting HIV. There is a reported 1 in 72 chance that a person can acquire HIV during any one act of receptive anal sex. That chance makes it 13 times riskier than being the insertive partner (CDC, 2016d). However, the risk is still significant for insertive partners as they have a 1 in 909 chance of becoming infected (CDC, 2016d). The risk is even greater for persons who are already HIV-positive, as they are at risk for contracting a second strain of the virus or superinfection (Redd, Quinn, & Tobian, 2013; CDC, 2016d).

***Oral sex (fellatio and anilingus).*** While the CDC describes the risk level for HIV transmission during fellatio as extremely low, they warn that the risk is difficult to assess because MSM who engage in fellatio often also engage in anal sex. Further, they caution that oral sex certainly can be a mode of transmission for other sexually transmitted infections (STI) and that STIs can lead to sores on the sexual organs that can facilitate the transmission of HIV in subsequent sexual encounters. Anal sex following oral sex is also known to be a mode of transmission for STIs like hepatitis A and B as well as parasitic and bacterial infections such as Giardia, Shigella, Salmonella, Campylobacter, and E. coli.

***Illicit drug use.*** There has recently been a rise and proliferation online and offline of opportunities for sex under the influence of psychoactive substances such as methamphetamine, mephedrone, gamma-hydroxybutyrate (GHB), and methylenedioxymethamphetamine (MDMA, Ecstasy) (Bourne, Reid, Hickson, Torres-Rueda, & Weatherburn, 2015; Sterk, Klein, & Elifson,

2008; Drumright, Patterson, & Strathdee, 2006). These drugs can be used alone or in combination with other substances such as ketamine, benzodiazepines, and erectile dysfunction agents (Stuart, Nwokolo, McOwan, Bracchi, & Boffito, 2015). Illicit substances are being used more frequently in a sexualized context for their multiple effects such as increasing libido, sexual stamina, and disinhibition (Drumright, Patterson, & Strathdee, 2006; Myers, 2004). Altered mental states brought about by illicit substances may include impaired judgment, sedation, loss of muscle control, and memory loss. These direct effects can impede a person's ability to negotiate condom use (Drumwright et al., 2006). Reduced sensation of pain and enhanced sexual functioning can result in engagement in more physically traumatic sexual behaviors such as "fisting" or prolonged anal intercourse. Vasodilation is another side effect of many substances (e.g., Viagra, Alkyl nitrite [poppers]), which increases the blood supply to the penis and rectal regions, thus enabling an increased risk of exposure to blood during sex (Hall, Shoptaw, & Reback, 2015; Crosby and Diclemente, 2004). Still however, the most direct danger for transmission of HIV is intravenous drug use which puts a person at high risk for transmitting or acquiring HIV through the sharing of syringes, preparation containers, and water that are likely to have come into contact with blood (CDC, 2017).



## CHAPTER 3: Methods

### Sample Size

The sample size for this study was based on the results of a power analysis using GPower software using a linear multiple regression technique with a fixed-model and single regression coefficient. Estimating a small effect size (Cohen's  $f^2 = .02$ ;  $\alpha = .05$ ;  $1 - \beta = .80$ ) based on current literature for predictors of engagement and safer sex practices, GPower suggested at least 395 participants were needed. The originally estimated sample size was padded by 10% to allow for data cleaning bringing the total suggested sample size to 435. The total number of participants who enrolled in this study exceeded this estimate.

### Participants

Participants included a convenience sample ( $N=469$ ) of men who have sex with men (MSM) who were recruited through Amazon Mechanical Turk (mTurk) (see Procedures for more information about mTurk). Eligible participants were MSM over the age of 18 who live in the US. Females were excluded from the study as were men who were under the age of 18, did not report having sex with men, or lived outside the US. It is important to note that sample populations from mTurk are people who perform online tasks from their home personal computers for compensation. The demographic characteristics of mTurk workers in the US have been found to be more diverse and representative than typical student or convenience samples (Berinsky, Huber & Lenz, 2011).

### Measures

This study was part of a larger study designed to examine the sexual practices of MSM. The measures described below were used in this study. See the Appendix for the complete survey.

**Demographic Questionnaire.** A 10-item demographic questionnaire was administered to collect the following data: age, race, ethnicity, sexual orientation, HIV and relationship status, region, rural/urban/suburban living area, income level, and educational level.

**Behavioral Intentions Questionnaire.** A four-item behavioral intentions questionnaire was used to assess sexual behavioral intentions. Items one and two asked whether the participant would attempt to pursue a sexual encounter with the person based on their online profile and, if so, whether or not they would insist on condom usage. The third and fourth items asked the participant about their willingness to engage in sex with an offline potential partner and, if so, whether or not they would insist on condom usage.

### **Pilot Study**

A pilot study was administered via Qualtrics survey software to a convenient sample of 10 people to assess usability and to provide time completion estimates. Minor modifications were made to increase usability based on the feedback provided by pilot participants. The mean completion time was estimated at 8 minutes and 35 seconds.

### **Procedure**

The University of South Florida's Institutional Review Board reviewed this study and determined it to be exempt. The survey was administered via Qualtrics survey software to participants recruited from mTurk, an online community where businesses or researchers can solicit participants for their Human Intelligence Tasks (HIT) from a pool of workers or participants. In the case of the present study, the HIT was the survey described above. First, participants were asked to complete a demographic questionnaire. Participants were then randomly assigned to one of three conditions where the serostatus of the potential partner was manipulated: HIV-positive, HIV-negative, HIV status undisclosed. Within each condition, each

participant was presented with an online profile of a physically ideal potential sex partner and a narrative describing an offline encounter with a physically ideal potential sex partner. In each scenario, the potential partner either discloses their serostatus as positive or negative or does not mention their serostatus. The serostatus of the potential partner was kept the same in both the online profile and offline scenario.

A link to the survey was embedded in an mTurk HIT and advertised to eligible participants. An electronic informed consent form was presented to participants before entering the survey. This form presented basic study information and required participants to confirm eligibility criteria before taking part in the study. No identifying information was collected. Upon completion of the survey, participants were compensated \$1.00 by payment through mTurk. Data were transferred from Qualtrics into Excel and then SPSS for data analysis.

### **Data Analysis**

Data was analyzed using descriptive statistics and the Chi-Square Test for Independence.

## CHAPTER 4: Results

### Participant Demographics

Participants ranged in age from 18 to 64 with the majority of participants falling in the 25-34 year old age range with a mean age of 31.66 years ( $SD = 9.02$ ). The majority of participants were White (71.95%) and Non-Hispanic (88.24%). Most participants lived in Suburban (45.35%) or Urban (40.27%) communities from across all regions of the US. The North East (21.72%), Mid-West (22.17%), and South East (31.22%) were represented most heavily. The majority of participants reported having either completed a 4-year degree (42.53%) or some college (36.65%). Incomes ranged from under \$20,000 to over \$100,000, with most incomes falling between \$20,000 and \$60,000 (55.43%). The largest portion of the sample reported being homosexual (50%) or bisexual (45.25%) and most reported being HIV-negative (92.31%). Only 11.54% of the participants were married, while 34.39% identified as partnered and 52.71% reported being single. Please see Table 1 for more information about participant demographics.

### Online Behavioral Intentions

**Intention to engage in sex.** A Pearson chi-square test of independence was performed to examine the effect of a potential partner's serostatus (potential partner is HIV-positive [S+], potential partner is HIV-negative [S-], or potential partner's serostatus undisclosed [S<sub>U</sub>]) on sexual engagement in an online meeting environment. There was a significant difference between serostatus conditions,  $X^2(2, N = 433) = 49.95, p < .001$  with a moderate effect size ( $\phi = .34$ ). See Table 2.

In the undisclosed and HIV-negative serostatus conditions for the online environment, significantly fewer participants said they would not attempt to engage in a sexual encounter than

what the chi-square analysis expected. However, more participants said they would *not* attempt to engage in a sexual encounter in the HIV-positive condition while fewer participants reported a willingness to engage in a sexual encounter when the serostatus of the potential partner was positive. For the undisclosed and HIV-negative serostatus conditions, there were no significant differences among participants who reported a willingness to engage in a sexual encounter. See Table 3.

**Intentions to Use Condoms.** A Pearson chi-square test of independence was performed to examine the impact of a potential partner's serostatus on intentions to use condoms in an online meeting environment. No significant differences were found,  $X^2(4, N = 254) = 6.192, p = .185$ , and the effect size was small (*Cramer's V* = .11,  $\phi = .16$ ). Across conditions, 77.17% of participants reported they intended to use condoms, 7.08% reported they would not use condoms, and 15.75% responded they might use condoms.

Although one of the cells in the chi-square (11.1%) returned an expected count less than five for the S+ group who said they would not insist on condom usage, Yates, Moore, and McCabe (1999, p. 734) indicate that when no more than 20% of the expected counts are less than five, and all individual expected counts are one or greater, chi-square results may be treated as valid.

### **Offline Behavioral Intentions**

**Intention to engage in sex.** A Pearson chi-square test of independence was performed to examine the impact of potential partner's serostatus on sexual engagement in an offline meeting environment. The relationship between these variables was significant,  $X^2(2, N = 432) = 167.13, p < .001$  with a strong effect size ( $\phi = .62$ ). See Table 4.

For the offline environment, more people than expected reported an intent to engage in sex when the serostatus was undisclosed or HIV-negative, while fewer people than expected reported an unwillingness to engage in sex when the serostatus was undisclosed or HIV-negative. However, the opposite was true for the HIV-positive serostatus condition. In this condition, fewer people than expected reported a willingness to engage in sex, whereas more people reported an unwillingness to engage in sex. See Table 5.

**Intentions toward Condom Usage.** A Pearson chi-square test of independence was performed to examine the impact of a potential partner's serostatus on intentions to use condoms in an offline meeting environment. There were no significant differences between groups,  $X^2(4, N = 253) = 3.117, p = .538$ . The test indicated a small effect size (*Cramer's V* = .08,  $\phi = .11$ ). Two of the nine cells in the chi-square (22.2%) returned an expected count less than five for the S+ group who said they would not insist on condom usage. While this is close to the Yates, Moore, and McCabe (1999) cutoff of 20%, chi-square results must be treated as suspect. Across conditions, 76.68% of participants reported an intent to use condoms, 5.14% reported they would not use condoms, and 18.18% reported they might use condoms.

**Condom Usage Online vs. Offline.** Across groups, intent to use common was relatively consistent when examining frequency data ( $S_U = 73.97\%$ ,  $S_- = 80.28\%$ ,  $S_+ = 76.00\%$ ). Intent to use condoms did not differ significantly online and offline conditions ( $M_{online} = 77.50\%$ ,  $SD_{online} = 5.12$ ;  $M_{offline} = 74.94\%$ ,  $SD_{offline} = 4.54$ ;  $n = 3, t(4) = 0.65, p = .55$ ).

## CHAPTER 5: Discussion

### The Effect of Serostatus on Willingness to Engage in Sex

Current findings confirm the hypothesis that MSM will be less likely to engage with a potential sexual partner whose serostatus is positive. In this study, serostatus played a significant dissuasive role in willingness to engage in sex for participants in the S<sub>+</sub> condition. This was true in both the online and offline settings. This is consistent with Beckerman's (2005) finding that fear of HIV transmission had a protective effect related to sexual engagement with a person with HIV even when taking into account multiple variables (e.g., length of relationship, timing of serostatus disclosure, ethnicity, sexuality, serostatus, and experience with an HIV-related illness).

Findings did not support the hypothesis that people would be less willing to engage with a person who does not disclose their serostatus. Results showed very little difference in willingness to engage in sex when presented with a potential partner who reported being HIV-negative and one who did not disclose serostatus. This may indicate that MSM are not effectively discriminating between people who do not disclose their serostatus and people who are serostatus negative. Moreover, in both online and offline settings, few MSM said they would *not* be willing to engage in sex with a potential partner who did not disclose their serostatus. In the offline condition, MSM in the S<sub>-</sub> and S<sub>U</sub> groups were significantly more likely to report a willingness to engage in sex than in the S<sub>+</sub> condition. Although not statistically significant, there was a trend for MSM in the S<sub>-</sub> and S<sub>U</sub> groups in the online condition to be more likely to report a willingness to engage in sex. These findings may reflect Klein and Tilley's (2012) suggestion that MSM's perception of HIV risk may be a mediator for the process of seroguessing. In their study, men who reported being actively engaged in risky sex had unrealistically low assessments of their chances of becoming HIV infected.

### **The Effect of Venue on Willingness to Engage in Sex**

Current findings confirmed the hypothesis that MSM will be more likely to engage with a sexual partner with HIV in online versus offline settings. Additionally, the converse appears to be true for the HIV-negative or undisclosed serostatus groups. Looking at effect size alone might lead researchers to believe that serostatus has less of an effect online than offline. However, a closer analysis of the data indicates it may not be that simple. While the effect size of serostatus appears to almost double between online and offline venues, the effect size may be affected by the number of people willing to have sex in the S<sub>+</sub> group. The number of MSM willing to have sex in the S<sub>+</sub> group appear to be much lower in offline environments and may reflect a more conservative attitude about sex when meeting someone with HIV in the real world as opposed to meeting in an online environment. However, the likelihood of engaging in sex was much stronger in offline settings for those in the S<sub>-</sub> and S<sub>U</sub> groups. The fact that the majority of the difference in engagement rates lie in the S<sub>+</sub> group and that, within each condition, engagement rates in the S<sub>-</sub> and S<sub>U</sub> groups remain similar may indicate that venue plays less of a role in sexual behavioral intentions when a potential partner either does not disclose their serostatus or reports being serostatus negative. Overall, serostatus seems to matter most in either venue – online or offline - when a potential partner is HIV-positive and less so when they are HIV-negative or do not disclose their status.

Grov and colleagues (2013) suggest that although venue type (online or offline) may not be a good predictor of unprotected anal intercourse, it does seem to predict other risk mediating behaviors like serodisclosure. Online venues offer users a level of privacy and relative anonymity that can promote disclosure behaviors. Further, their finding that most men in the US



are finding sexual partners online identifies the online arena as a potential point of intervention when promoting serostatus awareness, HIV-prevention, HIV-stigma reduction, and HIV education. Meanwhile, although fewer people appear to be looking for sex partners offline, the rates of willingness to engage in sex without serostatus disclosure illustrates a substantial need for intervention efforts to target both online and offline venues.

### **The Effect of Serostatus on Intentions to Use Condoms**

Frequency data confirmed the hypothesis that MSM would be more likely to use condoms regardless of venue. Across conditions, the overwhelming majority of participants reported an intent to use condoms, which is promising and is consistent with Grov and colleagues' (2013) finding that venue does not play a large role in men choosing to have unprotected anal intercourse. However, of note, intentions to use condoms were highest for those presented with an HIV-negative partner and lowest for the persons where serostatus was not disclosed, which is counterintuitive. This trend was noticed as early as 1999 in a study by Ekstrand, Stall, Paul, Osmond, & Coates. In their study, almost 50% of men who reported having unprotected anal intercourse also reported their partners were serodiscordant or of unknown serostatus. Factors correlated with this risky behavior were an increased numbers of male sex partners, use of inhalants, meeting for sex in bathhouses or public places, a perception of lack of control over risky sexual behavior, and negative emotional postcoital reactions. In a more recent study, Osmond, Pollack, Paul, & Catania (2007) revealed similar trends in this type of risky behavior. They found that serosorting was being employed more commonly than condom use in young MSM. The researchers theorized that MSM may justify the seroguessing/serosorting strategy using the logic that they are having sex with a seroconcordant partner. It is unclear from these studies if serosorting is an effective strategy in HIV prevention or harm reduction.

However, serosorting can only be effective when serostatus disclosure is part of the conversation and when accurate information is shared. Unfortunately, it is estimated that one in eight people with HIV do not know they have it (CDC, 2016b).

### **Limitations**

There were several limitations to this study. First, participants were allowed to opt out of answering sensitive questions, resulting in missing data, which may have affected findings. For example, a disproportionate few participants in the S+ condition reported a willingness to engage in sex. Among those reporting a willingness to engage in sex, few participants answered a question about condom use intentions. Low response rate on these items may have affected the reliability and, consequently, the validity of interpretation.

A related limitation was the entanglement of items assessing intentions to use condoms and items assessing willingness to engage in sex. The survey design precluded collecting data from participants who reported not being willing to engage in sex. That is, participants were not presented questions about condom use if they did not report a willingness to engage in sex. Further, items focused exclusively on condom use and did not assess other methods of protective behavior (e.g., pre-exposure prophylaxis, post-exposure prophylaxis).

Finally, this study relied on self-report. There was no ability to vet the accuracy of respondents to include the accuracy of basic demographic data. For example, while this study was targeted to MSM, there was no way to verify the accuracy of gender and sexual orientation.

### **Conclusion**

Current findings confirmed MSM are less likely to engage with a potential sexual partner whose serostatus is positive suggesting that serostatus disclosure may have a protective effect when the person disclosing is HIV-positive. This was not the case when the potential partner was

HIV-negative or did not disclose their serostatus. The processes of seroguessing and serosorting when a partner does not disclose their status may result in the incorrect assumptions that a partner is negative and that, consequently, there is a decreased perception of HIV risk. This may explain some of the similarities in the rates of willingness to engage in sex between those in the HIV-undisclosed group and the HIV-negative group.

Data from this study also suggests MSM will be more likely to engage with a sexual partner with HIV when they meet them online although, in both online and offline settings, people were significantly less likely than expected to be willing to engage in sex with a person with HIV. The reverse was true when participants were presented with someone who disclosed they were HIV-negative or did not disclose at all. Offline, participants were much more likely to be willing to engage in sex with a person of undisclosed or negative serostatus. However, the majority of MSM in this study reported an intention to use condoms, and there was no difference in intentions to use condom in the online and offline settings.

**Future Directions.** Replication studies with different target populations may be useful to determine whether current findings generalize to other groups (e.g., heterosexuals). Additional research is needed on seroadaptive strategies to include serosorting and seroguessing. Further, there is a need for additional research on sexual behavior and HIV risk in online versus offline settings given the proliferation of apps for MSM seeking sexual partners. Intervention research in this area will be particularly helpful. This type of research will build upon existing bodies of literature in the areas of HIV stigma and disclosure. In addition to research, active campaigns promoting serostatus awareness and HIV-testing, delivered online and offline, are needed to promote more open, candid social discourse between potential sexual partners on topics related to sexual health to include seroadaptive behaviors such as serosorting, safer sex practices, and

pre and post-exposure prophylaxis. Open conversations may reduce stigma which is a known barrier to HIV testing, treatment, and disclosure.

## References

- Beckerman, N. L. (2005). *Couples of mixed HIV status: Clinical issues and interventions*. Psychology Press.
- Berinsky, A. J., Huber, G. A., & Lenz, G. S. (2011). Using Mechanical Turk as a subject recruitment tool for experimental research. Submitted for review.
- Beyrer, C., Baral, S. D., van Griensven, F., Goodreau, S. M., Chariyalertsak, S., Wirtz, A. L., & Brookmeyer, R. (2012). Global epidemiology of HIV infection in men who have sex with men. *The Lancet*, 380(9839), 367-377. doi:10.1016/S0140-6736(12)60821-6
- Bourne, A., Reid, D., Hickson, F., Torres-Rueda, S., & Weatherburn, P. (2015). Illicit drug use in sexual settings ('chemsex') and HIV/STI transmission risk behaviour among gay men in South London: findings from a qualitative study. *Sexually Transmitted Infections*, 91(8), 564-568. doi:10.1136/sextrans-2015-052052
- Centers for Disease Control and Prevention. (2016a, July 21). About HIV/AIDS. Retrieved August 28, 2016, from Centers for Disease Control and Prevention: <http://www.cdc.gov/hiv/basics/whatishiv.html>
- Centers for Disease Control and Prevention. (2016b, July 12). Basic statistics. Retrieved August 28, 2016, from Centers for Disease Control and Prevention: <http://www.cdc.gov/hiv/basics/statistics.html>
- Centers for Disease Control and Prevention. (2016c, July 11). HIV in the United States: At a glance. Retrieved August 28, 2016, from Centers for Disease Control and Prevention: <http://www.cdc.gov/hiv/statistics/overview/ataglance.html>
- Centers for Disease Control and Prevention. (2016d). HIV risk. Retrieved January 12, 2017, from <https://wwwn.cdc.gov/hivrisk/>

Centers for Disease Control and Prevention. (2017, February 17). HIV and injection drug use.

Retrieved from <https://www.cdc.gov/hiv/risk/idu.html>

Cheeseman, K., Goodlin-Fahncke, W., & Tewksbury, R. (2012). “Looking for a married hookup”: An examination of personal ads posted by men seeking sex with married men. *The Journal of Men's Studies*, 20(2), 144-157. doi:10.3149/jms.2002.144

Clements-Nolle, K., Buttar, A., Dermid-Gray, L., Peterson, T., & Esp, A. (2015). Use of Craigslist.org to hook up: Age differences in sex requests, HIV disclosure and negotiated safety among men-seeking-men. *Nevada Journal of Public Health*, 11(1), 9.

Drumright, L. N., Patterson, T. L., & Strathdee, S. A. (2006). Club drugs as causal risk factors for HIV acquisition among men who have sex with men: a review. *Substance Use & Misuse*, 41(10-12), 1551-1601. doi:10.1080/10826080600847894

Ekstrand, M. L., Stall, R. D., Paul, J. P., Osmond, D. H., & Coates, T. J. (1999). Gay men report high rates of unprotected anal sex with partners of unknown or discordant HIV status. *Aids*, 13(12), 1525-1533. doi:10.1097/00002030-199908200-00013

El-Sadr, W. M., Mayer, K. H., & Hodder, S. L. (2010). AIDS in America—forgotten but not gone. *The New England Journal of Medicine*, 362(11), 967. doi:10.1056/NEJMp1000069

Franssens, D., Hospers, H. J., & Kok, G. (2010). First same-sex partner and the internet. *AIDS and Behavior*, 14(6), 1384-1386. doi:10.1007/s10461-010-9685-0

Grace, D., Chown, S. A., Jollimore, J., Parry, R., Kwag, M., Steinberg, M., ... & Gilbert, M. (2014). HIV-negative gay men's accounts of using context-dependent sero-adaptive strategies. *Culture, Health & Sexuality*, 16(3), 316-330.

doi:10.1080/13691058.2014.883644

- Grindr. (2015, June). Press & Media. Retrieved March 19, 2017, from <http://www.grindr.com/press/>
- Grov, C. (2012). HIV risk and substance use in men who have sex with men surveyed in bathhouses, bars/clubs, and on Craigslist.org: Venue of recruitment matters. *AIDS and Behavior, 16*, 807-817. doi:10.1007/s10461-011-9999-6
- Grov, C., Golub, S. A., & Parsons, J. T. (2010). HIV status differences in venues where highly sexually active gay and bisexual men meet sex partners: Results from a pilot study. *AIDS Education and Prevention, 22*(6), 496-508. doi:10.1521/aeap.2010.22.6.496
- Grov, C., Hirshfield, S., Remien, R. H., Humberstone, M., & Chiasson, M. A. (2013). Exploring the venue's role in risky sexual behavior among gay and bisexual men: an event-level analysis from a national online survey in the US. *Archives of Sexual Behavior, 42*(2), 291-302. doi:10.1007/s10508-011-9854-x
- Grov, C., Breslow, A. S., Newcomb, M. G., Rosenberger, J.G., & Bauermeister, J. A. (2014). Gay and bisexual men's use of the Internet: Research from the 1990s through 2013. *Journal of Sex Research, 51*, 390-409. doi:10.1080/00224499.2013.871626
- Hall, T. M., Shoptaw, S., & Reback, C. J. (2015). Sometimes poppers are not poppers: huffing as an emergent health concern among MSM substance users. *Journal of Gay & Lesbian Mental Health, 19*(1), 118-121. doi:10.1080/19359705.2014.973180
- Hall, H. I., Song, R., Rhodes, P., Prejean, J., An, Q., Lee, L. M., & Janssen, R. S. (2008). Estimation of HIV incidence in the United States. *Jama, 300*(5), 520-529. doi:10.1001/jama.300.5.520

- Horvath, K. J., Bowen, A. M., & Williams, M. L. (2006). Virtual and physical venues as contexts for HIV risk among rural men who have sex with men. *Health Psychology, 25*(2), 237. doi:10.1037/0278-6133.25.2.237
- Klein, H., & Tilley, D. L. (2012). Perceptions of HIV risk among internet-using, HIV-negative barebacking men. *American Journal of Men's Health, 6*(4), 280-293. doi:10.1177/1557988311434825
- Landovitz, R. J., Tseng, C. H., Weissman, M., Haymer, M., Mendenhall, B., Rogers, K., ... & Shoptaw, S. (2013). Epidemiology, sexual risk behavior, and HIV prevention practices of men who have sex with men using GRINDR in Los Angeles, California. *Journal of Urban Health, 90*(4), 729-739. doi:10.1007/s11524-012-9766-7
- Moore, R. D. (2011). Epidemiology of HIV infection in the United States: Implications for Linkage to Care. *Clinical Infectious Diseases, 52*(suppl 2), S208-S213. doi:10.1093/cid/ciq044
- Mustanski, B. S. (2007). Are sexual partners met online associated with HIV/STI risk behaviours? Retrospective and daily diary data in conflict. *AIDS Care, 19*(6), 822-827. doi:10.1080/09540120701237244
- Myers, T., Aguinaldo, J. P., Dakers, D., Fischer, B., Bullock, S., Millson, P., & Calzavara, L. (2004). How drug using men who have sex with men account for substance use during sexual behaviours: Questioning assumptions of HIV prevention and research. *Addiction Research & Theory, 12*(3), 213-229. doi:10.1080/16066350310001640161
- Noor, S. W., Rampalli, K., & Rosser, B. S. (2014). Factors influencing HIV serodisclosure among men who have sex with men in the US: An examination of online versus offline



- meeting environments and risk behaviors. *AIDS and Behavior*, 18(9), 1638-1650.  
doi:10.1007/s10461-014-0774-3
- Osmond, D. H., Pollack, L. M., Paul, J. P., & Catania, J. A. (2007). Changes in prevalence of HIV infection and sexual risk behavior in men who have sex with men in San Francisco: 1997–2002. *American Journal of Public Health*, 97(9), 1677-1683.  
doi:10.2105/AJPH.2005.062851
- Phillips, G., Magnus, M., Kuo, I., Rawls, A., Peterson, J., Jia, Y., ... & Greenberg, A. E. (2014). Use of geosocial networking (GSN) mobile phone applications to find men for sex by men who have sex with men (MSM) in Washington, DC. *AIDS and Behavior*, 18(9), 1630-1637. doi:10.1007/s10461-014-0760-9
- PR Newswire. (2012). *Happy birthday, Grindr! 3 years: 3.5 Million users. 192 countries, and growing*. Retrieved from <http://www.prnewswire.com/news-releases/happy-birthday-grindr-3-years-35-million-users-192-countries-andgrowing-144262325.html>
- Redd, A. D., Quinn, T. C., & Tobian, A. A. (2013). Frequency and implications of HIV superinfection. *The Lancet Infectious Diseases*, 13(7), 622-628. doi:10.1016/S1473-3099(13)70066-5
- Rice, E., Holloway, I., Winetrobe, H., Rhoades, H., Barman-Adhikari, A., Gibbs, J., . . . Dunlap, S. (2012). Sex risk among young men who have sex with men who use Grindr, a smartphone geosocial networking application. *Journal of AIDS & Clinical Research*, 3(Suppl. 4), 005. doi:10.4172/2155-6113.S4-005
- Sterk, C. E., Klein, H., & Elifson, K. W. (2008). Young adult ecstasy users and multiple sexual partners: understanding the factors underlying this HIV risk practice. *Journal of Psychoactive Drugs*, 40(3), 237-244. doi:10.1080/02791072.2008.10400638

- Stuart, D., Nwokolo, N., McOwan, A., Bracchi, M., & Boffito, M. (2015, October). Chemsex: data on recreational drug use and sexual behaviour in men who have sex with men (MSM) from a busy sexual health clinic in London, UK. In *Conference Report, 15th European AIDS Conference (EACS 2015)* (pp. 21-24).
- Wejnert, C., Le, B., Rose, C. E., Oster A. M., Smith, A. J., & Zhu, J. (2013). HIV infection and awareness among men who have sex with men—20 cities, United States, 2008 and 2011. *PloS One*, 8(10), e76878. doi:10.1371/journal.pone.0076878
- Whitfield, D. L., Kattari, S. K., Walls, N. E., & Al-Tayyib, A. (2017). Grindr, Scruff, and on the Hunt: Predictors of condomless anal sex, internet use, and mobile application use among men who have sex with men. *American Journal of Men's Health*. doi:10.1177/1557988316687843
- Yates, M. McCabe (1999). *The practice of statistics*. WH Freeman: New York.

Table 1

*Participant Demographics*

<u>Demographic Category</u>	<u>Observed Value</u>	<u>Frequency</u>	<u>Percent</u>	<u>Valid Percent</u>
Region	North East	96	21.7	22.1
	North West	30	6.8	6.9
	South East	138	31.2	31.7
	South West	73	16.5	16.8
	Mid-West	98	22.2	22.5
Community Type	Urban	178	40.3	40.8
	Suburban	200	45.2	45.9
	Rural	58	13.1	13.3
Race	Asian	22	5	5
	Black or African American	45	10.2	10.3
	Latino	26	5.9	5.9
	Multi-racial	23	5.2	5.3
	White	318	71.9	72.6
	Other	4	0.9	0.9
Ethnicity	Hispanic	44	10	10.1
	Non-Hispanic	390	88.2	89.9
Sexuality	Bisexual	200	45.2	45.8
	Heterosexual	16	3.6	3.7
	Homosexual	221	50	50.6
HIV Status	Positive	5	1.1	1.1
	Negative	408	92.3	93.4
	Unknown	24	5.4	5.5
Marital Status	Married	51	11.5	11.7
	Partnered	152	34.4	34.9
	Single	233	52.7	53.4
Age Category	18 - 24	101	22.9	23
	25 - 34	213	48.2	48.4
	35 - 44	78	17.6	17.7
	45 - 54	41	9.3	9.3
	55 - 64	7	1.6	1.6

*Participant Demographics Continued*

<u>Demographic Category</u>	<u>Observed Value</u>	<u>Frequency</u>	<u>Percent</u>	<u>Valid Percent</u>
Educational Level	High School Diploma or Equivalent	53	12	12
	Some College	162	36.7	36.8
	4-year degree	188	42.5	42.7
	Master's degree or equivalent (e.g., MA, MS, JD)	32	7.2	7.3
	Doctoral or medical degree (e.g., Ph.D., MD)	5	1.1	1.1
Income Level	< \$20,000	90	20.4	20.8
	\$20,001 - \$40,000	141	31.9	32.6
	\$40,001 - \$60,000	104	23.5	24
	\$60,001- \$80,000	56	12.7	12.9
	\$80,001- \$100,000	20	4.5	4.6
	\$100,001+	22	5.0	5.1

Table 2

*Chi-Square of Online Behavioral Intentions and Serostatus*

	Value	df	Asymp. Sig. (2-sided)	Phi	Sig.
Pearson Chi-Square	49.952 <sup>a</sup>	2	.000	.340	.000
Likelihood Ratio	50.338	2	.000		
Linear-by-Linear Association	37.914	1	.000		
N of Valid Cases	433				

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 61.76.

Table 3

*Intentions to Engage in Sex Online by Serostatus Group*

		<i>Experimental Group</i>			
		<i>Undisclosed Serostatus</i>	<i>HIV-negative Serostatus</i>	<i>HIV-positive Serostatus</i>	
<i>Sex Online</i>	<i>Yes</i>	<i>Count</i>	100	98	48
		<i>Expected Count</i>	82.4	81.2	82.4
		<i>Std. Residual</i>	1.9	1.9	-3.8
	<i>No</i>	<i>Count</i>	45	45	97
		<i>Expected Count</i>	62.6	61.8	62.6
		<i>Std. Residual</i>	-2.2	-2.1	4.3

Table 4

*Chi-Square of Offline Behavioral Intentions and Serostatus*

	<i>Value</i>	<i>df</i>	<i>Asymp. Sig. (2-sided)</i>	<i>Phi</i>	<i>Sig.</i>
<i>Pearson Chi-Square</i>	167.127 <sup>a</sup>	2	.000	.622	.000
<i>Likelihood Ratio</i>	179.511	2	.000		
<i>Linear-by-Linear Association</i>	122.954	1	.000		
<i>N of Valid Cases</i>	432				

*a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 62.23.*

Table 5

*Intentions to Engage in Sex Offline by Serostatus Group*

		<b>Experimental Group</b>			
		Undisclosed Serostatus	HIV-negative Serostatus	HIV-positive Serostatus	
<b>Sex Offline</b>	<b>Yes</b>	Count	112	113	19
		Expected Count	81.3	80.8	81.9
		Std. Residual	3.4	3.6	-7.0
	<b>No</b>	Count	32	30	126
		Expected Count	62.7	62.2	63.1
		Std. Residual	-3.9	-4.1	7.9



## Appendix

## Survey

In which region of the United States do you live?

- Wish not to answer
- North East
- North West
- South East
- South West
- Mid-West

In which type of community do you live?

- Wish not to answer
- Urban
- Suburban
- Rural

What is your race?

- Wish not to answer
- Asian
- Black or African American
- Latino
- Multi-racial
- White
- Other

What is your ethnicity?

- Wish not to answer
- Hispanic
- Non-Hispanic

How do you describe your sexual orientation?

- Wish not to answer
- Bisexual
- Heterosexual
- Homosexual

What is your HIV-status?

- Wish not to answer
- Positive
- Negative
- Unknown

What is your relationship status?

- Wish not to answer
- Married
- Partnered
- Single

Into which age range do you fall?

- Wish not to answer
- 18 - 24
- 25 - 34
- 35 - 44
- 45 - 54
- 55 - 64
- 65 - 74
- 75 - 84
- 85 or older

What is your education level?

- Wish not to answer
- High School Diploma or Equivalent
- Some College
- 4-year degree
- Master's degree or equivalent (e.g., MA, MS, JD)
- Doctoral or medical degree (e.g., Ph.D, MD)

Which best describes your income level?

- Wish not to answer
- < \$20,000
- \$20,001 - \$40,000
- \$40,001 - \$60,000
- \$60,001- \$80,000
- \$80,001- \$100,000
- \$100,001+

**BODY IMAGE - PART ONE** We are interested in how people think about their bodies. The list below contains a variety of attributes that can be used to characterize the human body. We would like you to review all 12 attributes and then take a minute to think about the impact each of these 12 attributes has on your physical self-concept, that is, your evaluation of your own body. Please remember that assigning a rank of 1 indicates that particular body attribute has the greatest impact on your evaluation of your body, while a 12 indicates that attribute has the least impact on your evaluation of your body. Drag and drop your top three attributes into the correct order in the box provided. Important: Note that it does not matter how you describe yourself in terms of that attribute. For example, fitness level can have an impact on your physical self-concept regardless of whether you consider yourself to be physically fit, not physically fit, or

any level in between. Rank in ascending order the impact each of these body attributes has on your physical self-concept, that is, your evaluation of your own body.

_____ Physical coordination
_____ Health
_____ Weight
_____ Muscular strength
_____ Sex appeal
_____ Physical attractiveness
_____ Physical energy level
_____ Firm or sculpted muscles
_____ Physical fitness level
_____ Coloring (e.g., skin tone, eye and hair color)
_____ Measurements (e.g., chest, waist, hips)
_____ Stamina

**BODY IMAGE - PART TWO** We have provided your top three ranked attributes below. All of the attributes that you ranked 4-12 are represented by an item called "All other attributes." Next, assign a weight to each of these 4 items by dividing up 100 points between them. The weight assigned indicates how much impact that attribute has on your physical self-concept, that is, your evaluation of your own body. Example: It may help to think of this task as dividing a pie into 4 pieces (your top 3 attributes plus all other attributes as the fourth piece) and determining how large each piece should be based on how much impact it has on your physical self-concept. The total should add up to 100.

ATTRIBUTES	POINTS
1) _____	_____
2) _____	_____
3) _____	_____
All other attributes	_____

Imagine that you see a person with this profile. Physically he is your ideal. The picture in the profile portrays someone you find very attractive. Would you attempt to pursue a sexual encounter with him based on his profile?

- Yes
- No
- Wish not to answer

Would you insist on condom use during your sexual encounter?

- Yes
- No
- Maybe

Imagine that you are hanging out at your favorite local club or lounge and are talking to someone that you are interested in possibly having sex with. He is very physically attractive to you in every way. The conversation turns to sex, and he propositions you. Would you attempt to pursue a sexual encounter with him?

- Yes
- No
- Wish not to answer

Would you insist on condom use during your sexual encounter?

- Yes
- No
- Maybe

Imagine that you see a person with this profile. Physically he is your ideal. The picture in the profile portrays someone you find very attractive. Would you attempt to pursue a sexual encounter with him based on his profile?

- Yes
- No
- Wish not to answer

Would you insist on condom use during your sexual encounter?

- Yes
- No
- Maybe
- Wish not to answer

Imagine that you are hanging out at your favorite local club or lounge and are talking to someone with whom you are interested in possibly having sex. He is very physically attractive to you in every way. The conversation turns to sex, and he propositions you and discloses that he is HIV-negative. Would you attempt to pursue a sexual encounter with him?

- Yes
- No
- Wish not to answer

Would you insist on condom use during your sexual encounter?

- Yes
- No
- Maybe
- Wish not to answer

Imagine that you see a person with this profile. Physically this person is your ideal. The picture in the profile portrays someone you find very attractive. Would you attempt to pursue a sexual encounter with this person?

- Yes
- No
- Wish not to answer

Would you insist on condom use during your sexual encounter?

- Yes
- No
- Maybe
- Wish not to answer

Imagine that you are hanging out at your favorite local club or lounge and are talking to someone that you are interested in possibly having sex with. He is very physically attractive to you in every way. The conversation turns to sex, and he propositions you and discloses that he is HIV-positive. Would you attempt to pursue a sexual encounter with him?

- Yes
- No
- Wish not to answer

Would you insist on condom use during your sexual encounter?

- Yes
- No
- Maybe
- Wish not to answer

For the next set of questions, please think carefully about your experiences in the past year.

1. How often have you been whistled at while walking down a street?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

2. How often have you noticed someone staring at your chest or groin when you are talking to them?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

3. How often have you felt like or known that someone was evaluating your physical appearance?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

4. How often have you felt that someone was staring at your body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer



5. How often have you noticed someone leering at your body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

6. How often have you heard a rude, sexual remark made about your body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

7. How often have you been touched or fondled against your will?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

8. How often have you been the victim of sexual harassment (on the job, in school, etc.)?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

9. How often have you been honked at when you were walking down the street?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

10. How often have you seen someone stare at one or more of your body parts?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

11. How often have you overheard inappropriate sexual comments made about your body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

12. How often have you noticed that someone was not listening to what you were saying, but instead gazing at your body or a body part?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

13. How often have you heard someone make sexual comments or innuendos when noticing your body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

14. How often has someone grabbed or pinched one of your private body areas against your will?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

15. How often has someone made a degrading sexual gesture towards you?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

Please think carefully about your experiences in the past year as you answer the next set of questions.

1. How often have you whistled at someone while they were walking down a street?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

2. How often have you stared at someone's chest or groin when you are talking to them?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

3. How often have you found yourself evaluating someone's physical appearance?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

4. How often have you found yourself staring at someone's body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

5. How often have you found yourself leering at someone's body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

6. How often have you made a rude, sexual remark about someone's body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

7. How often have you touched or fondled someone against their will?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

8. How often have you felt like you were accused of sexual harassment (on the job, in school, etc.)?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

9. How often have you honked at someone when they were walking down the street?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

10. How often have you stared at one or more of someone's body parts?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

11. How often have you made inappropriate sexual comments about someone's body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

12. How often have you noticed that you were not listening to what someone was saying, but instead gazing at their body or a body part?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

13. How often have you made sexual comments or innuendos when noticing someone's body?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

14. How often have you grabbed or pinched one of someone's private body areas against their will?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

15. How often have you made a degrading sexual gesture towards someone?

- Never
- Rarely
- Occasionally
- Frequently
- Almost Always
- Wish not to answer

Please answer whether you agree or disagree with the following statements.

1. People who have AIDS are dirty.

- I Agree
- I Disagree
- Wish not to answer

2. People who have AIDS are cursed.

- I Agree
- I Disagree
- Wish not to answer

3. People who have AIDS should be ashamed.

- I Agree
- I Disagree
- Wish not to answer

4. It is safe for people who have AIDS to work with children.

- I Agree
- I Disagree
- Wish not to answer

5. People with AIDS must expect some restrictions on their freedom.

- I Agree
- I Disagree
- Wish not to answer

6. A person with AIDS must have done something wrong and deserves to be punished.

- I Agree
- I Disagree
- Wish not to answer

7. People who have HIV should be isolated.

- I Agree
- I Disagree
- Wish not to answer



8. I do not want to be friends with someone who has AIDS.

- I Agree
- I Disagree
- Wish not to answer

9. People who have AIDS should not be allowed to work.

- I Agree
- I Disagree
- Wish not to answer

Please indicate the extent to which you agree or disagree with the following statements.

1. I would like to explore strange places.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer

2. I get restless when I spend too much time at home.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer

3. I like to do frightening things.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer

4. I like wild parties.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer

5. I would like to take off on a trip with no pre-planned routes or timetables.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer

6. I prefer friends who are excitingly unpredictable.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer

7. I would like to try bungee jumping.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer

8. I would love to have new and exciting experiences, even if they are illegal.

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree
- Wish not to answer