THE RELATIONSHIP BETWEEN THE USE OF PHONE DATING APPLICATIONS AMONG MEN WHO HAVE SEX WITH MEN AND RISK-TAKING BEHAVIORS

by
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IN LOVING MEMORY OF MY SON:
Fernando M. Reyes

CHAPTER I: DISSERTATION OVERVIEW

INTRODUCTION:

The purpose of the overview chapter is to introduce the reader to the study; demonstrate the relevance of this research endeavor; provide a brief description of the study design, methodology and data analyses (quantitative and qualitative); explain how and in what ways this research project is significant to social work practice and finally, how the findings contribute to knowledge enhancement.

Health Disparity Impacts Vulnerable Sexual Minority. This research study was conducted in response to a serious, ongoing public health issue, which greatly impacts gay, bisexual, and other men who have sex with men (MSM) who have been disproportionately impacted by higher rates of human immunodeficiency virus (HIV) and sexually transmitted diseases (STDs) (e.g., syphilis, gonorrhea, and chlamydia) than the general U.S. population (CDC, 2021a; Paz-Bailey et al., 2017; Badal et al., 2018; Chan et al., 2018; and Beymer et al., 2018).

In a tireless effort to reduce the rates of HIV/STDs among this vulnerable sexual minority, the CDC (2021a) drew an astute conclusion from related research findings, "Hookup sites [Internet sites and phone applications] that men use for meeting other men for sex. . . might facilitate. . . STI transmission." Rettner (2014) observed, "The smartphone apps — which use a phone's GPS to locate nearby users — may allow people to meet sexual partners more quickly and easily than other methods, and so increase the chances of hooking up with strangers and acquiring sexually transmitted diseases."

COVID-19 Pandemic Impacts MSM Population. On March 11, 2020, the COVID-19 outbreak was declared a global emergency by the World Health Organization (WHO). Since the upsurge of this worldwide pandemic, at least 96,429,466 Americans were infected and nearly 1.6 million died. In New York State, there were 6,027,498 known cases, leading to 71,899 mortalities (Elflein, 2022). Furthermore, New York City COVID-19 cases amounted to 2,915,892 with 42,439 deaths (NYC Health Department, 2022).

During a 2020 CNN interview concerning the importance of COVID-19 safety guidelines, well-known researcher, Dr. Perry N. Halkitis, made this insightful, yet disturbing observation, "During stressful times like this pandemic - people are too often directed by heightened psychological responses that cloud good judgement . . . that is why, despite 40 years of messaging, some 40,000 new HIV infections emerge annually" (Halkitis, 2020).

Recent research studies suggested certain psychosocial factors, coupled with the usage of phone dating apps, have influenced some MSM to *resist* COVID-19 health advisories and *ignore* government restrictions, placing themselves and others at heightened risk for infection or worse (Sanchez et al., 2020; and Carrico et al., 2020).

Exploring Relevant Psychosocial Factors. From a research-based perspective, it seemed short-sighted to suggest that the use of phone dating applications was the *sole accelerant,* fueling MSM risk-taking behaviors prior to and during the COVID-19 pandemic; rather, this complex phenomenon required examination through a *psychosocial* lens; whereby, each of the following factors was considered in connection with MSM risk-taking behavior: 1) alcohol/substance abuse; 2) mental health issues

(depression/sexual compulsivity); and 3) health beliefs/risk perceptions. This study evaluated vulnerability for risk-taking behaviors across the following demographic characteristics: age, race/ethnicity, HIV status, education, and income levels.

Brief Description of Study Design and Methodology: A convenience sample of forty-two (42) sexually active MSM (men who have sex with men) respondents were recruited through online classified and magazine ads. Eligibility criteria required participants to be cisgender male between the ages of 18-60 years old, reside in New York City, and regularly use one of these methods to connect with casual sex partners: (i) Internet; (ii) In-Person; (iii) Phone Dating Applications.

Designed as a mixed-method research project, this study implemented the "explanatory sequential approach." (Creswell and Piano, 2011, p 44). This type of design approach incorporated this two-phase data collection process; whereby, quantitative and qualitative data were gathered, as follows: *Phase I* (Quantitative Data Collection) consisted of the researcher administering the following three test instruments to each of the forty-two (42) participants during a separate 45-minute interview: (i) 36-item Questionnaire Survey; (ii) Beck's Depression Scale Inventory, 2nd Ed. (BDI-II); and (iii) Sexual Addiction Screening Test (SAST-R) and *Phase II* (Qualitative Data Collection) a separate interview was conducted with each of the eleven (11) respondents selected from the original 42-person sample. These 11 participants were chosen from the original sample based on the ability to articulate and provide candid, descriptive responses. The 45-minute qualitative interview consisted of fifteen (15) open-ended questions. Due to COVID-19 safety precautions, all data were collected telephonically.

Data Analyses: The quantitative data were analyzed using Stata 15 (Long & Freese, 2006; Johnson & Wichem, 2007). Chi-square analysis was used to test the interdependence of Demographics Characteristics and Methods Used to Connect with Potential Sex Partners and High-Risk Sexual Behaviors. Specifically, prevalence ratios were used to compare Demographics Characteristics and High-Risk Sexual Behaviors across *each* of the Methods Used to Connect with Potential Sex Partners (Phone App, Internet, or In-Person). Multivariate logistical regression analysis was used to determine the potential link between Phone App Use and High-Risk Sexual Behaviors. Demographic Characteristics were controlled for throughout multivariate logistical regression to determine whether Phone App Use predicted High-Risk Sexual Behaviors. Additional correlational tests were performed for each of these Independent Variables: 1) Health Beliefs/Risk Perceptions; 2) Mental Health Issues (Depression and Sexual Compulsivity); and 3) Alcohol/Substance Abuse to determine the relationship between each of these Dependent Variables*:* 1) High-Risk Sexual Behaviors and 2) Pandemic Risk-Taking Behaviors) (See*,* Appendix A: Relationship between Dependent and Independent Variables). A Pearson correlation (also known as Pearson's r) analysis was performed to measure the strength of the linear relationship between two variables, High-Risk Sexual Behavior and Pandemic Risk-Taking Behavior. Additionally, a scatterplot graph was created to display the relationship between these two variables. Finally, the qualitative analysis examined and interpreted the patterns and themes captured from the eleven (11) recorded responses to the fifteen (15) open-ended interview questions. From these candid responses, the researcher was able to extract answers to the research questions and garner support for or against the three hypotheses posed.

Advancement of Social Work Practice and Ethical Criteria: This study drew attention to the ongoing sexual health disparity, impacting a vulnerable minority population by investigating the how methods used to connect to potential sex partners coupled with underlying psychosocial factors might influence high-risk sexual and pandemic risk-taking behaviors among said population. The findings advocate for calibrated intervention strategies to effectively treat mental health issues, alcohol/substance abuse, and advance LGBT educational outreach efforts along with free/low-cost testing/treatment for HIV/STDs and COVID-19 (National Science Foundation, 1997). Results confirmed the pressing need for these types of intervention among MSM of Color, who are at higher risk for HIV/STDs.

The following principles from the NASW Code of Ethics (2017) were particularly relevant to this research study: (i) help people in need and address social problems; (ii) challenge social injustice; (iii) promote the general welfare of society and the development of people (their communities, and environments); (iv) prevent/eliminate domination, exploitation and discrimination against any person, group, or class on the basis of race, ethnicity, national origin, color, sex, sexual orientation, gender identity or expression, age, marital status, political belief, religion, immigration status, or mental or physical ability; (v) expand choice and opportunity for all people, with special regard for vulnerable, disadvantaged, oppressed, and exploited people and groups.

CHAPTER II: THE STUDY PROBLEM

INTRODUCTION:

The study problem focused on the ongoing sexual health disparity, impacting men who have sex with men (MSM) who were found to be at greater risk than the general U.S. male population for HIV/STDs (CDC, 2021a). In response to the global health crisis caused by COVID-19, this study problem was expanded to consider how this vulnerable population impacted during the pandemic (Sanchez et al., 2020; and Carrico et al., 2020). This chapter describes in detail the *characteristics*, *scope,* and *intensity* of the study problem.

CHARACTERISTICS OF THE STUDY PROBLEM

Unsafe Sexual Practices Increase Risk for HIV/STDs. Seeking to explain and possibly reduce the existing sexual health disparity adversely affecting MSM, the CDC (2021a) and the U.S. Department of Health and Human Services (2020) suggested the following unsafe sexual practices directly contributed to the increased risk for exposure to HIV, syphilis, chlamydia and antimicrobial resistant gonorrhea: (i) a high number of lifetime sex partners; (ii) a high rate of partner exchange (multiple partnering); (iii) greater frequency of unprotected sexual activity (condomless sex); (iv) failure to use Pre-Exposure Prophylaxis (PrEP) Medication; and (v) the exchange/solicitation of sexual favors for money or valuable items (including drugs). These elements were incorporated study's design including the construction of dependent and independent variables.

Ignoring Safety Protocols Increases COVID-19 Risk. Recent research studies found engaging in certain risk-taking behaviors during the pandemic placed MSM at greater risk for COVID-19 infection, including: (i) failure to reduce in-person sexual

encounters; (ii) failure to replace direct sexual contact with a safe, virtual encounter option; and (iii) the exchange/solicitation of sexual favors for money or valuables. Furthermore, researchers observed that the use of methamphetamine during sexual encounters (commonly known as, "party 'n play") was associated with unsafe sexual practices due to the drug's ability to lower inhibitions and impair judgement (Souleymanov et al., 2021). The enticement to pursue "party 'n play" has driven some to *ignore* COVID-19 health advisories and mandated governmental restrictions. Recent studies and reliable news reports revealed phone dating apps were being used to facilitate the exchange sex for money or illicit substances (escort services used secret emoji icons to discretely offer services on phone dating apps) (Sanchez et al., 2020; Carrico et al., 2020; Whitney et al., 2018, Smith, 2018, Lourenco, 2018).

SCOPE AND INTENSITY OF THE STUDY PROBLEM

Newly Diagnosed HIV Infection Rates. The *HIV Surveillance Report* published by the CDC (2020) recorded 1,189,700 people in the United States living with HIV in 2020, with over half of this population (57%) were gay and bisexual men. This report likewise showed there were 30,635 newly diagnosed HIV cases, with 20,758 cases (68%) resulting from *male-to-male sexual contact*. Furthermore, cisgender MSM of color appeared to be at greater risk for HIV/STDs than other U.S. subgroups, with African-Americans accounting for 8,064 (26%) of newly diagnosed HIV cases, followed by Hispanics/Latinos with 6, 358 new HIV cases (21%). Finally, young Black/AfricanAmerican gay and bisexual men were most severely affected, representing

53% (2,740) of the newly diagnosed HIV cases among young gay and bisexual men (13 to 24 years old).

Rising STD Rates. Research data revealed there were 133,945 cases of syphilis reported in the U.S., with 41,655 cases of primary and secondary (P&S) syphilis; of these, MSM are disproportionately impacted, accounting for a majority (53%) of all male P&S syphilis cases in 2020 (CDC, 2020). Kim, Kent and Klausner (2003) found anonymous sex, coupled with substance abuse led to increased rates of "rectal gonococcal among MSM with HIV infection." Bernstein et al. (2010) observed an increase of urethral gonorrhea among MSM subjects who engaged in unprotected oral sex. Park et al. (2012) observed the prevalence of pharyngeal gonorrhea and chlamydia among MSM subjects. Pathela et al. (2013) asserted "HIV incidence was significantly higher among MSM with rectal infections" (p. 1205). Workowski and Bolan (2015) suggested those who were recently diagnosed with HIV infection were more likely to test positive for "asymptomatic gonorrhea" (p. 22).

During his tenure as New York State Governor, Andrew Cuomo announced an ambitious goal to end the HIV/AIDS epidemic in New York by 2020. Findings revealed a decline of 11% in new HIV cases, representing a decrease of 28% since 2014. Crediting this triumph to an aggressive nationwide campaign to promote the use of PrEP medication, Cuomo was hopeful about nationwide efforts to "bend the curve on an epidemic that has taken too many lives for too long" (Cuomo, 2019). More recent reports published in the NYS HIV/AIDS Surveillance Annual Report (2020) indicated, "The number of persons newly diagnosed with HIV in New York State (NYS) has decreased 51% from 2011 to 2020 (3,971 to 1,933). While Cuomo's statewide campaign to

promote the use of PrEP was commendable; nevertheless, more still needs to be done on a nationwide scale and as previously discussed, to reduce HIV/STDs rates among MSM of Color.

Health Beliefs/Risk Perceptions and Risk-Taking Behavior. Since the breakthrough of the highly active antiretroviral therapy (HAART), being HIV-infected no longer translates to a death sentence; however, those living with AIDS have a weakened immunity system; hence, they are subject to cardiovascular disease, kidney disease, diabetes, bone disease, liver disease, cognitive disorders, and some types of cancer (Medical Institute for Sexual Health, 2011; HIV.gov, 2023). Misinformation about HAART's ability to prevent *all* HIV transmission, has led some HIV positive persons to engage in unsafe sex practices, without realizing the potential for virus mutation, rendering HIV medication protocol ineffective (Carballo-Diéguez & Bauermeister, 2004; Halkitis et al., 2005).

A cross-sectional survey involving a sample of 16,827 respondents in Australia, found, "A rapid increase in PrEP use by gay and bisexual men in Melbourne and Sydney was accompanied by an equally rapid decrease in consistent condom use" (Holt et al. (2018, p. 448). Grant and Koester (2016) suggested PrEP users may experience a new-found sense of intimacy/freedom derived from PrEP use; however, some failed to weigh the negative consequences of STIs as direct result of condomless sex. Kojima et al. (2016) found "MSM using PrEP were 25.3 times more likely to be diagnosed with neisseria gonorrhoeae." Sarimento (2016) found some subhects had a casual reaction to becoming infected with an STI (trusting a round of antibiotics effectively cures *all* forms

of STIs); however, they failed to realize that certain strains of STIs are *resistent* to antibiotic treatment.

Impact of COVID-19 Pandemic upon MSM Population. As of October 23, 2022, there have been 96,429,466 Americans infected by the COVID-19 virus with 1.6 million fatalities. In New York State there were 6,027,498 cases with 71,899 deaths (Elflein, 2022). Furthermore, New York City COVID-19 cases amounted to 2,915,892 with 42,439 deaths (NYC Health Department, 2022). During the height of the Pandemic, the CDC (2020) strongly warned against "physical contact and intimacy," even if potential partners seem healthy. These seemingly healthy persons might be in the early incubation stage (pre-symptomatic) or display no obvious signs of COVID-19 (asymptomatic).

Three recent studies explored the impact of COVID-19 among MSM raised serious concerns. In the USA, Sanchez et al. (2020) conducted an online survey to measure of COVID-19 related impact among 1,051 MSM subjects. In response to COVID-19 stay-at-home orders, researchers learned many persons did heed warnings to avoid direct sexual contact and substance use; however, data showed some defiantly resisted/ignored stringent health advisories. Findings revealed slightly more than half of participants (51.3%) reported a *decrease* in number of sexual partners; among this group, 45.3% were younger MSM (15-24 years) and 52.8% were over age 25. Unfortunately, a significant percentage (47.6%) reported *no change* in the number of sex partners and 0.9% indicated an *increase* the number of partners. Among those who reported *no change* in the number of sexual partners, 53.4% were between the ages of 15-24 years old

and 46.1% were >25 years old. Among the small percentage who reported an *increase* in partners, 1.4% were 15- 25 year of age and 0.7 >25 years old.

The closure of popular meeting venues (bars/clubs/gyms) may have impeded interpersonal contact, as follows: 68.0% reported a *decline* in opportunity to have sex, 26.8% reported *no change* and 4.3% indicated an *increase* in opportunity for sex. Concerning the use of phone dating apps to locate potential partners, 35.1% reported a *decrease* in usage, while 49.7% reported *no change* in phone apps use and 14.9% *increased* use. Among the 15-25 age group 30.4% reported a *decrease* in app usage, 47.7% reported *no change* and 22% indicated an *increase* in app use. Of those over 25 years 36.3% reported *decreased* app usage, 50.2% had *no change* and 13.1% had an *increase* in app use.

Concerning the use of recreational drugs, 6.8% reported a *decrease* in use, 82.2% reported *no change* and 9.9% had *increased* use of substances. Among those under 25 years, 8.9% reported a *decrease* in drug use, 72.9% indicated *no change* and 18.2% reported an *increase* in use of substances. Those over 25 years reported 6.2% *decrease* in substances, 84.5% reported *no change* and 7.8% showed an *increase* in substance use. Concerning alcohol consumption, 10.1% reported a *decrease*, 62.6% *no change* in drinking patterns and 26% reported an increase in consumption.

International research team, de Sousa et al. (2021). investigated casual sexual activity during the COVID-19 Pandemic among 2,361 MSM in Brazil and Portugal. Findings showed the majority (53.0%) *ignored* the national sheltering order and continued to participate in anonymous sexual liaisons. Concerning certain psychosocial

factors, which may explain pandemic risk-taking behavior, the research team of Carrico et al. (2020) suggested the prolific use methamphetamine (crystal meth) among MSM living in the United States has contributed to an increase in newly diagnosed HIV/STI cases and COVID-19 infections among this population.

Health Beliefs/Risk Perceptions and Pandemic Risk-Taking Behaviors. Some may believe it is safe to sexual engage with a young seemingly healthy partner,because they do not display any apparent symtoms such as fever, cough, etc. Unfortunately, outward appearances can be very deceptive; in fact, a COVID-infected person may display no symptoms or very mild ones, but the viral load (the amount of virus being emitted by the infected person) may be at its highest point with 75% of those who initially presenting as "asymptomatic" developing COVID-19 symptoms later (Chen, 2020).

Public health experts saw an increase of COVID- 19 among younger persons due to the misconception that only older adults were at risk. For example, 44% of new infections in California are among those under 35, while new cases among 18-29-year-olds in the state of Georgia jumped to 27% and half of all new cases in Florida were observed among those under 37 years old (Stone, 2020). Lack of perceived risk caused the younger demographic to "mov[e] away from social distancing and consistent mask use" (Stone, 2020). These faulty health beliefs likely influenced pandemic risk-taking behavior among the younger MSM population.

RELATIONSHIP BETWEEN STUDY PROBLEM & RESEARCH QUESTIONS

This research project sought to address the study problem, namely, the serious sexual health disparity (elevated rates of HIV/STDs) and impact of COVID-19 pandemic among MSM (CDC, 2020 & 2021; Sanchez et al., 2020; de Sousa et al., 2021 and Carrico et al., 2020). The following research questions were developed to explore how the method used to connect with potential sex partners may have contributed to this ongoing sexual health disparity among MSM as well as the impact of the COVID-19 Pandemic: (1) To what extent do certain demographic characteristics of MSM affect the method used to connect with potential sex partners? (2) To what extent does the method used to connect with potential sex partners influence high-risk sexual behaviors, controlling for these psychosocial factors: (i) mental health issues (depression/sexual compulsivity), (ii) alcohol/substance abuse and (iii) health beliefs/risk perception? (3) To what extent does the method used to connect with potential sex partners influence Pandemic Risk-Taking Behaviors, controlling for these same psychosocial factors: (i) mental health issues (depression/sexual compulsivity), (ii) alcohol/substance abuse and (iii) health beliefs/risk perceptions?

The data collected by this study revealed the method used to connect to potential partners did *not* predict high-risk sexual behavior (HRSB) ; however, findings revealed faulty health beliefs/risk perceptions and mental health issues (depression/sexual compulsivity) were predictive for risk-taking behaviors. Concerning pandemic risk-taking behaviors (PRTB), the method used to connect with potential sex partners did *not* predict this outcome. Both quantitative and qualitative data collected indicated phone apps users to advantage of this digital platform during the pandemic to pursue the safer

option of virtual sex encounters to reduce feelings of isolation/loneliness, while some used this platform to promote invitations to underground parties and party n' play soirees during the height of the COVID-19 pandemic despite health warnings. Those who ordinarily met potential sex partners at in-person venues, may have switched to phone apps to facilitate hook-ups, with social media companies offering discount rates to new subscribers. Others spread invitations for underground parties by word of mouth. Given the trending popularity of phone apps prior to and during the COVID-19 pandemic, this platform often serves as a *gateway* for risk-taking behaviors; however, it can likewise serve as an excellent avenue for sexual healthcare education and access to free/affordable HIV/ STD screening/treatment. Many conscientious participants accused the social media companies for being more interested in profits than public health safety. When bars/clubs were under lockdown, phone app companies seized pandemic lockdown to attract new app subscribers rather than use the digital platform to promote user safety.

The Pervasive Influence of Digital Technology. Compared to traditional methods (Internet and in-person venues) used to connect with potential sex partners, phone dating applications have harnessed the power of Global Positioning System (commonly known as GPS) to give app subscribers these three distinct advantages, "speed, convenience and proximity" (Wortham, 2011). Despite all the amazing advantages associated with digital technology, Levitin (2018) warned about potential danger of *addiction*, comparing the algorithm designs of phone apps to those of Las Vegas slot machines; in both cases, these devices are cleverly "engineered to keep [user's] hands and eyes glued" to the screen in *constant expectation of a potential reward*. Interestingly, researchers observed the *anticipation of pleasure* causes the brain

to increase the production of *dopamine*, which triggers dangerous addictive behavioral patterns. In an *irrational haste* to experience pleasure, risk-takers proceed *without* regard negative consequences (Goodman, 2008 & 2009; Sapolsky, 2011; Billieux et al., 2015; Gardner, 2015; and Dold, 2017).

Pandemic warnings advanced by the New York City Department of Health (2020) encouraged individuals to *resist* direct sexual contact with casual partners; furthermore, health officials suggested virtual sex encounters as a safer option during the COVID-19 pandemic. Concerning adherence to those COVID-19 warnings, researchers Sanchez et al. (2020) suggested pandemic-related anxiety and depression may have prompted some to engage in casual sexual encounters *despite* the potential risk for viral infection and/or government sanction. Furthermore, such risky encounters were facilitated using phone dating apps. Halkitis (2020) suggested certain psychosocial factors were responsible for high-risk sexual behaviors and the elevated rates of HIV/STDs among MSM would likely prompt risk-taking behavior during the COVID-19 pandemic.

CONCLUSION: In response to the serious seuxal health disparity observed among MSM and the immense impact of digital technology on human sexual behavior, this indepth study was warranted. The crucial data gathered could be used to create innovative life-saving intervention strategies for MSM addiction treatment, mental/sexual healthcare including free/low-cost treatment/testing centers.

CHAPTER III: LITERATURE REVIEW

While not exhaustive, this literature review gathered and critiqued the relevant body of research available to date. Most of the research studies identified were empirical in nature, with the vast majority focusing on the correlation between the use of the Internet for sexual purposes and risk-taking behaviors. By harvesting such valuable data from these prior studies, inferences were drawn about the potential impact of digital technology and human sexual behavior. Since phone dating applications emerged after the launch of the iPhone in 2007, there was only a small number of available studies, which examined the relationship between the use of phone dating applications and risk-taking behaviors (Rice, 2017). Recent risk-taking behaviors observed during the COVID-19 pandemic sparked commentaries from several journalistic sources and prompted U.S. and international research concerning the impact of the pandemic among MSM populations. Despite strict governmental warnings to maintain social distancing, the use of MSM dating apps to facilitate direct sexual contact and methamphetamine-fueled hook-ups/parties became widespread (Sanchez et al., 2020; McKay et al., 2020; de Sousa et al., 2021 and Carrico et al., 2020).

INTERNET USE AND RISK-TAKING BEHAVIORS

Just a few decades ago, cisgender gay/bisexual men and men who have sex with men (MSM) were not able to openly congregate without facing homophobic discrimination, possible arrest, loss of employment/housing and/or outright violence; hence, they were forced to meet in discrete, underground venues (bars/clubs/bathouses) (Aunspach, 2015). In the 1990s, Internet technology spawned a new virtual environment (chatrooms/websites) where members of this marginalized community could freely

interact without fear of exposure. While the Internet gave MSM the opportunity to engage in anonymous sexual encounters without the facing the dangerous reprocussions from a homophobic society, some researchers suggested the Internet became a *conduit* for risk-taking behavior.

Taylor et al. (2004) conducted a quantitative study to evaluate the use of the Internet to solicit sex partners. The team gathered a convenience sample of 850 cisgender MSM patients, diagnosed with early-stage syphilis infection at the L.A. County Department of Health. Findings revealed half the sample were MSM of color: 10.58% Black, 35.29% Hispanic and 5.64% (Other), while 48.47% identified as Caucasian. The vast majority (77%) reported meeting partners *offline*. Of these, 73% reported condomless sex and 26% revealed the use of illicit substances. Less than one-quarter (23%) met partners *online* with 71% of these engaging in unprotected sex and 35% using illicit drugs. Researchers concluded *both* online and offline groups were at *equal* risk for risk-taking behaviors; however, the *anonymous climate* spawned by Internet liaisons raised public health concerns because it was difficult to trace/notify infected partners to allow for proper testing and treatment.

Liau et al. (2006) conducted a meta-analysis to chronicle: 1) the percentage of MSM who sought out sex partners online versus offline, 2) the percentage of Internet users who had sex with those met online and 3) the prevalence of risky sexual behavior among online *versus* offline encounters. Researchers reviewed 83,296 related documents from 1998 through 2005, selecting 22 studies for inclusion. Findings revealed *the recruitment methods used greatly impacted results*. They observed higher prevalence rates for online sex-seeking observed among those subjects *recruited via online* means

(63.8% to 98.5% - weighted mean - 84.7%; 95% CI, 81.4%–88.0%) compared to those recruited offline (23.3% to 57.3% (weighted mean - 40.2%; 95% CI, 35.2%– 45.2%). Since online recruitment took place within gay chat rooms; hence, researchers concluded such encounters were primarily for *sex-seeking purposes*.

Concerning the percentage rate for those who had sex with partners located through online means, data showed the mean range for those studies using online recruitment was significantly higher (78.3% to 93.5% - weighted mean = 81.6%; 95% CI, 76.3%–86.9%; k = 5) compared to studies using offline recruitment (22.4% to 33.0% (weighted mean = 30.3%; 95% CI, 26.3%–34.3%; k = 3).

Most importantly, risky sexual behavior was more likely among those who used online means to locate partners, compared to those who did not (OR 1.68; 95% CI, 1.18 – 2.40; k = 11). Researchers concluded the Internet provided greater access to potential sex partners than offline means; hence, the likelihood of contracting a sexually transmitted disease was greater.

Grov (2006) conducted a quantitative study to investigate whether two popular barebacking (i.e., condomless anal sex) websites encouraged unsafe sexual practices without warning users about the inherent health risks. Grov commended the efforts of the website *Bareback-4-Life.com* for taking preventive steps towards HIV harm-reduction, by discouraging the use of methamphetamine (a popular illegal stimulant), which lowers sexual inhibition. Quoting a provocative statement from *BarebackRaw.com*, Grov condemned this website's indifference towards user safety, "Since you are an adult, you can decide to live this lifestyle or not, and accept the consequences for doing so. We are here for those who want to live this lifestyle, and

don't feel that they fit in to the safe-sex world" (p.993). Grov asserted adult websites should bear the responsibility to promote sexual health safety among subscribers.

Rosser et al. (2009) investigated the "magnitude of HIV risk" among Internet users, recruiting a convenience sample of 2,716 cisgender MSM from three popular websites: *Gay.com*, *Planet Out.com* and *Latino Gay.com*. The diverse sample contained 26.8% White, 25.4% Latino, 16.38% African American, 7.80% Asian American and 12.81% (Other). Participants completed an online survey about sexual behaviors. Findings revealed 69% across all demographic characteristics reported no unprotected anal intercourse (UAI); while 31% reported UAI, with nearly twice the amount of UAI occurring among those who met online compared to those who met offline. HIV-positive users were at 4.1 times greater risk for UAI with partners met online than HIV-negative users and at 2.6 times greater risk for UAI with partners met offline. The Rosser team concluded the likelihood of UAI was significantly increased because the Internet made it easier to find potential sex partners.

Summary of Findings. Concerning the relationship between high risk sexual behavior and Internet use, only researchers Liau et al. (2006) found online encounters were associated with a higher prevalence of risky sexual behavior. In contrast, the Rosser team (2009) observed the majority of subjects did not engage in UAI. Taylor et al. (2004) actually found no difference in UAI among online and offline groups; although concern was rasised about the use of illicit drugs, unprotected sex and the increased risk for STD (syphilis) among MSM of color. The Taylor team concluded anonymity of Internet hook-ups posed a seriously public health challenge, making it difficult to trace, notify, test and treat potentially infected partners. All researchers noted the Internet

readily faciliated *access* to potential sex partners; hence, it increased the likelihood of unsafe sexual practices.

PSYCHOSOCIAL FACTORS AND RISK-TAKING BEHAVIOR

Simply blaming the Internet as the sole culprit, responsible for risk-taking behavior does not take certain psychosocial factors into consideration, which may prompt some Internet users to behave recklessly. Several studies suggested mental health issues, such as compulsive sexual behavior (CSB), mood/personality disorders, childhood trauma and/or substance abuse were linked to risky online behaviors.

Cooper, Delmonico and Burg (2000) conducted a quantitative study to explore online sexual compulsivity, using a convenience sample of 9,265 male/female subjects. Respondents answered an online survey, consisting of four measurement tools: 1) *Online Sexual Pursuits* which assessed hours spent online, viewer's location, medium preference, level of preoccupation, feelings during online activity, changing online identity (age/gender) and perception of harmful effects; 2) *Sexual Compulsivity Scale* designed by Kalichman et al. (1994), rated subjects as follows: non-compulsive, moderately compulsive, compulsive or cybersex compulsive (11+ hours per week Internet sex-seeking); 3) *Sexual Sensation Seeking* measured propensity for risky sexual behavior and 4) *Nonsexual Sensation Seeking* measured tendency towards thrill/adventure seeking, lack of inhibition and susceptibility to boredom.

Findings indicated a high percentage of female; homosexual and single participants were found to be *Cybersex Compulsive.* Interestingly, these subjects engaged in a high volume of online sex-seeking activity *only during work time*. Such results prompt researchers to question why these subjects would risk possible exposure and loss

of employment to engage in this risky activity. Perhaps viewing adult websites on the workplace computer was the only way to avoid detection from family members; nevertheless, researchers suggest such behavior may indicate compulsive behavior patterns. Surprisingly, more than half (54%) of those with high levels of cybersex activity claimed online activities did *not* jeopardize or interfere with everyday life, suggesting these subjects were in a *state of denial* about the potential for adverse consequences resulting from such reckless behavior. The Cooper team concluded elevated cybersex activity was counter-productive to normal, healthy sexual development, drawing attention to the growing number of persons seeking mental healthcare treatment to manage online sexual compulsivity.

Chaney and Dew (2003) conducted a qualitative study to explore online sex addiction among a convenience sample of 13 MSM subjects recruited from online gay chat rooms. Data analysis identified five themes related to online sexual addiction: (1) *Compulsivity* (compelling need to engage in repetitive, ritualistic behavior); (2) *Denial* (minimizing impact to self/loved ones); (3) *Mood Alterations* (elevating self-esteem through attention-seeking); (4) *Dissociation* (disconnecting one's feelings from actions); and (5) *Need for Social Connectedness* (seeking intimacy to reduce loneliness). Findings revealed time spent online ranged from 1 to 40 hours per week, with a weekly mean of 13.6 hours (findings did not include standard deviation). Most subjects used these online exchanges for masturbatory purposes and to pursue offline liaisons. Subjects revealed a compulsive need to engage in "repetitive and habitual online behaviors" (p. 267). Most participants felt less stigmatized by online encounters than in-person hook-ups. The majority denied any adverse impact to loved ones/family from online sex-seeking.

Concerning the emotional impact from online hook-ups, participants reported elevated self-esteem derived from attention from younger online admirers. Negative emotions were reported when expectations went unmet. Subjects reported feeling disassociated (lack of connection or feelings). The online encounters provided a platform to fulfill fantasies and role-playing, not possible with one's spouse or partner. Despite the small sample size of 13 MSM participants, the candid responses derived from open-ended questions provided a deeper insight into the mental and emotional factors, fueling compulsive online sexual activity.

Halkitis et al. (2005) conducted a quantitative study among a convenience sample of 1,168 HIV-positive cisgender MSM to explore barebacking (slang term for the practice of condomless anal sex) as *a social identity* with the intention of testing the efficacy of a behavioral intervention promoted by the Seropositive Urban Men's Intervention Trial (funded by CDC between 1999 and 2002) to reduce unprotected sex among HIV-discordant partners. Recruitment took place via AIDS-related organizations, clubs/bars, and public/commercial sex environments, with a sample distribution between New York City (n=590) and San Francisco (n=578). Subjects were divided into three categories: 1) barebackers, 2) non-barebackers and 3) those unfamiliar with this slang term. Participants completed an online questionnaire to assess barebacker identity, sexual behavior, demographic factors, psychosocial states, perception of health risks and substance abuse. Participants were randomly assigned to: (i) six-week program OR (ii) one-session educational control program. Participants were assessed at baseline, 3 months post-intervention and 6 months post-intervention.

Researchers found those who self-identified as barebackers were slightly younger men (40.24 years old) than those who did *not* identify as barebackers (41.79 years old). A higher percentage of self-identified barebackers resided in San Francisco (35.7%) compared to those who hailed from New York City (28.4%). Higher levels of sexual compulsivity were found among self-identified barebackers (1.80) compared to non-barebackers (1.66) as well as lower levels of perceived responsibility to practice safe sex among barebackers (3.75) compared to non-barebackers (4.27). Barebackers were more likely to report use of illicit substances (69.0%) compared to non-barebackers (52.9%). Among self-identified barebackers, 42.7% engaged in unprotected sex with *only* HIV+ partners, 2.2% with *only* HIV-negative men and 11.7% with *only* men of unknown HIV status. The remainder of self-identified barebackers (43.0%) indicated they had unprotected sex with *all* serostatuses.

It is important to mention, the study explored certain mental health factors, which could have triggered risk-taking behaviors. Although no significant differences were found between self-identified barebackers and non-barebackers in terms of depression, anxiety, hostility, or loneliness; results did reveal *higher levels of sexual compulsivity* [$F(1, 975) = 9.16$, $P = 0.003$; M = 1.80 versus M = 1.66] as well as *lower levels of perceived responsibility* for safer sex among self-identified barebackers [$F(1, 974) = 129.07$), $P < 0.001$; M = 3.75 versus M = 4.27]. Researchers did not supply standard deviations for the above mean findings. In retrospect, the Halkitis team realized this study erroneously focused on barebacking as *a social identity* rather than *a type of sexual behavior*. Nevertheless, researchers did identify the need for expanded mental healthcare and substance abuse intervention to reduce risk-taking behavior.

Coleman et al. (2010) examined the link between compulsive sexual behavior (CSB) and unprotected anal intercourse (UAI) among a convenience sample of 2,716 cisgender MSM. Gay websites/chat rooms were used to gather subjects to answer an online *Compulsive Sexual Behavior Inventory* (CSBI) designed by researchers Miner, Coleman, Center, Ross, and Rosser (2007) and survey questions about sexual behavior.

Findings showed elevated CSBI scores were associated with a greater probability of UAI with recent partners met online *and* offline. For each unit increase in CSBI score, the odds for UAI rose by 1.02 (95% CI = 1.01, 1.03). The Coleman study found nearly half of respondents (49%) engaged in anal intercourse with the most recent *online* partner. Of these, 26% reported unprotected anal intercourse (UAI). Additionally, significantly higher mean scores on the CSBI (M = 47.31, SD = 12.75) were observed among those who engaged in UAI compared those subjects who did not (M = 43.85, SD = 11.75), $t(1298) = 4.43$, $p<.001$. Furthermore, 40 % of respondents had anal intercourse with the most recent offline partner. Of these, 28% had UAI. Likewise, CSBI scores were significantly higher among those engaging in UAI with the most recent offline partner (M = 45.40, SD = 12.22) than those who did not (M = 43.32, SD = 11.81), $t(1081) = 2.53$, $p > .05$.

The total CSB score coefficients for the most recent online and offline partner were tested for equality, adjusting for the co-variation in the outcome measure. The difference between the adjusted effect of CSB on UAI between online and offline was *negligible*, v2(1) = 0.80. This study confirmed the important link between compulsive sexual behavior (CSB) and unprotected anal intercourse (UAI). Researchers emphasized the importance of assessing/treating CSB as an integral part of HIV-prevention strategy.

Klein (2011) conducted a mixed-method study using a random sample of 332 cisgender MSM who used the Internet to engage in *barebacking* (unprotected anal sex). Known as *The Bareback Project*, this study was funded by the National Institute on Drug Abuse. Candidates were recruited from 16 different websites. A one-time, confidential telephone interview collected demographic information, level of LGTQ identity disclosure (*outness*), perception of discrimination based on sexual orientation, general health practices, HIV testing history, current HIV serostatus, sexual practices (protected/unprotected) with partners met online/offline, risk-related preferences, risk-related hypotheticals, substance use, drug-related Internet usage, psychosocial functioning, childhood trauma, HIV/AIDS knowledge and experiences with formal drug treatment programs (excluding self-help groups) and the number of times a subject received treatment. Researchers gathered post-interview narrative summaries, recording participants' personal statements to enhance the depth of quantitative findings.

Findings revealed over half (56.4%) engaged in sex encounters under the influence of alcohol and/or illicit drugs. The post-interview comments from one HIV-positive respondent (R817) revealed a distrurbing level of *apathy*, describing himself as "having become deadened" to the repetitive warnings heard about the risk of HIV (p. 96). Since becoming HIV infected, this subject's substance abuse unfortunately increased along with sexual risk-taking. Klein called for targeted substance abuse intervention strategies to reduce UAI and the risk of HIV infection.

Parsons, Grov and Golub (2012) conducted a cross-sectional quantitative study among a convenience sample of 669 cisgender MSM to examine how five psychosocial issues contributed to an increased HIV risk. Researchers borrowed the term *syndemic*

from research team Singer and Clair (2003), which coined this term to classify the interaction of *two or more co-existent diseases and the resultant impact*. Participants were recruited during a 2-day LGBTQ event and asked to complete an in-person questionnaire to measure: 1) polydrug use, 2) depression, 3) childhood sexual abuse, 4) partner violence and 5) sexual compulsivity.

Findings derived from the bivariate analyses showed all syndemic psychosocial issues (*except* childhood sexual abuse) were tied to HIV sero-positivity and high-risk sexual behavior: 47.4% reported depressive symptoms, 21.5% experienced partner violence in past 5 years, 19.3% presented with sexual compulsivity, 10.2% experienced childhood sex abuse and 8.4% engaged in polydrug use during the past 90 days. Results from the multivariate analysis concluded out of the 10 odds ratios calculated among psychosocial health issues, 7 were significant/positive. Those with symptoms of sexual compulsivity had 3.95 higher odds of being depressed, 2.20 higher odds of experiencing childhood sexual abuse and 2.56 higher odds of experiencing intimate partner violence in the past 5 years compared with those who were not sexually compulsive. Although this research study did not *directly* explore the use of the Internet and risk-taking behavior, it was included in this literature review for its illuminating insight into the psychosocial problems contributing to unsafe practices/increased HIV risk.

Chew-Ng et al. (2013) conducted a quantitative study to explore the link between methamphetamine use, Internet sex-seeking and increased risk for syphilis, using a convenience sample of 5,925 cisgender MSM diagnosed with primary/secondary stage syphilis, recruited from the California Surveillance Registry between 2004 - 2008.

Findings revealed over half of respondents were Caucasian men (51.4%) with a median age of 37 years (range = 14 to 75 years). Of these, the vast majority were diagnosed with secondary syphilis (71.0%) and over half (58.95%) were HIV-positive. Those who used methamphetamine reported significantly *more* sex partners (mean = 11.7; 95% confidence interval [CI] = 10.4, 13.0) than non-drug users (mean = 5.6; 95% CI = 5.3, 5.9; P < .001). Those who used the Internet reported more sex partners (mean = 9.8; 95% CI = 9.1, 10.5) than those who did not use the Internet for sex-seeking purposes (mean = 5.0; 95% CI = 4.6, 5.4; P < .001). In light of these findings, researchers warned that "the Internet offers an increasingly efficient, user-friendly, and expansive medium by which high-risk individuals can form new drug-related or sexual partnerships" (p. 1454).

Chaney and Burns-Wortham (2014) conducted a quantitative study to measure the correlation between online sexual compulsivity, dimensions of disassociation and past child abuse among a convenience sample of 517 cisgender MSM were recruited from gay men's Internet chat rooms. Three online tests were administered: 1) *Internet Sex Screening Test* (ISST) to measure clinically problematic sexual compulsivity, including *online* sexual compulsivity; 2) *Curious Experiences Survey* (CES) to measure three distinct areas of disassociation: (i) depersonalization (not feeling like one's self), (ii) absorption (escaping into a fantasy world) and (iii) amnesia (memory difficulties) and 3) *Demographic Questionnaire* gathered data on sexual/affection attractions, age, ethnic background, relationship status, hours spent online and self-report of childhood emotional, physical, and/or sexual abuse.

Results showed significant correlations between the number of weekly hours spent online and sexual compulsivity (r = .29) and all three CES subscales: absorption

(r = .17), depersonalization (r = .20), and amnesia (r = .21). Likewise, a significant correlation was observed between the number of weekly hours spent on online sexual and the four variables: online sexual compulsivity (r = .42), absorption (r = .21), depersonalization (r = .19), and amnesia (r = .17). However, both sets of correlational findings are moderate to weak. The Chaney team found those who suffered from history of childhood abuse scored significantly higher on the three subscales of disassociation: absorption, $F(1, 515) = 10.39$, $p < 0.001$; depersonalization, $F(1, 515) = 25.29$; $p < 0.001$; and amnesia, $F(1, 515) = 19.40$; $p < 0.001$. The Chaney team was surprised by present results which did not match the findings obtained by Bancroft and Vukadinovic (2004) and Blain et al. (2012), who suggested sexual compulsivity was linked to past childhood abuse.

In hindsight, Chaney's team realized the test instrument used, *Internet Sex Screening Test* (ISST) essentially targeted online sexual compulsivity; whereas past studies used surveys to measure other expressions of sexual compulsivity. Concerning the ISST tool, these researchers did not indicate what types of clinically problematic sexual compulsivity were being assessed. It is important to differentiate between aspects of past childhood abuse, especially *sexual abuse*, which should be examined separately in relation to compulsive and/or high- risk sexual behavior.

Researchers *only* measured online sexual compulsivity, which may be *limited* to enacting personal online fantasies. Whereas the use of open-ended interview questions might have provided greater insight into the relationship between past childhood abuse and current compulsive and/or high-risk sexual behavior. Finally, the demographic sampling was skewed with 83.1% of subjects identifying as White; essentially

overlooking the impact of childhood sexual abuse as it relates to online sexual compulsivity among MSM of color.

Summary of Findings: Studies explored certain psychosocial factors that might inform compulsive Internet sex-seeking and high-risk sexual behaviors, leading to an increased risk for HIV/STDs. Cooper, Delmonico, and Burg (2000) found those with higher CSB scores (female, homosexual and single subjects) engaged in greater levels of cybersex activity in the workplace. A significant percentage appeared to be in a state of denial, failing to concede any negative impact to work and/or self/family. The Cooper team (2000) voiced concern about the rise in persons seeking mental health treatment for online sexual compulsivity. Chaney and Dew (2003) found Internet sex-seeking activity satisfied compulsive sexual urges, reduced fear of shame/stigma, elevated self-esteem, relieved depression anxiety and reduced loneliness/isolation. Coleman et al. (2010) found those with high compulsive sexual behavior scores were more likely to engage in UAI both online *and* offline. Researcher studies conducted by Taylor, et al. (2004), Halkitis et al. (2005), Klein (2011); Chew-Ng et al. (2013) and Maxwell et al. (2019) *all* identified substance abuse as the key accelerant, fueling risky online sexual behavior. Parsons et al. (2012) observed a *synergistic* relationship between poly-drug use, depression, childhood sexual abuse, partner violence and sexual compulsivity and HIV-risk among MSM. Chaney and Burns-Wortham (2014) found MSM who reported past childhood abuse scored significantly higher on absorption, depersonalization, and amnesia; however, a significant relationship was not found between online sexual compulsivity and self-reported past child abuse.

PHONE DATING APPLICATIONS AND RISK-TAKING BEHAVIORS

Lured by the promise of instant gratification, those seeking casual sexual encounters have drifted away from the once-popular Internet adult websites, gravitating to phone dating applications which are "driven mainly by photos and proximity" (Li, 2011). Several studies suggest phone dating applications may be enabling high-risk behavior on an even greater scale than its predecessor, the Internet.

Burrell et al. (2012) commenced initial research efforts as part of a larger clinical trial, known as the *Microbicide Development Program* (MDP) at the University of California, Los Angeles (UCLA) to develop rectal microbicide products. During the early stages of this project, MDP recruited a convenience sample of 130 subjects (105 men/25 women) through fliers displayed at local HIV/AIDS health clinics, community-based organizations, newspaper ads and online postings on craigslist.org. As the study progressed, researchers recognized the urgency to address the high incidence of HIV among cisgender MSM; hence, Burrell and colleagues incorporated the phone dating application *Grindr* as an additional recruitment tool (23% were recruited via *Grinder)*. Ultimately, the Burrell study eliminated females subjects from the study, reducing the final sample to 105 MSM.

Findings showed 27.6% were between 18–30 years old with a mean and median age of 39.5 and 38.4 respectively, 33.7% were Caucasian, 93.3% and 47.1% were college graduates. Data revealed subjects had a mean of 73.4 lifetime anal intercourse partners, with 6.7 anal intercourse partners in last year, 1.9 receptive anal encounters in the last 14 days, and 2.0 insertive anal acts in the previous 14 days. Researchers failed to supply standard deviations along with mean values. While the number of life time partners

could place a person at greater risk for exposure to sexually transmitted infections, these findings did not *predict* whether subjects would ultimately engage in unprotected sex.

Beymer et al. (2014) conducted a quantitative, cross-sectional study using a convenience sample of 7,184 HIV-negative MSM to investigate whether those who used geosocial networking applications (GSN apps) had greater STD/HIV incidence compared to those who met sexual partners in person or via internet. Participants were recruited from among patients receiving sexual health services at the L.A. Gay & Lesbian Center. The sample was 52.8% Caucasian, 27.9% Hispanic, 5.1% Black, 10.7% Asian and 3.6% Other. About one-third of respondents (33.2%) fell between the ages of 30 - 39 years old, with more than half (52.2%) being college graduates.

Researchers found phone app users had greater odds for testing positive for gonorrhea (OR 1.25; 95% CI: 1.06-1.48 $p < 0.0001$) and chlamydia (OR 1.37; 95% CI: 1.13-1.65 $p < 0.0001$) compared to those who met partners through in-person methods only; however, no significant differences for syphilis and HIV incidence were found. Methamphetamine and cocaine users had greater odds for gonorrhea than non-users (AOR: 1.84; 95% CI: 1.45–2.34). In addition to the higher odds ratios for sexually transmitted infections found among phone app users compared to those who used offline means to connect with sexual partners, bivariate test results revealed greater abuse of illicit substances (ecstasy and cocaine) among app users. Concerning the study's limitations, over half of the sample were White, college educated respondents. On a positive note, this project was the first of its kind to focus on the the impact of phone dating applications and MSM sexual health; consequently, it provides a valuable template for future projects in other U.S. locations.

Lehmiller and Ioerger (2014) conducted a cross-sectional quantitative study using a convenience sample of 110 cisgender MSM subjects to compare the sexual health history, behavior and personality traits of phone dating app users with those who used other methods to connect with potential sex partners. Particpants were recruited from online ads posted on Facebook/Twitter feeds for sexuality interest groups and LGBT student center listservs at U.S. universities. Respondents completed an online survey, indicating method preference, amount of time spent in pursuit of potential partners, number of oral/anal encounters and if any hook-ups evolved into romantic relationships. Three measurement tools were used: *Sensation Seeking Scale* (BSSS), *Sexual Opinion Scale* and *The Self-Control Scale*. Participants self-reported: (1) how many MSM partners (oral/anal) in the past month, three months and over one's lifetime, (2) how many unprotected receptive/insertive anal encounters (within past three months), (3) how often tested for HIV/ STDs, and (4) ever diagnosed with HIVor STD (which ones).

Findings revealed a little over half of respondents were app users (54.5%) with the remaining subjects being non-users. The vast majority (77%) preferred *Grindr* as the phone app of choice. On average, users logged on 3.03 times daily (*SD*= 3.27), spending on average 11.75 minutes (*SD* = 17.32) each time they logged on.

App users reported a median of four oral and two anal encounters within a three-month period. One-third of app users (32.8%) revealed at least one hook-up led to a romantic relationship. App users and non-app users did not differ in recent frequency of unprotected insertive anal intercourse, (U= 1509.50, p =.875, r = .01), or unprotected receptive anal intercourse, (U=1488.00, p= .613, r = .05). No differences between app and non-app users were found in frequency of HIV testing (F (1, 100) =0.3 2, p=.571) or

frequency of being tested for other STDs (F (1, 103) =1.81, p=.182). While respondents did not differ in likelihood of being diagnosed with HIV, [X2 (1, N= 109)= 0.20, p = .659], app users (35%) were more likely than nonusers (14%) to be diagnosed with an STD, [X2 (1, N =109) = 6.34, p= .012]. App users reported more life-time sex partners than non-users (U= 680, p,.001, r =.47). There were no measureable psychological differences for: erotophilia (F (1, 104) =0.65, p=.423), sensation seeking (F (1, 104) =0.00, p=.953), or self-control (F (1, 103)= 0.17, p=.680).

Lehmiller's team was unable to determine whether phone apps predicted high-risk behavior *OR* whether those who engaged in high-risk behavior merely merely gravitated to phone dating apps. These researchers suggested the sense of immediacy and the potential for instant sexual gratification associated with phone dating apps, coupled with self-selection had a "synergistic effect" on users' behavior (p.5). Researchers astutely suggested certain personality disorders informed risk-taking behaviors among some app users, such as sexual compulsivity. These obervations warrant further investigation.

Goedel, Krebs, Greene and Duncan (2016) evaluated associations between weight perception, body dissatisfaction, and self-objectification with sexual behaviors, using a NYC-based convenience sample of 92 MSM phone app users recruited from *Grindr.* An online survey collected demographic data (age, height,weight, sexual orientation, race/ethnicity, relationship status, education level, employment status and annual income). Four measurement tools were used: 1) *National Health and Nutrition Examination Survey* (measures perception of weight), 2) *Male Body Attitudes Scale* (measures body dissatisfaction), 3) *Trait Self-Objectification Questionnaire* (measures self-concept of 10 bodily features) and 4) *Sexual Sensation Seeking Scale* (gauges

propensity to seek out novel/risky sexual stimulation). Subjects reported HIV-status and whether they engaged in receptive and/or insertive anal intercourse within the past 6 months, and how many (receptive and/or insertive) unprotected anal sex partners.

Demographic findings revealed over half of respondents (55.5%) were under 30 year old, 63.0% were White/Caucasian; 19.6% Black/African American and 9.8% Hispanic/Latino, with 25% being in a relationship. Concerning education, employment and income levels, 51.2% completed a Bachelor's degree or higher, 72.8% were employed (full or part-time) and 77.8% reported earned under $55,000 per annum. The vast majority of respondents (84.5%) were HIV-negative, 8.7% HIV positive and 6.5% unknown HIV status/never tested.

The Goedel team used ANOVA test to assess correlations between *Sexual Sensation Seeking Scale* scores, perceived weight classification and sexual behaviors. Findings indicated those who perceived themselves as being *overweight* (43%) had the highest *sensation seeking* mean scores = 31.70 (*SD* = 4.37). This group likewise scored *highest* for number of unprotected receptive anal intercourse partners: mean = 2.46 (*SD* = 6.14) and unprotected insertive intercourse partners: mean = 2.34 (*SD* = 2.84). This study drew attention to the impact of negative body image, which fueled by the fear of rejection, left these vulnerable persons feeling powerlessness to negotiate for safe sex practices (condom use); thus, increasing their risk for HIV/STDs.

Whitfield et al. (2017) conducted a quantitative study, using a convenience sample of 545 cisgender MSM, to determine whether the method used to locate potential sexual partners would predict condomless anal sex (CAS). This study was part of a larger project, *National HIV Behavioral Surveillance* (NHBS). funded by the Centers for

Disease Control and Prevention (CDC). Authors conducted a secondary data analysis of the 2011 NHBS survey for the city of Denver, Colorado. Concerning sampling, the NHBS had a unique recruitment protocol, whereby project staff approached prospective subjects at public venues. The survey instrument was administered through face-to-face interviewers, using handheld tablets. The survey asked about sexual behavior, sexual partner characteristics, substance use, STI history, HIV testing and use of pre-exposure prophylaxis (PrEP) medication.

While the vast majority (74.3%) reported having anal sex in the past 12 months, findings revealed neither the use of the Internet or phone dating app predicted CAS (ZWald = .41, p = .52; ZWald = .80, *p* = .37). Only racial identity was statistically significant for predicting CAS: Hispanic/Latino MSM were (0.46) and the "other" racial group (0.27). Concerning the selection of the city of Denver, Colorado for study location was a well-thought out choice because this urban environment mirrors our nation's HIV epidemiological profile= Colorado 2013 statistics recorded 328 newly diagnosed HIV cases with 66.2% among MSM. Following national trends, Black and Hispanic MSM are at greater risk for new HIV infection, the Colorado rates revealed Black MSM represented 11% of new HIV cases and Hispanic MSM were 28%.

Wang et al. (2018) conducted a systematic review and meta-analysis of 25 prior studies to evaluate the use of phone dating application and the risk of sexually transmitted diseases (STDs) among cisgender MSM dating app-users. Findings indicated app-users had a greater number of sexual partners and engaged in unprotected sex. The Wang team concluded app-users were more likely to be diagnosed with syphilis, gonorrhea and

chlamydia than were non-users. Findings likewise indicated substance abuse was a strong predictor for risk-taking behavior.

The Wang team did not elaborate on what other methods were used to connect with potential sex partners (*i.e,* Internet or in-person crusing). Explaining why this study was lacking in this area, the Wang team claimed the 25 studies analyzed were "descriptive," meaning they lacked a control group (*i.e.* non-users) (p. 8) . Lacking the inclusion of a control group, it is impossible to draw an accurate comparison between app vs. non-app users. Interestingly, researchers asserted app-users were more likely to utilize health resources such as HIV testing; however, it is not possible to determine whether app users were more mindful about sexual health without having a non-app control group. Wang's team suggested dating apps could be used to educate and inform subscribers about HIV/STD prevention, but they did not elaborate on how this potential service might be implemented.

Summary of Findings. While Burrell (2012) found app users have more lifetime sex partners; however, these findings alone cannot predict whether app users were at greater risk for engaging condomless anal sex or other risk-taking sexual behaviors. Gathering such vital data could have yielded a more comprehensive evaluation of subjects' sexual behaviors. On a positive note, researchers found *Grindr* to be an efficient and effective tool for recruitment tool to gather MSM population in Los Angeles County.

Likewise, Lehmiller and Ioerger (2014) found app users had more life time partners; however, app and non-app users did *not* differ in recent frequency of unprotected insertive/receptiive anal intercourse. Whitfield et al. (2017) found neither

Internet use or phone apps were predictive of unprotected sex. Only racial identity predicted condomless sex, with Blacks and Hispanics being at greater risk. In contrast, Beymer et al. (2014) observed higher odds ratios among app users for STIs as well as greater odds ratios for substance abuse (ecstasy and cocaine) during sexual encounters. The recruitment location used by the Beymer study may have caused sample bias because subjects were receiving HIV/STD testing/treatment; hence, it coule be assumed that subjects did engage in unprotected sex and were already infected. Goedel et al. (2016) found negative self-image seriously contributed to risk-taking behavior, those who considered themselves overweight (43%) had the highest mean scores for *sensation seeking* as well as the *highest for number of unprotected RAI and IAI partners*. Wang et al. (2018) asserted app users were more likely to be diagnosed with STDs; however, these claims lacked merit because none of the studies reviewed contained a control group of non-app users.

PANDEMIC RISK-TAKING BEHAVIORS AND PHONE DATING APPS

Several US-based and international studies conducted research concerning the impact COVID-19 on MSM population. The U.S. study conducted by Sanchez et al. (2020) suggested the use of phone dating apps to connect with potential sex partners contributes to reckless sexual behaviors among some users. placing this vulnerable population at increased risk for COVID-19 infection. Sanchez' findings revealed a little over half (51.3%) modified sexual behavior, reporting a *decrease* in the number of sexual partners during the height of the COVID-19 pandemic; however, a large percentage of app users did *not* alter sexual activity to stay safe, these reported *no change* with a very small percentage (0.9%) who claimed an *increase* in the number of sex partners. Concerning the use of phone dating apps to facilitate in-person sexual encounters, 48.8% reported a *decrease* in use, while 44.9% reported *no change* and 5.8% *increased* usage.

McKay et al. (2020) investigated COVID-19 safety guideline adherence from among a U.S. sample of 728 gay and bisexual cisgender men. Researchers queried subjects about any significant changes to sexual behavior and partner selection during the pandemic. Nine out of ten subjects reported having either one sexual partner or no sexual partner within the past 30 days, suggesting a significant *decrease* compared pre-pandemic sexual behavior. Respondents took more advantage of virtual sex activity as meant to reduce COVID-19 risk. Although adherence to social distance guidelines was reported, researchers voiced concern about the sustainability of such changes over the course of the pandemic.

Two recent international studies were published concerning the impact of COVID-19 in the countries of Brazil and Portugal. Beginning with the study conducted by de Sousa et al. (2021) among a convenience sample of 2,361 MSM (1,651 in Brazil, 710 in Portugal) to investigate the magnitude of casual sexual encounters occurring outside subjects' homes during the sheltering in place order issued by the respective governments of Brazil and Portugal to control the spread of COVID-19.

Findings showed over half (53.0%) continued to pursue casual partnering outside of the home, despite the national sheltering order. Findings for the Brazil group showed the factors that increased the odds for casual partnering were *having group sex* (aOR 2.1, 95% CI 1.3–3.4), *living in an urban area* (aOR 1.6, 95% CI 1.1–2.2), feeling trapped by shelter order, which had a high impact on daily life (aOR 3.0, 95% CI 1.1–8.3), *having casual as opposed to steady partners* (aOR 2.5, 95% CI 1.8–3.5), and *not decreasing the number of partners* (aOR 6.5, 95% CI 4.2–10.0). Findings for the Portugal group revealed *the odds of engaging in casual sex increased with use of Facebook to locate* partners (aOR 4.6, 95% CI 3.0–7.2), *not decreasing the number of partners* (aOR 3.8, 95% CI 2.9–5.9), usually finding partners at in-person venues (pre-COVID-19) (aOR 5.4, 95% CI 3.2–8.9), feeling isolated had a high impact on daily life (aOR 3.0, 95% CI 1.3–6.7), and HIV-positive serostatus (aOR 11.7, 95% CI 4.7–29.2). Taking PrEP/Truvada to prevent COVID-19 was reported by 12.7% of MSM.

Researchers concluded the sheltering order put in place by Brazilian/Portuguese governments to protect citizens from COVID-19 did *not* deter more than half subjects from engaging in direct sexual contact. In both cases, feelings of isolation were a factor for seeking casual sexual companionship.

Torres et al. (2020) conducted an online survey in Brazil concerning the impact of social distancing and adherence to community measures imposed by the government. A convenience sample of 3,486 cisgender MSM and transgender/non-binary subjects were recruited through social media means (*Hornet, What'sApp* and *Facebook*). The vast majority (97.5%) of the same were cisgender males[1], with 84.9% identifying as gay and 12.6% as bisexual. A very small percentage identified as transgender, with 0.8% being transmen and 0.3% being transwomen. Demographic data indicated subjects' median age was 32 years with 55.3% identifying as White, 14.2% Black, 28% Mixed-Black (pardo), Native (1%) and Asian (0.7%).

Finding showed the majority (65.3%) indicated a *decrease* in the number of sexual partners, 31.4 % indicated *no change* in number of partners and 3.4% reported an *increase* in partners; while many (45.4%) reported *sexual abstinence* due to imposed civil restrictions; among these, 28.8% implemented virtual sex. The vast majority (76.8%) who sought out casual partners did so through online means. Most subjects (80.2%) were not taking PrEP with half of these subjects (51.6%) reporting a higher number of condomless receptive anal (RA) encounters, more anonymous partners, and transactional sex acts (exchange of sexual favors for money) compared to non-PrEP counterparts of which less than a quarter (23.95%) reporting condomless RA encounters with casual partners.

Carrico et al. (2020) conducted a study to evaluate the increased risk of COVID-19 among HIV-positive MSM who used methamphetamine (crystal meth) during sex encounters. This popular phenomenon is commonly referred to as party and play (code

[1] Cisgender denotes an individual whose personal identity and gender corresponds with birth sex (male/female).

term known among MSM app subscribers to invite others to participate in in drug-infused serial and/or simultaneous partnering. The Carrico team (2020) pointed to the use of crystal meth was a "potent driver of the HIV/AIDS epidemic," while raising serious concern about the "resurgent epidemic" of methamphetamine use throughout the United States, contributing to an increase in new HIV/STD cases (p. 3020).

Summary of Findings. Despite the paucity of studies investigating MSM risk taking behaviors during the height of the COVID-19 pandemic, meaningful research did come to the surface. Concerning adherence to social distancing guidelines, McKay et al. (2020) found U.S. subjects made a positive effort to reduce the number of sexual partners and adhere to COVID-19 safety guidelines; however, researchers questioned whether these changes were sustainable over the course of the pandemic. International researchers, Sanchez et al. (2020), de Sousa et al. (2020) and Torres et al. (2020) painted a grim landscape in Brazil and Portugal, where social distancing mandated by governmental authorities was ignored by more than half of subjects who continued to engage in casual sexual encounters, facilitated by the use of phone dating apps to facilitate hook-ups during the height of the COVID-pandemic. Both researchers Carrico et al. (2020) and Patten et al. (2020) pointed to the ongoing use of illicit substances, known to phone app users by the code term party n' play, which likely contributed to reckless sexual behavior during the COVID-19 pandemic.

INTERVENTION STRATEGIES USING DIGITAL TECHNOLOGY

Chiasson et al. (2009) conducted a quantitative, quasi-experimental study to determine the efficacy of a behavioral intervention strategy to raise awareness about unprotected sex, alcohol/drug abuse and HIV-risk. A convenience sample of 442 MSM

subjects were recruited via banner ads placed on gay websites. The Chiasson team created a one-group pretest posttest design, using the 9-minute video entitled, *The Morning After* as an intervention tool.

At baseline, subjects were surveyed using an online questionnaire about personal sexual history, drug/alcohol use, HIV disclosure/testing). Three months later, subjects viewed *The Morning After*, followed by a post-screening questionnaire of viewer's intentions to change sexual behavior. An additional three months after the video viewing, a follow-up behavioral questionnaire survey was completed. Findings revealed significant behavioral differences at 3-month follow-up to video screening. Participants were more likely to disclose serostatus to partners (odds ratio [OR] 3.37, (CI =1.20-5.95), p>0.001).

In addition, participants were less likely to engage in unprotected anal intercourse during last sexual encounter compared to high-risk behavior reported at baseline (odds ratio [OR] 0.55 (CI = 0.38_0.79) p>0.001. Although *the Morning After* may seem rather dated by today's standards, it serves as a template for intervention strategies to design educational apps featuring safe sex practices and digital access to local HIV/STD screening/treatment resources.

Holloway et al. (2014) conducted a quantitative study to to assess user patterns and motivations for *Grindr* use to create and adapt smartphone-based HIV prevention for young MSM subscribers. A convenience sample of 195 young MSM *Grindr* subscribers were recruited by research assistants who created personal profiles (containing the institution's name and identified the recruiters as researchers). Recruits ranged between the ages 18–24 years old and resided near West Hollywood/Long Beach, CA. Mean age

of participants was 22 years (*SD*=1.7) and the vast majority had completed at least some college education (85%). Forty (40%) percent identified as White, 32.8% as Latino, Mixed 12.70%, 9.7% as Asian/Pacific Islander, and 4.6% Black/African American. Two-thirds reported were employed and 62% with household earnings over $20,000 per year.

Subjects were asked about both lifetime and current use of dating websites and geosocial smartphone apps. Frequency of *Grindr* and *Facebook* use was assessed with a six-point Likert-type scale, ranging from once a week to 5 or more times a day. Participants were asked to indicate which naked body parts they showed on personal dating profiles. Participants were asked to indicate reasons for using websites/apps, as follows: (i) make new friends, (ii) to meet people to hook up with, (iii) to meet people to date, (iv) to "kill time," (v) to connect to the gay community, (ix) to find people to use substances with, (x) to communicate with face-to-face friends, (xi) to connect with people from the past and (xii) to connect with family. Subjects were allowed to detail other reasons (p. 5). Participants were asked if they used to Internet to access HIV/STD /testing info. Subjects were asked to indicate where they went for HIV/STD info, such as doctor, family, friends, health clinics, etc. Participants were asked about prior experience with HIV prevention classes training (except school-based) and willing to take a class about HIV prevention in-person and/or online.

Findings indicated over one-quarter (27.57%) used *Grindr* to find a sex partner, one-fifth (20%) sought new friends, slightly less than one-quarter (23.24%) wanted to date, while less than almost a quarter (22.16%) wanted to kill time and the remainder (7.3%) used *Grindr* to connect to the gay community. On a positive note, the study underscored the serious potential for using *Grindr* as a sexual health education tool with

the vast majority (80%) expressed a willingness to participate in app education. However, more research is needed to find out what types of educational app programs can be designed/implemented.

Pennise et al. (2015) conducted a quantitative study, using a convenience sample of 97 MSM to demonstrate how smart phone dating apps could be used by public health departments to reduce the risk of HIV/STD transmission. In 2012, the Monroe County Department of Health (MCDPH) began using state-issued smartphones during the interviews with infected patients to capture information from the original websites and/or phone apps used to locate prior sex partners. From February-May 2013, the MCDPH conducted both traditional interviews of newly reported cases and cluster interviews[2] with uninfected members of the social network. Interviewees were asked to log onto *Adam4Adam, Jack'd, Facebook*, and *Black Gay Chat Live* using the investigator's official smartphone. Almost all subjects were cisgender male (98%), Black (81%), with more than half (54%) under the age of 30.

During this four-month period, the MCDPH was able to identify ninety-seven individuals and 117 sexual dyads. As a result, seven new cases of disease were diagnosed. Researchers concluded smartphone technology greatly enhanced the MCDPH's ability to locate and inform potentially infected individuals during field interviews to be properly tested.

[2] Cluster interviews are designed for use by state/local HIV/STD Disease Intervention Specialists (DIS) who interview individuals who have sexually transmitted diseases and conduct Partner Services. The intent of this interview activity was to initiate counseling, testing, referral, and potentially medical services of partners and clusters of Sexually Transmitted Infections (STI) positive, including HIV/AIDS and other related conditions.

Levy et al. (2015) conducted a quantitative study to assess the potential use of smartphone applications for HIV prevention/healthcare purposes, using a sample of 93 Black cisgender MSM (residing in the District of Columbia area). Respondents completed an anonymous online survey to assess demographic, behavioral and healthcare characteristics, including thoughts about the potential use of phone apps to connect to HIV testing/treatment.

Findings indicated less than half (43%) were age 30 (mean=34; *SD*=10.3; range: 21–69) with one-quarter (26%) being HIV+. Most (95%) subjects owned a smartphone. The majority (61%) accessed public health clinics, while half (50%) had access to a primary care doctor and 24% had access to an acute-care setting. Concerning quality of healthcare, 93% trusted their providers and 96% felt these were competent. Regarding access to HIV testing/care, 88% of HIV negative subjects were tested within past year and 30% were taking PrEP. Some healthcare disparities surfaced with 5% finding the providers lacked respect for sexual minorities and 16% experienced racial discrimination and 7% felt stigmatized for other reasons. On a positive note, 87.1% indicated they would use the app to access HIV testing/care. Findings revealed certain subjects would benefit most from the app, particularly those who had not seen a primary care physician within the last year or lacked health insurance.

Zou and Fan (2016) conducted a systematic review and meta-analysis to determine the socio-demographic/sexual characteristics of MSM phone app-users and the potential use of phone apps to promote STD testing/sexual healthcare. Findings identified 14 studies with the vast majority (n=12) conducted in large U.S. cities and the remainder (n=2) in Australia and China. Half of the studies exclusively recruited subjects

via phone apps; while the other half recruited via MSM websites, sexual health clinics and other MSM venues. Findings revealed MSM phone app-users were primarily young, Caucasians with higher education and income levels. App-users had greater rates of risky behaviors, including lifetime sexual partners, unprotected anal sex, substance abuse and higher rates of STDs. The Zou team called for longitudinal studies to explore behavioral changes and HIV/STD incidences among MSM app-users versus non-app-users and the value of using phone apps to promote and connect MSM with HIV/STD testing/sexual healthcare.

Summary of Findings. Chiasson et al. (2009) found intervention strategies can be successfully used to change perceptions/behaviors about safe sex practices, specifically disclosure of HIV/STD status, regular HIV testing/ treatment. Holloway et al. (2014) found popular dating apps such as *Grindr* had excellent potential as a sexual health tool. Pennise et al. (2015) observed smartphones were successfully utilized by local New York State Health Department authorities to locate, test, and treat infected persons. Levy et al. (2015) found phone apps could be effectively used as intervention tools to assess HIV testing/treatment for MSM of color, particularly those who did not have recent contact with a primary care doctor or lacked healthcare insurance. Zou and Fan (2016) asserted phone dating apps were efficient, effective tools to identify high-risk MSM population(s) and provide these with life-saving information and further mentioned *Scruff* (MSM dating app) already provides user access to physical/mental health services.

CONCLUSION

While not exhaustive, this literature review identified gaps in available academic research. Most prior studies explored the use of the Internet and high-risk sexual

behaviors among MSM; however, most of these research efforts only utilized a quantitative approach to gather data. While past findings indicated some Internet users did engage in high-risk behaviors, but most researchers agreed the Internet only expanded access to potential sex partners. Perhaps the Internet atmosphere of online anonymity fueled recklessness; however, a significant number of studies indicated illicit drug use and other psychological factors were at play. There are several studies which explored use of phone dating apps and risk-taking behavior among MSM users. Some suggest the speed, convenience and proximity afforded to phone app users fuels a heightened desire for instant gratification and coupled with poor judgment, recklessness ensues. Findings indicated some app users did engage in high-risk sexual behaviors and again, patterns of substance abuse were observed.

The isolations associated with recent COVID-19 pandemic caused some to experience heightened anxiety and depression, which led some app users to ignore social distancing recommendation and governmental mandates in the pursuit of sexual pleasure. Some may have reasoned the enjoyment of sexual gratification outweighs the risk for infection through direct contact. On a positive note, researchers likewise indicated phone apps protected users with cybersex alternatives. Furthermore, apps provided COVID education and may have turned the tide away from harmful practices. App resources may likewise prove helpful for COVID testing and virtual health resources during pandemic when clinics are closed.

Most of the studies cited in the literature review gathered quantitative data to identify and measure the extent of the problem, but this type of design fails to explain *why* the problem persists. What appeared to be lacking in the current body of literature is

sound mixed-method data to successfully capture current trends and provide insight into relevant psychosocial factors (mental health, sexual health beliefs and alcohol/substance abuse) influencing subjects' sexual behavioral patterns.

By gathering both quantitative and qualitative data, this study allowed subjects to explain how the method used to connect with casual partners influenced behavioral patterns and what psychosocial factors fueled risk-taking behaviors. This study successfully filled the apparent void and improved our understanding of important sexual health issues and ways to improve health outcomes with targeted intervention strategies.

CHAPTER IV: THEORETICAL FRAMEWORK

INTRODUCTION

Theory provides a valuable, solid foundation for researchers to "explain the meaning, nature and challenges of a phenomenon . . . so that we may use that knowledge and understanding to act in more informed and effective ways" (Lynham, 2002, p. 222). This study project addressed a serious health problem; namely, the disproportional percentage of MSM impacted by HIV/STDs. We examined the influence of phone dating apps on sexual risk-taking and pandemic risking behaviors alongside other means (Internet/In-Person Cruising) used to connect to potential sex partners. The two theoretical models described below opened the door to a better understanding of the psychosocial factors that inform such behaviors.

Using Theory to Inform and Guide Research: This study took a multi-disciplinary approach, incorporating these two theoretical models to explain this complex phenomenon of MSM risk-taking behaviors: 1) Addiction Model and 2) Expanded Health Belief Model. Several empirical researchers suggested certain mood and personality disorders might explain why some phone app users engage in greater risk-taking behaviors than others. Some studies observed the use of phone dating apps fueled addictive behavioral patterns; thus, diminishing the user's risk perception and protective response to avoid the harmful consequence (HIV/STDs) associated with unsafe sexual practices. Additionally, studies revealed some persons held to misinformed health beliefs/risk perceptions, which directly contributed to reckless behaviors.

THE ADDICTION MODEL

Addiction is a chronic illness that affects the brain's "reward, motivation, memory and related circuitry," causing pervasive biological, psychological and social malfunction; furthermore, this illness is characterized by the *compulsive* pursuit of reward/relief through substance abuse (drugs/alcohol) and other forms of excess (shopping, gambling, eating and sex) (American Society of Addiction Medicine, 2017, p. 1). Those who suffer with this affliction show a lack of control, impaired emotional response and diminished awareness of adverse consequences and, left untreated, this chronic disease will progress with serious mental and physical implications; furthermore, addicts may experience cycles of relapse/remission after treatment (American Society of Addiction Medicine, 2017, p. 1).

The Neurological Process of Addiction. Our brain's reward system responds readily to to enjoyable activities such as eating or sexual intimacy; thus, pleasure derived from these ordinary, everyday activities prompts the release of the neurotransmitter *dopamine* into the nucleus accumbens (a nerve cell cluster located just below the cerebral cortex), commonly known as the brain's reward center (Harvard Health Publishing, 2021). Unfortunately, the same neurobiological process that perpetuates the survival of our species can lead to the development of harmful addictive patterns and adverse consequences (Harvard Health Publishing, 2021).

Biological Vulnerabiltiy Associated with Addiction. Thanks to the advances in neurobiology and brain imaging technology, we now understand the underlying biological causes for addiction. Goodman (2009) found certain genetic and environmental factors (before and/or after birth) may render some individuals

biologically vulnerable to addictive disorders. Contrbuting factors such as "maternal gestation stress, deficient infant caregiving and childhood stress trigger the production of genetic variants (polymorphisms)," which gives rise to addictive disorders (p. 1).

Goodman (2008) found those suffering from addiction disorders present with "low self-esteem, self-centeredness, denial, rationalization, and conflicts over dependency and control." As a result, such vulnerable individuals experience "chronic stress, stress hypersensitivity, depression, and anxiety;" hence, addicts engage in repetitive behaviors that facilitate escape or avoidance of these uncomfortable affects (p.283).

The addictive process involves "an interaction of impairments" in three (3) functional systems: 1) *motivation-reward*, 2) *affect regulation*, and 3) *behavioral inhibition* (Goodman, 2008, p. 271). A defective motivation-reward system will cause those who suffer from addiction to routinely experience, "irritable tension, emptiness, and restless anhedonia" (p. 271). Consequently, such individuals are extremely "vulnerable to painful affects and emotional instability" (p. 271). Furthermore, motivation-reward system impairment drives sufferers to routinely seek out a means of escape/avoidance through pleasure-seeking activities, hence, such risk-taking behavioral patterns are "strongly reinforced" (p. 271). Finally, lack of behavioral inhibition (restraint) increases the odds that overwhelming urges for pleasure and escape (*i.e.,* gambling, excessive shopping, alcohol/drug abuse, or reckless sexual liaisons) will overshadow any concern for negative consequences (p. 271).

The Driving Mechanisms Behind Sex Addiction. Pincu (1989) observed distinct similarities between Compulsive Sexual Behavior (CSB) and chemical

dependency; interestingly, both mental health issues share "obsessive thought process, compulsive behavior and an out-of-contol cravings" (p. 64) The same *driving mechanisms* characteristic of chemical dependency was observed in compulsive sexual behavior; namely, the pursuit of "excitement, increase intolerance, feelings of withdrawal, and loss of control coupled with denial" (p. 64). CSB causes one's life to "spiral out of control" when pent-up anxiety becomes *sexualized*, leading to reckless sexual risktaking (p. 64).

Similar to the euphoric effects produced by alcohol and substance abuse, sex elicts a *short-lived high*, "allow[ing] the sexually compulsive [person] to lose himself" in the moment; but once the high wears off, *withdrawal gives way to renewed anxiety,* driving the suffering addict to seek out yet another fix to maintain a "state of equilibrium" (p. 65). The pursuit of sexual pleasure becomes all-consuming, overshadowing daily activities; thus, profoundly impacting professional/personal relationships. Rational thinking becomes "clouded" by the pressing urge for more sexual pleasure (p. 65). Persons suffering with sexual compulsivity cling to addictive patterns despite the heavy cost; refusing to accept the harsh reality of addiction, they resort to "defenses of repression, rationalizing, minimizing and intellectualizing"(p. 65). Such individuals sabatoge good health in the pursuit of sexual activity, denying the risk for HIV/STDs associated with annonymous encounters, multi-partnering and other unsafe practices.

Psychological Factors and Compulsive Sexual Behavior. Quadland and Shattls (1983) suggested sexually compulsive gay men were motivated by feelings of "loneliness, low self-esteem, problems with intimacy and closeness and . . . internatlized

homophobia" (p. 283). Elder et al. (2015) asserted low self-esteem prompts some MSM to seek sexual validation as a means of elevating low self-esteem; accordingly, the acquisition/conquest of an attractive sex partner serves as a trophy and "visual indication of [one's sexual prowess] masculinity" (p. 945). Schaef (1987) suggested sexual addiction stems from underlying intimacy issues; thus, the pursuit of sex is not used to draw closer to another person, but merely serves as "a sexual fix" (p. 10). Licoppe et al. (2016) described the driving mechanism behind CSB as an "overwhelming inner impulse dissociated from social attachments, fram[ing] the object of desire as a commodity;" hence, nnonymous liasions are usually one-night stands, with no expectations attached (p. 6). Any intimate interaction is "purely sexual, with minimum conversation," leaving participants "relationally and emotionally unaffected" (p. 6).

Psychological Issues Leading to Addiction Disorder. There are deep-seated psychological issues, inciting compulsive sexual behavior (CSB). Hartman and Zimberoff (2004) observed CSB was *not* driven by biological urges. Rather, unresolved relationship dynamics were at the root of CSB, especially among those who did not receive "empathic attunement from caregivers"(p. 8). In such cases, emotional neglect caused emotions to become "fragmented and an identity split occurs; causing a sense of shame and negative self-judgment"(p.8). Unstable childhood attachments lead to adult intimacy issues; hence, anonymous sexual encounters allow persons to remain "emotionally insulated during detached erotic encounters" (p. 8).

Narcissistic Defenses and Addictive Behavioral Patterns. Anonymous hook-ups provide the perfect arena to play out revenge fantasies. According to Albert-Puleo (1980) the concept of "narcissistic defense" allows addicts to rid themselves of

internalized, deep-seated feelings of "anger, aggression, and hostility" against one's neglectful and/or abusive parents and/or caregivers (p. 43). Addictive behaviors are actually "an early-learned defense system to protect the much-needed love object from raging hostility;" once the addict enters the "state of euphoria" one can readily express repressed infantile frustration (p. 43*)*. Engaging in compulsive sexual behavior grants instant gratification and relief from low self-esteem and frustrations associated with stunted ego development.

Addiction Disorder and Health Beliefs/Risk Perceptions. The Addiction Model alerts us to the potentially negative impact CSB could have upon one's sexual health beliefs, decisions, and actions. Those MSM who suffer from CSB may have developed an impaired perception of HIV/STD risk, leading them to minimize the severity of these life-threatening infections and other treatable infections.

Application of the Addiction Model. While the Internet expanded access to available sex partners though dating websites, today's phone dating applications provide users with the superior advantage of speed, convenience, and proximity (Rice, 2017). Lehmiller and Ioerger (2014) suggested the sense of immediacy and promise of instant sexual gratification associated with this type of digital technology, combined with self-selection, has a "synergistic effect" on app users' sexual behavior (p. 5).

Recent scientific advances in neurobiology and brain imaging technology have expanded our understanding about the underlying causes of addiction (Horvath et al, 2019). The Addiciton Model may explain why those with addictive disorders are particularly drawn to phone dating applications and how repetitive use of the application reinforces powerful addictive urges, prompting greater risk-taking behaviors. Consistent

with the work of Goodman (2008, 2009), the presence of an addictive disorder will likely lead to sexual risk-taking behavior.

THE EXPANDED HEALTH BELIEF MODEL

While the Addiction Model may explain why risk-taking may occur among sexually compulsive MSM, others who are not afflicted with such a disorder may still choose to engage in unsafe sex practices. In this instance, the EHBM helps to explain the faulty reasoning, clouding sound judgment, leading to risk-taking behaviors and negative health outcomes. We assume most individuals wish to avoid becoming infected with HIV or STDs and, most recently, the COVID-19 infection. It defies logic when we observe seemingly health-conscious, educated persons adopt flawed health beliefs, make imprudent health decisions, pursue reckless actions, and suffer easily avoidable, negative consequences.

Definition of the Model. The Expanded Health Belief Model (EHBM) explains why some individuals accept certain health beliefs and how these values serve to inform health-related decisions and behaviors (Skinner et al., 1997).

These six concepts of EHBM can readily be understood, when phrased in the following question format:

- *Perceived Susceptibility* = How great is the likelihood of becoming ill?
- *Perceived Severity* = How serious is the illness?
- *Perceived Benefits* = How effective is the action taken to avoid/cure the illness?
- *Perceived Barriers* = What are tangible/psychological costs of taking this action?
- *Cues To Action* = What indicates readiness to act?
- *Self-Efficacy* = Am I confident/able to take this action?

We assume most individuals want to avoid becoming ill; hence, we are perplexed when such persons make irrational decisions and behave in ways that put their own health and the health of others at risk. Prior studies have shown these EHBM constructs may predict sexual risk behaviors among MSM (Bauermeister et al., 2013; Volk et al., 2012; and Winfield & Whaley, 2005). To date, this model has not been used to explore sexual risk-taking behaviors among American cisgender MSM who utilize phone dating applications to connect with potential sex partners; hence, this research project was well-warranted.

HAART Medication and Unrealistic Optimism. In 1996, highly active antiretroviral therapy (HAART) became available in the United States and other developed countries. Although this medication regimen is not entirely effective in *all* HIV-positive individuals (specifically those infected with drug-resistant HIV strains), HAART has successfully decreased the incidence of AIDS-related deaths, allowing countless HIV-infected persons to lead longer lives (Quinn, 2008). Crepaz et al. (2004) suggest some cisgender MSM consider HIV/AIDS to be a less severe and threatening disease due to the availability of HAART, which has given rise to the prevalence of unprotected sex and the increased incidence of STDs.

Elforda et al. (2002) drew upon the Health Belief Model to explain the phenomenon of risky sexual behaviors observed among gay men in London, who frequented health clubs for sex-seeking purposes. Researchers hypothesized an overly optimistic belief in the efficacy of HIV treatments might reduce one's perceived risk for contracting HIV and the overall severity of the disease. While this research team could not find statistically signficicant results to link the increased rate of unprotected anal sex

with participants' optimism towards HIV treatment, they raised "the possibility that the Internet [spawned] a new risk environment" (p. 1543).

PrEP Users Minimize Risk for STDs. In 2012, PrEP (pre-exposure prophylaxis) was first approved by the Food and Drug Administation (FDA) for the prevention of HIV-infection through sexual intercourse or injectable drug use. Available under the brand name *Truvada,* this PrEP formula contains a combination of three HIV medications, emtricitabine, tenofovir, disoproxil fumarate (tenofovir DF) or lamivudine (Slowiczek, 2018). If an HIV-negative person is exposed to the virus via sexual transmission or injectable drug use, these medicines work to control the virus from becoming a permanent infection (Slowiczek, 2018). In October, 2019, the FDA approved a newer version of PrEP, known under the brand name *Descovy*, for HIV-negative persons and those at-risk for sexually acquired HIV through anal sex (Buhl, 2020). This new medication contains an improved form of tenofovir, called tenofovir alafenamide (TAF). Gilead Sciences, the manufacturer of *Truvada* promotes this new drug is safer and more effective than the original *Truvada* (Buhl, 2020).

While PrEP helped prevent the spread of HIV among high-risk populations, misconceptions about this medicine's capabilities could unintentionally "encourage irresponsible sexual practices [fueled by] a false sense of security;" thus leading to decreased condom use and an increased rates of syphilis and gonorrhea (Costa-Roberts, 2015). Interstingly, the findings of Kojimaa et al. (2016) found those MSM using PrEP were "25.3 times more likely to become infected with Neisseria gonorrhoeae, 11.2 times more likely to contract Chlamydia trachomatis and 44.6 times more likely to become infected with syphilis than those not using PrEP" (p. 2252)

Health Beliefs/Risk Perceptions and COVID-19. The elevated global rates of COVID-19 suggest a lack of accuarate information about the virus, causing individuals to ignore or defy social distancing warnings. Interestingly, Lopes de Sousa et al. (2020) found half of the 2,316 MSM surveyed, defied governmental stay-at-home orders in Brazil /Portugal. Furthermore, Sanchez et al. (2020) reported 47.3% of cisgender MSM respondents had *no change* in the casual encounters and 9% reported an *increased* the number of sex partners, despite governmental warnings to avoid intimate contact.

Some persons may reason sexual activity with a seemingly healthy partner poses no risk; unfortunately, a COVID-infected person might display no signs of infection or very mild symptoms; yet, the viral load (the amount of virus being emitted by the infected person) may be at the highest point (Chen, 2020). Lack of outward flu-like symptoms, such as a fever or cough, does not mean the person is infection-free; to the contrary, 75% of those initially designated as "asymptomatic" went on to develop COVID symptoms later (Chen, 2020). Others may believe *only* older adults are at risk for COVID-19; but these risk misconceptions are prompting the younger demographic to "mov[e] away from social distancing" and place themselves and others at risk (Stone, 2020). For example, 44% of new infections in California were found among those under the age of 35, new cases in Georgia observed among those 18-29 years old jumped to 27% and North Dakota had the highest rate of U.S. new cases among college students (Stone, 2020).

Application of the Expanded Health Belief Model. This study sought to understand how health beliefs inform one's actions, including: 1) risk perception for HIV/STD infection; 2) benefits of condom use, HIV/STD screening/treatment; 3)

accurate knowledge of antibitoic, PrEP and HAART efficacy rates and limitations; 4) willingness to inquire/disclose HIV/STD status prior to sexual encounter; 5) barriers preventing access to regular sexual healthcare; and 5) cues to action, indicating readiness and motivation to incorporate safe sex health practices. In light of the immense impact of the COVID-19 pandemic, this researcher sought to understand how health beliefs influenced respondents to accept *or* resist health advisories and government mandates to avoid direct contact with casual sex partners.

Based upon the findings of Beymer et al. (2014), we expected to find MSM app users who failed to use safe sex practices, had a history of STDs and minimize the potential severity of infection. In harmony with the work of Crepaz et al. (2004), we expected to find subjects who engaged in unprotected sex because they believed "HIV/AIDS is a less severe and threatening disease due to the availability of HAART medication" (p. 234). Some individuals took a stangely casual approach towards becoming HIV-infected, failing to understand that being HIV-positive is still a very serious illness fraught with many health challenges. In fact, the drugs used in HIV treatment have certain toxic long-term side effects, placing those under treatment at greater risk of developing certain cancers, such as Kaposi sacoma, aggressive B-cell non-Hodgkins lymphoma, cervical cancer and heart problems (Elliott, 2006; National Institute of Cancer, 2018).

CONCLUSION

As discussed, incorporation of the Addiction Model and the Expanded Health Belief Model (EHBM) into the study's theoretic framework illuminated our understanding of the underlying psychosocial factors, influencing sexual behavior and

intimate decision-making. First, we explored how addictive disorder affected some individuals, resulting in risky sexual behaviors and increasing their risk for HIV/STD infection. The addiction model helped us understand why some individuals were predisposed to addictive behavioral patterns, such as compulsive sexual behavior. We learned from prior discussed in this section that various genetic/environmental factors including, maternal gestation stress, inadequate care/abuse by parents, insecure childhood attachments and adolscent bullying can lead to various mood disorders that manifest addictive behavioral patterns. Despite being aware of the negative health outcome associated with unprotected sex acts, the powerful drive associated with the addictive process led some to ignore or minimize serious health consequences. Likewise the same addictive drive compelled some to engage in casual sexual encounters, despite stringent health advisories and govermental mandates during the height of the COVID-19 Pandemic.

The EHBM explained why some MSM did not believe certain negative health outcomes associated with risky sexual practices would affect them. For some, overconfidence in the efficacy of prophylactic medication (*PrEP*) and highly active antiretroviral therapy (HAART) led some to ignore safe sex practices. They did not consider how seriously one's life is impact once infected with HIV coupled hidden health risks/ long-term complications associated with prolonged use of HAART medication. Further, many endorsed a quick trip to the doctor and a dose of antibiotics provided a 100% guaranteed cure rate, but these failed to realize certain strains of STDs are resistant to antibiotic treatment.

Finally, EHBM helped us to understand why COVID-19 cases and deaths continued to increase on a global schale; those rising numbers suggested widespread ignorance regarding this deadly virus. Some believed, lack of outward flu-like symptoms posed no risk for infection;. Data showed this perception was simply not true; in fact, asymptomatic individuals were still contagious. Others believed only older persons were vulnerable to the COVID virus, while younger persons were immune to infection. Recent studies revealed these faulty beliefs influenced some to reckly engage in anonymous sexual encounters during the height of the COVID-19 pandemic, using phone dating apps to extend invitations to underground parties and one-on-one hook-ups.

CHAPTER V: RESEARCH QUESTIONS AND HYPOTHESES

INTRODUCTION

The use of phone dating applications has become a global phenomenon, granting seemingly unlimited access to a sea of potential sex partners. Formerly trendy hook-up bars/clubs and online gay chat rooms have waned in popularity due to the amazing speed, convenience and proximity associated with phone dating applications. This researcher suggests the lure of *instant sexual gratification,* now available through digital technology, prompts many pleasure-seekers to act with irrational haste, with little thought for negative consequences resulting from sexual risk-taking behaviors. Hence, this study provided a timely response to the serious, ongoing sexual health disparity impacting cisgender MSM. By examining the relationship between the use of phone dating applications to connect with potential sex partners and high-risk sexual behaviors among men who have sex with men (MSM) compared to other means use to connect (Internet and in-person venues), we were able to determine whether the medium directed contributed to greater risk-taking behaviors.

Our investigation explored relevant psychosocial factors, such as perceptions/health beliefs and mental health issues (depression/sexual compulsivity); predicted high-risk sexual behaviors. The impact of the COVID-19 pandemic, led this researcher to question how these factors prompted some to engage in pandemic risk-taking behaviors despite government warnings and mandates.

This study sought to answer the following three research questions and test related hypotheses:

Research Question #1: To what extent do certain demographic characteristics of MSM affect the method used to connect with potential sex partners?

Hypothesis #1: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to be HIV negative, young, Caucasian, college-educated and earn more than $75K per yea (*See,* Appendix A: *Relationship between Dependent and Independent Variables*)

Research Question #2: To what extent does the method used to connect with potential sex partners influence high risk sexual behaviors, controlling for these psychosocial factors: (i) mental health issues (depression/sexual compulsivity), (ii) alcohol/substance abuse and (iii) health beliefs/risk perceptions?

Hypothesis #2: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in High-Risk Sexual Behaviors[3], when controlling for Mental Health Issues (Depression[4]/Sexual Addition[5]); Alcohol/Substance Abuse and Health Beliefs/Risk Perceptions.

Research Question #3: To what extent does the method used to connect with potential sex partners influence COVID-19 Risk-Taking Behaviors[6], when controlling for

[3] High Risk Sexual Behaviors, as evidenced by: a) higher number of sexual partners (with the last year), b) higher number of unprotected oral/anal encounters (within last year), c) failure to disclose HIV/STD status to partner(s); d) failure to use PrEP to protect against HIV, e) history of multiple STDs, f) serial/multi partnering, g) anonymous partnering and h) Offer/Solicit Sex for Money.

[4] Depression level was measured by *Beck's Depression Inventory*.

[5] Sexual Compulsivity Level was measured by *Sexual Compulsivity Test (SAST-R)*

[6] Pandemic Risk-Taking Behaviors, as evidenced by: a) face-to-face sexual encounters; b) do not use phone apps for virtual encounters, c) multi-partnering (group/serial) and d) Offer/Solicit Sex for Money.

Mental Health Issues (Depression/Sexual Compulsivity); Alcohol/Substance Abuse[7] and Health Beliefs/Risk Perceptions[8].

Hypothesis #3: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in COVID-19 Risk-Taking Behaviors (*See,* Appendix A, *Relationship between Independent and Dependent Variables,* which illustrates how each of independent varviables (IV) impact the associated dependent variables (DV)).

[7] Alcohol/Substance Abuse, as evidenced by a) excessive alcohol use (more than 5 drinks); (b) chem-sex (also known as, party and play) and c) exchange of sexual favors for drugs.

[8] Health Beliefs/Risk Perceptions, including: a) Not Feeling at Risk for HIV, b) Not Feeling at Risk for STDs, c) Believes PrEP is 100% Effective Protection from HIV, d) Believes Antibiotics are 100% Effective against STDs, e) Not Feeling at Risk for COVID-19, f) Believes Asymptomatic Persons Cannot Transmit COVID-19 and g) Believe Only Older People are at Risk for COVID-19

CHAPTER VI: RESEARCH METHODOLOGY

INTRODUCTION

In response to CDC (2021) findings regarding an elevated risk of HIV/STD infection rates among the cisgender MSM population, this timely study sought to investigate whether those who used phone dating applications for sex-seeking purposes engaged in greater risk-taking behavior than those who use other methods (Internet or public meeting places) to connect with potentional sex partners. In addition, this investigation explored risk-taking behaviors during the COVID-19 pandemic to determine whether this vulnerable population was being influenced through the use of phone dating apps to resist/ignore stringent health department recommendations to avoid direct sexual contact during this epoch global health crisis. This study considered certain psychosocial factors, including: (i) mental health issues (depression/compulsive sexual disorder), (ii) alcohol/substance abuse and (iii) health beliefs/risk perceptions to understand why this population is being sorely impacted by HIV/STDs and could be at heighted risk for COVID-19. While not generalizable to the larger cisgender MSM population, the data gathered provided a unique insight into the MSM dating scene and explained why some MSM were more likely to engage in high-risk sexual behaviors than others who utilized the same method to connect with potential partners.

RATIONALE FOR THE MIXED-METHOD APPROACH

We believe the mixedmethod research approach offers the best of all worlds, capturing both quantitative and qualitataive data. Unlike quantitative reseach, which only captures a single data set; this design expanded our ability to explore of the complex nature of study problem. Furthermore, this design provided a more comprehensive

means to answer intricate research questions and test-out hyphotheses (Creswell & Plano-Clark, 2011). While prior studies described in the literature review provided an excellent foundation and the impetus for this present endeavor, the majority of studies relied solely on a quantitative approach to measure subjects' attitudes/ behaviors through published test instruments and questionnaires. Furthermore, the vast majority of available research only investigated the relationship between Internet technology and sexual risk-taking behavior. Clearly, there was a significant gap in this area of behavorial research, which requires an investigation of current trends and advances in digital technology and its impact on human sexual behaviors.

One of the most distinct advantages to mixed method research is the potential for *triangulation*, which allows researchers to clearly identify and examine various aspects of the phenomenon under consideration, approaching it from various vantage points through implementing various methods and techniques (Creswell & Plano-Clark, 2011). Successful triangulation requires thorough analysis of the type of data provided by each method used, including examining its strengths and weaknesses. By combining quantitative and qualitative data, this researcher was able to achieve a deeper understanding of human sexual behavior and the unique influence digital technology has upon the intimate decision-making process. We were able to delve into the relevant psychosocial factors at play in risk-taking behaviors. Clearly, we were able to achieve our goals through this mixed-method design, which served to enhance the "breadth and depth of our understanding" (Creswell & Plano Clark, 2011, p. 5).

Types of Mixed-Method Design. Creswell and Plano Clark (2011) described several types of mixed-method design and the benefits/challenges of each approach, as follows:

1) *Convergent Parallel Design* gathers and analyzes both quantitative and qualitative data during a *single phase*. Although both strands of data are analyzed independently, each is given equal priority, with the results being mixed during the overall interpretation. This design is most helpful to researchers who seek to discover the convergence, divergence, contradictions as well as relationships between the two sets of data.

2) *Explanatory Sequential Design* consists of a two-phase process, with quantitative and qualitative data being gathered at *separate times*. During the first phase, the quantitative data is collected and analyzed, allowing the researcher time to identify which specific results require further explanation. Essentially, the qualitative study *hinges* upon the quantitative results, with the prior set of data taking priority. This approach is preferable when test instruments are not available or need to be developed, the variables are unknown and there is no guiding theory/model in place.

3) *Embedded (Nested) Design* is a type of mixed method which includes the collection of both quantitative and qualitative data, but one data type takes on a primary role to guide the overall project while the other data plays a supportive role within the overall design. An Embedded Design can use either a one-phase or a two-phase approach for the embedded data, and the quantitative and qualitative data are used to answer different research questions within the study.

Rationale for Implementing Exploratory Sequential Design. For purposes of this study, *explanatory sequential design* was carefully chosen because it provided several distinct advantages. Firstly, the two-step format was easy to implement because only one type of data was collected and analyzed at a time. Given its simplicity, explanatory sequential design was considerably more cost-effective, enabling this researcher to gather and analyze data without the need to assemble and compensate a research team. Utilizing explanatory sequential design helped this researcher to "assess and explain trends and relationships with quantitative data" (Creswell & Plano-Clark (2011. p. 82). Furthermore, the "clear delineation" between the quantitative and qualitative segments made it easier to write the final report. In conclusion, this type of design "len[ds] itself to emergent approaches," permitting the researcher to adapt the qualitative phase based upon the findings obtained during the initial quantitative phase (Creswell & Plano-Clark, 2011, p. 83).

Managing Inherent Challenges to Mixed-Method Approach. Creswell and Plano-Clark (2011) explained there are inherent *challenges* associated with the use of *explanatory sequential design*. Firstly, the researcher spent a considerable amount of time completing all phases of data collection and analysis: however, this resource was managed by restricting the sample size (*i.e.,* 42 MSM were recruited for Phase I and 11 participants were selected for Phase II). Secondly, the researcher had to possess requisite knowledge and skills associated with the use of "measurement instruments and closed-ended attitudinal scale questions" as well as "the ability to use and interpret statistical analyses" (p. 82).

QUANTITATIVE DATA COLLECTION AND ANALYSIS

Participant Eligibility Criteria. A non-probability purposive sampling strategy was used to collect data from subjects who meet the following eligibility criteria: 1) cisgender male (defined as an individual who has the biological sex and current gender identity of male); 2) identified as heterosexual (MSM = man who has sex with men) , gay, bisexual and had sexual contact with another man over the past year; 3) resided in New York City; 4) fit within the age range of 18 to 60 years old; 5) regularly used and favored one of the following methods for locating and connecting with potential sex partners: (i) Internet; (ii) In-Person; (iii) Phone Dating Applications and 6) was willing to participate in both phases of the study, consisting of quantitative and qualitative survey.

Sample Recruitment and Cost. Due to COVID-19 restrictions and needed safeguards, MSM subjects were recruited through the following means: (i) paid print and digital ads were placed in the poplar MSM Magazine *Get Out!* for the months of Feb-March 2021 *(See*, Appendix G), (ii) four (4) digital ads placed on *Craigs List,* and (iii) snowballing with referrals made by word of mouth. These varied recruitment efforts ensured a diverse sample pool, which reflected the multi-faceted MSM population in New York City and the popular methods used to connect with potential sex partners (phone apps, Internet and in-person venues). Interested participants were directed to contact researcher through a dedicated email address: msmphoneappstudy@gmail.com. The researcher responded via email to screen eligibility criteria and set up a telephone interview(s) with each subject. The cost to place two (2) ads in *Get Out!* was $400, plus four (4) ads posted on Craigs List ($10 per ad), came to a total cost of $440 for recruitment ads.

Subject Consent. All participants who were accepted to participate in the study signed an online consent form and provided an email address/phone number, which allowed subjects to participate in the dual phases of the study (*See,* Appendix H). Respondents signed consents through an online app, *DocuSign.com.*

Compensation to Study Participants. Compensation was given to participants based on time spent. Subjects who completed Phase I received an Amazon $25 gift card. Those subjects who participated in Phase II received an additional $25 online gift card. Compensation in the form of an e-gift card was sent to participant's email. The cost of Phase I compensation for 42 participants was $1,050, with an additional $275 to compensate 11 participants for Phase II, totaling $1,325 in compensation.

Data Collection: Data collection took place in two distinct phases, as follows: 1) *Phase I*: Quantitative data was collected using these three test instruments: (i) 36-item *Survey Questionnaire*, (ii) *Beck's Depression Inventory Scale* and (iii) *Sexual Addiction Screening Test* (SAST-R). These test instruments were administered during a telephone interview conducted by the researcher to efficiently collect data within the timeframe allotted, reduce potential for missing data, assist any subject with visual impairment and aid subjects in the correct understanding of questions posed and answer choices (Cella et al., 2015). The interview process took approximately 45-60 minutes to complete. All three test instruments were scored and analyzed.

2) *Phase II:* A subset of 11 participants were called back from the original 42-person sample to engage in a second telephone interview. Phase II respondents were selected based on primarily on their comfort level and ability to engage in a candid, dialogue with interviewer concerning discrete sexual topics and personal

views/behaviors. All subjects selected for *Phase II*, were contacted in advance, and given options for date/time for the researcher-conducted telephone interview. Participants were presented with a series of 15 open-ended questions, administered by the researcher on a dedicated, confidential line set up solely for the purposes of this study.

Study Time Frame. Recruitment took place during the months of February - March 2021. All phases of data collection took place through March 2021 through June 2021. For participants' convenience, interviews were scheduled on Saturday and Sunday afternoons and early evenings.

MEASUREMENT SCALES/VARIABLES

Measurement Scales. Quantitative data collection often utilizes Likert-type scales for the purpose of "quantifying certain constructs of interests" (Gliem & Gliem, 2003, p. 82). Spector (1992) describes such a scale as having four characteristics: 1) it contains multiple items which will be summed; 2) each item measures something that has an "underlying quantitative measurement continuum;" 3) a summated scale has "no right answer" and 4) each item in a scale is a statement which is given a rating according to the subject's choice of answers (pgs. 82-83).

Each of the test instruments, *Survey Questionnaire*, *Beck's Depression Inventory Scale* and *Sexual Addiction Screening Test* contained Likert-type scales, which gave the subjects an opportunity to select the most appropriate answer that reflected the unique "attitudes, emotions, opinions, personalities [and/or] a description of [subject's] environment" (Gliem & Gliem, 2003, p. 82). Measurable scales were created for the *Survey Questionnaire* by giving a pre-assigned value (e.g., 0-3) to each response; then, all responses were tallied to produce a total score. Both published tests instruments, the

Beck's Depression Inventory Scale and *Sexual Addiction Screening Test* (*SAST-R)* had their own scoring scales, to assess depression and sexual compulsivity, respectively. These scores were used to "quantify certain constructs" related mental health issues (Gliem & Gliem, 2003, p 82).

Internal Validity Testing of Variables. To ensure internal validity, Cronbach's Alpha was performed for each subscale prior to analyses. An acceptable range for Cronbach is .70; however, this score may vary based on the sample size and the number of questions contained in the test instrument. Each variable was tested for internal validity[9] using Cronbach's Alpha. The scores for both the *Dependent Variables*, High Risk Sexual Behavior and Pandemic High-Risk Behavior were 0.67 and 0.51, respectively. Concerning *Independent Variables*, Health Beliefs/Risk Perceptions and Alcohol/Substance Abuse were 0.38 and 0.61, respectively. The internal validity scores for the two test published instruments, recognized by the American Psychiatric Association, *Beck's Depression Inventory Scale*[10] and the *Sexual Addiction Test*[11], these scores were obtained through prior research resources (*See,* Table 2 for full details of Internal Validity Scores for Dependent and Independent Variables.

Creating Composite Variables. Explaining the basis for creating composite variables, Song et al. (2013) explained this type of variable can best be defined as "a grouping of two or more variables, which are conceptually and statistically related, with

9 Pallant (2010) explained about the creation of reliable scales, "One of the most commonly used indicators of internal consistency is Cronbach's alpha coefficient. Ideally, the Cronbach alpha coefficient of a scale should be above .7 (p. 116).

10 Lee et al. (2017).

11 Hook et al. (2010)

each individual variable making up a scale, single or global ratings or categorical variables" (p. 1).

As explained by Song, Win, Ward, et al., there are two approaches for designing composite variables: (i) *averaging* or (ii) *meaningful grouping*. *Averaging* is a statistical technique implemented when the original variables to be combined are continuous or categorical. In contrast, *meaningful grouping* is a non-statistical merger of selected original variables based on the "interpretation of the variables' value or scores, guided by the science of the field" (p. 2). Meaningful grouping can be used to create a composite outcome variable derived from multiple continuous or categorical variables of both. Creating a composite variable begins with a careful analysis of the *concept* so that each variable selected for inclusion in the composite grouping *fully captures the concept*. Both independent and dependent composite variables created for this study were designed using the *grouping* approach, using concepts based upon findings discussed by prior research studies described in the Chapter III - Literature Review.

Dependent Composite Variables.

High-Risk Sexual Behaviors. Research findings from The Centers for Disease Control and Prevention (CDC, 2020 & 2021a) and The U.S. Department of Health and Human Services (2020) suggested certain unsafe sexual practices directly contributed to an increased risk for exposure to HIV, syphilis, chlamydia and antimicrobial-resistant gonorrhea: (i) high number of lifetime sex partners, (ii) high rate of partner exchange (multi-partnering), (iii) greater frequency of unprotected sexual activity (condomless sex), (iv) failure to use Pre-Exposure Prophylaxis (PrEP) Medication and (v) the exchange/solicitation of sex favors for money or valuable items (including illicit drugs).

Respondents' sexual health and behaviors were measured by the *Questionnaire Survey* (Appendix B) and *Qualitative Interview Questions* (Appendix E) which were created based upon prior research studies cited in Chapter III - Literature Review (Grov, 2006; Liau et al., 2006; Rosser et al., 2009; Taylor et al., 2004).

Participants were asked the following questions to determine the level of High-Risk Sexual Behavior, based upon individual variables, which were formulated to produce a measurable scale. Each response received a score that corresponded with level of risk (0-3) based upon the *level of frequency* (*Never, Rarely, Often* or *Always*). Those questions requiring the selection of a numerical response (*i.e.,* number of sex partners in last 12 months), received a score (1-4) because there is *no true zero*. Regarding the use of PrEP or HIV medication, responses were scored (0-4). Finally, the score assigned for the number of STDs contracted within last year, was calculated as follows: (a) each one-time infection (Syphilis, Gonorrhea or Chlamydia = 1, and (b) multiple infections received a score = 2. All responses were then tallied into a total score, with higher scores indicating a greater degree of High-Risk Sexual Behavior.

The Questionnaire Survey asked respondents the following questions about subject's' intimate behaviors and practices:

1) Approximately how many sex partners have you had in the past year? (1-10 partners = 1;11-20 partners, = 2; 21-30 partners =3; More than 30 partners = 4).

2) How often do you engage in anonymous partnering? (0 = Never, 1 = Rarely, 2 = Often, 3 = Always).

3) How often do you engage in simultaneous or multi-partnering? (0 = Never, 1 = Rarely, 2 = Often, 3 = Always).

4) How often do you use condoms for oral sex? (0 = Never, 1 = Rarely, 2 = Often, 3 = Always).

5) How often do you use condoms for anal sex? (0 = Never, 1 = Rarely, 2 = Often, 3 = Always).

6) Prior to sexual contact, how often do you disclose HIV/STD status to potential partners? (0 = Never, 1 = Rarely, 2 = Often, 3 = Always).

7) Prior to sexual contact, how often do you ask potential partner to disclose HIV/STD? (0 = Never, 1 = Rarely, 2 = Often, 3 = Always).

8). Is Pre-Exposure Prophylaxis (PrEP) Medication part of past or current sexual health regimen, please check one of the statements? (0 = I never took PrEP and do not have interest in taking this medication, 1 = I am not taking PrEP, but I would consider starting this medication, 2 = I was taking PrEP, but stopped, 3 = I am currently taking PrEP but have issues with consistency or 4 = I am currently taking PrEP consistently**.**

9) Within the past year, please indicate if you were diagnosed with anyone of these STDS (syphilis, gonorrhea, or chlamydia) and how many times? (0 = Not Infected, 1 = One Time, 2 = Two Times, 3 = 3 or More Times.

Questions were measured ordinally and questions 4, 5, 6, 7, 8 and 9 were reverse coded to have consistent outcomes. For example, increase 1 point to represent increase in High-Risk Sexual Behavior. As for the analysis, sum of questions 1 to 7 (ranged between 0 to 14) were used as continuous variable.

The internal consistency score using the Cronbach's alpha was 0.67. The average interitem covariance was 0.16. with 12 items.

Pandemic Risk-Taking Behaviors. The New York City Department of Health (2020) encouraged individuals to resist direct sexual contact and suggested implementing phone dating apps for virtual sexual encounters to reduce COVID risk. Recent studies revealed many phone dating app users were taking social distancing guidelines seriously. However, the intensity of pandemic experience did contribute directly to increased levels of depression and anxiety, leading some persons to relieve distressing affects with direct one-to-one hook-ups and/or at multi-partner gatherings (Sanchez et al., 2020; Carrico et al., 2020). Halkitis (2020) suggested the same psychosocial factors, contributing to High-Risk Sexual Behaviors and elevated rates of HIV/STDs among cisgender MSM were likely contributing to the same reckless behavioral patterns during the COVID-19 pandemic.

This *composite variable* was designed to gauge *Pandemic Risk-Taking Behavior* by measuring these related four factors: (1) Change in Number of Direct Sexual Encounters, (2) Use of Virtual Zoom Encounters, (3) Simultaneous and/or Multi-Partnering, and (4) Exchange of Sexual Favors for Money and/or Drugs. Subjects were asked a series of questions formulated to capture information about sexual behavior during the COVID-19 pandemic to produce a measurable scale, as follows:

1) During the current pandemic, has there been any change in the number of face-to-face sexual encounters? (0 = Reduction, 1 = No Change, 2 = Moderate Increase and 3 = Significant Increase.

2) During the current pandemic, how often do you used a phone app for virtual sexual activity? (Always = 0, Often = 1, Rarely = 2 and Never = 3); and

3) During the current pandemic, how often do you engage in simultaneous (group sex) and/or multi-partnering (various partners)? (0 = Never, 1 = Rarely, 2 = Often or 3 = Always).

4) During the current pandemic, how often have you engaged in the exchange/solicitation of sexual favors for money? (0 = Never, 1 = Rarely, 2 = Often or 3 = Always).

Each response was scored (0-4) and tallied to obtain a total score. A higher total score indicated the participant was not concerned about safety precautions during the pandemic. The internal consistency of this scale was within the slightly below acceptable range; the Cronbach's alpha was 0.51.

Independent Variables (Non-Composite).

Method Used to Connect with Potential Sex Partners. Prior studies measured the preferred method used to pursue partners and the number of hours each subject devoted to weekly sex-seeking activity (Cooper et al, 2000; Chaney & Dew, 2003; Chaney & Burns-Wortham, 2014; Lehmiller & Ioerger, 2014). In this present study, participants were asked to indicate what was the preferred method used for meeting potential sex partners (0 = Phone Apps, 1 = Website and 2 = In-Person).

Time Spent in Sex-Seeking Activity. Subjects were asked to indicate the level of sex-seeking activity per week, which was formulated to produce a measurable scale: (0 = None; 1 = 1 – 5 Hours, 2 = 6 - 10 Hours, 3 = 11 hours or more) (*See,* Questionnaire Survey, Appendix B). The measures used to rate the level sexual compulsivity in the research conducted by Cooper et al. (2000) was useful in creating appropriate scoring methods for this variable.

Demographic Characteristics: Some of the prior research studies cited in Chapter III - Literature Review recruited racially skewed samples, consisting primarily of Caucasian respondents, leaving out MSM of Color who are considered at higher risk for HIV/STDs. Possibly the method of recruitment, advertisement placed on phone dating websites such as *Grindr* may have attracted certain subgroups of the targeted MSM population. Due to the high cost of advertising on MSM phone dating apps and websites, this researcher selected magazine and online classified advertisements, which may have resulted in a larger percentage of African American respondents being represented in this study's sample.

The first set of questionnaire items queried information on the following demographic characteristics of each participant: (a) Age (0 =18-25 years; 1 = 26-35 years, 2 = 36-50 years, 3 = 50+ years), (b) Race/Ethnicity (0 = White; 1 = Black; 2 = Hispanic; 3 = Asian; 4 = Other), (c) Educational Level (0 = Non-HS Graduate., 1 = H.S. Graduate., 2 = Some College/Associate Degree., 3 = B.A. Degree, 4 -= Master's/Post Graduate Degree) ; (d) Income Level (0 = under 24,999 K; 1 = 25k – 49,999k; 2 = 50k – 74,999k; 3 = 75k – 99,999k; 4 = over 100k) and HIV Serostatus (0 = Unknown, 1 = Negative, 2 = Positive). As for the individuals' ethnicity, it was dichotomized throughout multivariate regression analysis, for example, white and non-white, Hispanic and non-Hispanic. Because regression did not specify each ethnicity separately, race/ethnicity was manually grouped (dichotomously) throughout the analyses (i.e., White vs. Non-White; Black vs. Others; Hispanic vs. non-Hispanic).

Independent Composite Variables

Health Beliefs/Risk Perceptions. As discussed under Chapter IV - Theoretical Framework, health beliefs and risk perceptions clearly influenced sexual behavior patterns. The related questions were composed based upon the Expanded Health Belief Model (EHBM) to explain why individuals accept and incorporate certain health beliefs, which inform decisions to engage in certain sexual behaviors (Skinner et al., 1997). EHBM has been widely used to predict individuals' sexual behavior that can effectively predict regardless of cultural background, gender, and sexual orientation (Abraham & Sheeran, 2005; Champion & Skinner, 2008). Previous researchers have suggested that faulty sexual health beliefs significantly increased unsafe sex practices among MSM (Bauermeister et al., 2013; Carballo-Diéguez & Bauermeister, 2004; Goedel et al., 2016; Volk et al., 2012; Halkitis et al., 2005).

Based upon the findings of these relevant studies, this researcher devised seven (7) indicators (conceptually related) to formulate this composite variable: (i) HIV Risk Perception, (ii) STD Risk Perception, (iii) PrEP Efficacy Rate, (iv) Antibiotic Efficacy Rate, (v) COVID Risk Perception, (vi) Risk of COVID Transmission Among Asymptomatic Persons and (vii) Risk of COVID Infection Among Healthy, Young Persons. The internal validity for this composite variable was tested using Cronbach's Alpha with a score of 0.38, which is rather low but still useful for purposes of this study although not generalizable to the MSM population.

Subjects were asked questions about health beliefs/risk perceptions, which may prompt some to engage in High-Risk Sexual and Pandemic Risk-Taking Behaviors.

These question/answer choices were formulated to produce a measurable scale. The sum of the score was used throughout the analysis (Ranging between 0 to 12).

(1) Rate your perceived risk level for contracting HIV (0 = No Risk, 1 = Low Risk, 2 = Moderate Risk, 3 = High Risk);

(2) Rate your perceived risk level for contracting STDs? (0 = No Risk, 1 = Low Risk, 2 = Moderate Risk, 3 = High Risk).

(3) PrEP is 100% effective against HIV (0 = Strongly Disagree, 1 = Disagree, 2 = Agree, 3 = Strongly Agree.

(4) Antibiotics are 100% effective against STDs (0 = Strongly Disagree, 1 = Disagree, 2 = Agree, 3 = Strongly Agree).

(5) Rate your perceived risk for contracting COVID-19? (0 = No Risk, 1 = Low Risk, 2 = Moderate Risk, 3 = High Risk).

(6) Those who are asymptomatic, cannot transmit COVID-19 infection. (0 = Strongly Disagree, 1 = Disagree, 2 = Agree, 3 = Strongly Agree); and

(7) Only the old, frail are at risk, while young, healthy people cannot contract COVID-19. (0 = Strongly Disagree, 1 = Disagree, 2 = Agree, 3 = Strongly Agree).

Alcohol/Substance Abuse. As described in Chapter IV – Theoretical Framework, the Addiction Model explained the function of brain's reward system and why risk-taking behaviors became ingrained and persisted among certain susceptible persons. Numerous research studies found indulging in excessive alcohol consumption and illicit substances to relax and enhance sexual encounters are known to cloud

judgment, lower inhibitions and, often prompt those who indulge in excess to engage in High-Risk Sexual Behaviors[12].

Alcohol and Substance Abuse was designed as *composite variable,* containing four (4) conceptually related factors*:* (i) Frequency of Excessive Alcohol Consumption, (ii) Frequency of Illicit Substance Use and (iii) Exchange of Sex for Drugs and (iv) Influence of Alcohol/Drugs upon Risk-Taking Behavior. The internal consistency for this composite variable was tested using Cronbach's Alpha, with was an acceptable score of 0.78.

Participants answered survey questions related to use and preferences, then each response was scored (0-3) and tallied to obtain a total score. A higher total score would indicate a higher level of alcohol consumption and/or substance abuse, which could potentially predict High-Risk Sexual Behavior. Additionally, respondents were asked which illicit substances were the drug of choice while engaging Chem-Sex (also known as, *party n' play*[13]. Responses related to drug preferences were considered *descriptive data* and were not tallied into the total score; however, such data is important for treatment intervention programs geared towards alcohol/substance abuse among the MSM population.

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[12] Batchelderet al., 2017; Beymeret al., 2014; Boonchutima & Kongchan 2017; Chew-Ng et al., 2013; Green et al., 2015; Irvin et al., 2015; Klein, 2011; Maulsby et al., 2014; Maxwell et al., 2018; Ostergren et al., 2011; Pakianathan, et al., 2016; Phillips et al., 2015; Reisner et al., 2014; Young & Shoptaw, 2013 and Whitfield et al., 2017.

[13] Chem-Sex is defined as, the "intentional sex under the influence of psychoactive drugs, mostly among men who have sex with men. . . [specifically] the use of mephedrone, γ-hydroxybutyrate (GHB), γ-butyrolactone (GBL), and crystalized methamphetamine. . . often used in combination to facilitate sexual sessions lasting several hours or days with multiple sexual partners (McCall et al., 2015, p. 1).

To understand the relationship between High-Risk Sexual Behavior and Alcohol/Substance Abuse, participants were asked to answer questions regarding routine consumption of alcohol/ substances used during casual sex encounters. The responses to following questions were formulated to produce a measurable scale (Q. 1, 2, 3, and 4 were summed (range between 0 and 12) and used as continuous variable.

(1) How often do you drink more than five (5) alcoholic beverages prior/during sexual encounters? (0 = Never, 1 = Rarely, 2 =Often, 3= Always).

(2) How often do you engage in Chem-Sex (use substances during casual encounters)? (0 = Never, 1 = Rarely, 2 =Often, 3= Always), and if so, which one is drug[14]? (0 = Cocaine, 1 = Ecstasy, 2 = Crystal Meth, 3 = Ketamine).

(3) How often do you exchange sex for drugs? Or drugs for sex? (0 = Never, 1 = Rarely, 2 =Often, 3= Always), if so, please indicate which drug[9]? (0 = Cocaine, 1 = Ecstasy, 2 = Crystal Meth, 3 = Ketamine).

(4) Do you think your current level of alcohol/substance use has led you to engage in High-Risk Sex Behavior? (0 = No Risk, 1= Low Risk, 2 = Moderate Risk, 3 = High Risk.

Mental Health Issues. Variables/measures were derived from numerous research studies, which suggested certain mental health issues, including 1) Depression and 2) Sexual Compulsivity are tied to high-risk sexual behaviors[15]. Two recognized and reliable test instruments, the *Beck's Depression Inventory Scale*, and the *Sexual Addiction*

[14] The type of drug used during casual sex was not included in the calculated score; but was gathered as descriptive data.

[15] Cooper et al. (2000), Chaney & Dew (2003), Coleman et al. (2010), Parsons et al. (2012).

Screening Test (SAST-R) were used to determine the level of depression and sexual compulsivity and whether higher scores could predict High-Risk Sexual Behaviors.

1. Depression. Prior research findings suggested a significant connection between depression and impulsive sex behavior; consequently, this study measured the level of depression to determine whether participants might pursue sexual gratification as a means of alleviating depressed mood (Parsons, Grov & Golub, 2012). To measure individuals' depressed mood, the *Beck's Depression Inventory Scale* (2nd edition; BDI-II) was used as a reliable published test instrument (APA, 2012; Beck et al., 1996; Beck et al., 1988; Beck et al., 1961). (*See*, Appendix C – *Beck's Depression Inventory Scale*).

This reliable test instrument contained twenty-one (21) statements, with four potential responses (Likert-scale with a potential score for each response, from 0-3). The total score was tabulated, as follows:

1-10 Total Score = Normal Range	21-30 Total Score = Moderate Depression
11-16 Total Score = Mild Mood Disturbance,	31-40 Total Score = Severe Depression
17-20 Total Score = Borderline Clinical Depression	Over 40 = Extreme Depression

Those participants who scored higher (Severe or Extreme) [16] on the *Beck's Depression Inventory Scale* were thought to be at the *greater risk level* for engaging in High-Risk Sexual Behaviors. The minimum test score being *0* and the maximum score *63*. Higher scores indicate greater level of symptom severity.

[16] In keeping with best mental health practices, any respondent who scored with Severe or Extreme Depression was referred to 888-NYC-WELL (888-692-9355) for free, confidential help to New York City residents available 24 hours a day/7 day a week.

2. Sexual Compulsivity. Developed by Dr. Patrick Carnes, the *Sexual Addiction Screening Test* (*SAST-R*), is a widely recognized test instrument used to explore the respondent's sexual history, including past sexual abuse and current sexual behavioral patterns. (*See,* Appendix D). This test instrument proved very useful for the purposes of this study because it measured Internet use, preoccupation, loss of control, relationship disturbance, and affect disturbance. Karila et al. (2014) conducted a systematic review of existing research measures, consisting of 22 screening instruments used to "diagnose or quantify sexual addiction disorders." Karila's team found the *Sexual Addiction Screening Test (SAST-R*) "efficiently and effectively" differentiated between male sex addicts and non-addicts" (p. 5). The internal consistency of the SAST-R was very good = ranging from .85. to .95.

The test instrument contained 20 *Core Questions* (1-20), with a cut-off score >6 *yes* responses, indicating a higher core level of sex addiction. In addition, the instrument contained four specific *Addiction Domains*, as follows: 1) *General Online Sexual Addiction (*Q. 22-27); 2) *Heterosexual Male Sex Addiction Patterns* (Q. 28-33); 3) *Female Sex Addiction Patterns* (Q. 34-39) and 4) *Gay Male Sex Addiction Patterns* (Q. 40-45). For purposes of this study Domains 2 and 3 were *not* included because such questions are not relevant to the targeted MSM population.

Each of the *Addiction Domains* had a cut off score: > 3 (indicating a higher level of additive behavior). For purposes of this study, only the *Core Questions* (Q. 1-20) along with the *Gay Male Sex Addiction Patterns* (Q. 40-45) were used to tally SAST-R scores.

Statistical Data Analysis. Stata 15 was used to analyze descriptive and bivariate analyses, and to estimate multivariate regression (Long & Freese, 2006; Johnson &

Wichem, 2007). To answer the first research question, (The Relationship between Demographic Characteristics Of MSM And The Methods Used to Connect with Potential Sex Partners, etc.*), chi-square* was estimated to test the independence between these variables. Specifically, *prevalence ratios* were used to compare Demographic Characteristics and High-Risk Sexual Behaviors between the Method Used to Connect to Potential Sex Partners (Apps/Internet/In-Person).

To examine the potential relationship between app users and High-Risk Sexual Behavior and Pandemic Risk-Taking, *multivariate regression analysis* was applied. To create the measurement scale required to collect/analyze the quantitative data, this researcher devised the following variable categories:

- *Dependent Variables (DVs)*: High-Risk Sexual Behavior and Pandemic Risk-Taking Behavior.
- *Independent Variables (IVs)*: Method Used to Connect with Potential Sex Partners; Time Spent in Sex-Seeking Activity; Demographic Characteristics, Health Beliefs/Risk Perceptions; Alcohol/Substance Use, Mental Health Issues (Depression & Sexual Compulsivity).

The DVs and three of the IVs were designed as *composite variables* (a grouping of 2 or more variable which are statistically related). Each compositive variable represents a *construct* which is defined by its *attributes*. For example, the Dependent Variable, *High-Risk Sexual Behavior* is understood by these quantifiable attributes (forming this compositive variable): (1) Higher # Sex Partners, (2) Simultaneous/Multi-Partnering, (3) Higher # Unprotected (Oral/Anal) Encounters, (4) Failure to Disclosure

STD/HIV Status, (5) Anonymous Partnering, (6) Exchange/Solicit Sexual Favors for Money, (7) Failure to Use PrEP and (8) History of Multiple STDs.

The *Survey Questionnaire* was designed to help the researcher quantify specific constructs. For each question, the participant selected from among answer options, each answer has been given a pre-assigned value (*e.g.*, 0-3). These answers reflect the subject's "attitudes, emotions, opinions, personalities [and/or] a description of [his] environment" (Gliem & Gliem, 2003, p. 82). For example, Q. 8 asks: Approximately how many sex partners have you had in past year? Answer Choices/Pre-Assigned Value: (a) 1-10 partners = 1; (b) 11-20 partners = 2; (c) 21-30 partners = 3 AND (d) More than 30 partners = 4. If the subjects selected (d) More Than 30 Sex Partners, then he would receive a score of 4. Each answer choice and its associated point score were summed to produce a total score.

Logistic regression was used to analyze each measure, independently rather than simultaneously using the sum of each measurement (Long & Freese, 2006). For example, logistic regression and odds ratio helped the researcher analyze the possible link between Method Used to Connect to Potential Partner and the Number of Unprotected Oral and Anal Encounters, *independently*. Prior research suggested a strong correlation between Internet Use and Unsafe Sexual Behavior (*e.g.,* unprotected oral and anal encounters); using such studies as our foundation, we south to investigate whether the use of phone dating apps has a similar impact on high-risk sexual behavior (Grov, 2006; Taylor et al., 2004).

We cannot assume that the Method of Contact Used (Phone App, Internet, or In-Person) was the main catalyst, fueling unsafe sexual practices; hence, this correlational

study measured *the relationship* between these variables, while controlling for these psychosocial factors: (i) Health Beliefs/Risk Perceptions, (2) Alcohol/Substance Abuse and (iii) Mental Health Issues (Depression/Sexual Compulsivity). To ensure the internal validity of this current study, Cronbach's Alpha was performed for each subscale prior to analyses. (*e.g.,* acceptable range for Cronbach is 70 depending on the sample size and number of questions).

Halkitis (2020) suggested that certain psychosocial factors, which contributed to High-Risk Sexual Behaviors and elevated rates of HIV/STDs among cisgender MSM were likely contributing to the same reckless behavioral patterns observed during the COVID-19 pandemic. To determine whether this implied relationship could be statistically proven, a correlational analysis was performed.

A Pearson Correlation Analysis was performed to determine whether there was a significant correlation between High-Risk Sexual Behavior (HRSB) and Pandemic Risk-Taking Behavior (PRTB). When calculating a Pearson correlation coefficient, we assumed that the relationship between the two variables was *linear*. Mindrila and Balentyne (2013) identified four (4) items which must be assessed to comprehensively describe a relationship between two variables: 1) the strength of the relationship (as expressed by the correlation coefficient); 2) the direction of the relationship, being positive or negative, based on the sign of the correlation coefficient; 3) the shape of the relationship, which must always be *linear* in order to calculate a Pearson correlation coefficient and 4) whether (or not) the relationship is *statistically significant*, based on the p-value.

The chart below illustrates how the strength of the relationship between two variables is calculated by the absolute value of r (Mindrila & Balentyne, 2013, pp. 95-124). The correlation *r* is always a number between -1 and 1. Statistically speaking, the relationship between two variables is considered *strong* when the r value is larger than 0.7. An important point to remember is correlations provide evidence of *association, not causation*.

Absolute Value of *R*	**Strength of Relationship**
r >0.3	None or very weak
0.3 < r <0.5	Weak
0.5 < r < 0.7	Moderate
r > 0.7	Strong

A very helpful approach to explain the relationship between variables calls for a graphical representation of the individual scores on two variables known as a *scatterplot*. When examining and interpreting a scatterplot, search for the *overall* pattern (the *direction, form, and strength of the relationship)* and for any noticeable deviations from that pattern such as is an *outlier* (an individual value that falls outside the overall pattern of the relationship) (Mindrila & Balentyne, 2013, pp. 95-124).

QUALITATIVE DATA COLLECTION AND ANALYSIS

This researcher conducted one-on-one telephone interviews, using a series of fifteen (15) open-ended questions to obtain a deeper understanding of how the method used to connect with potential sex partners informed intimate choices and sexual behaviors, which could potentially place one at greater risk for HIV/STDs. To accommodate for the impact of COVID-19 pandemic on sexual behavior certain relevant

questions were asked. Subjects selected to participate in Phase II were chosen based upon their ability to engage in an open-ended discussion, articulate clear and concise responses and felt safe/comfortable sharing intimate details of personal sexual experiences.

Qualitative Data Collection: Subjects were given the opportunity to express personal views through Qualitative Interview Questions (Appendix E) designed as a compliment the 36-item *Questionnaire Survey, Beck's Depression Inventory Scale* and *Sexual Addiction Screening Test* administered in *Phase I*), the following 15 questions were posed:

1) Explain [your] preference for [method used] to connect to potential sex partners,

2) Does sexual behavior become more compulsive, depending on whether the subscriber uses the app at home or while cruising for potential partners in public spaces?

3) Describe any adverse mood changes related to method used for sex-seeking activity (depression, anxiety, or low self-esteem).

4) Describe how the method used for sex-seeking activity has become addictive and/or problematic (impacting relationships/work).

5) Explain why [you] feel [at risk/not at risk] for HIV/STDs.

6) Explain why [you] choose to [disclose/do not disclose] HIV/STD status to potential sex partners.

7) Explain why [you] choose to [ask/not ask] about potential sex partner's HIV/STD status.

8) Explain why [you] choose to [use/not use] condoms during [anal sex and/or oral sex].

9) Describe [your] beliefs about PrEP's efficacy to reduce risk of HIV transmission.

10) Describe [your] beliefs about antibiotic efficacy to treat STDs.

11) How do you think digital technology can be used to improve HIV/STD prevention, education, and treatment?

12) Explain how alcohol/drug use impacts [your] sexual behavior? ;13) Explain why [you] feel at risk (or not) for COVID-19.

14) Do [you] feel the pandemic has impacted [your] sexual behavior in any way, please explain; and 15) Do [you] feel the use of dating apps has influenced [your] sexual behavior during the pandemic?

Analysis of Qualitative Data. Qualitative data analysis requires researchers to identify, examine and interpret patterns and themes captured within textual data and determine how these patterns and themes may provide answers to the research questions posed (National Science Foundation, 1997). This researcher identified themes and patterns among interviewees which explained how certain psychosocial factors influenced risk-taking behavior and why some subjects engaged/persisted in certain unsafe practices. The in-depth interviews explored how the Method Used to Connect with Potential Sex Partners influenced High-Risk Sexual Behaviors and how certain psychosocial factors such as Mental Health (Depression and Sexual Compulsivity, Health Beliefs/Risk Perceptions, Alcohol/Substance Abuse informed unsafe sex practices. Candid responses derived from this study will prove useful in the creation of appropriate mental healthcare and substance abuse intervention strategies to help this at-risk population.

Managing Qualitative Data. To manage the large amount of qualitative data, each interview was analyzed and then grouped according to patterns and/or themes observed. The type of analysis chosen depends on the nature of the research questions and the type(s) of data collected. In some instances, researchers use one type of analysis and on other occasions, both types may be used:

1) *Content Analysis* consisted of a three-step process, which involved coding the data for certain words or content, identifying the patterns, and interpreting their meanings. Coding was accomplished by reviewing all the text and labeling words, phrases, and sections of text that are relevant to the research question. Once the coding process was completed, data was sorted and examined for patterns (Taylor-Powell & Renner, 2003).

2) *Thematic Analysis* was accomplished by grouping the data into *themes*, which provided answers to the research question. Once themes were identified, the data was classified into *groups,* which allowed this researcher to analyze the meaning of the themes and connect these concepts back to the research question(s); likewise, it was essential to distinguish between data which was: a) directly evolved from the research question(s) and was established prior to collection *OR* b) naturally sprang from the data as the study was progressed (Taylor-Powell & Renner, 2003).

For the purposes of this study, both content *and* thematic analyses were used. Open-ended questions expanded our understanding of the psychosocial factors, influencing some to engage in greater risk-taking behavior than others. We learned why some participants held to certain misinformed health beliefs and risk perceptions, which were observed to adversely influence the intimate decision-making process. These candid answers provided greater insight into the deeper constructs of casual sexual encounters, (*i.e.,* participant's experience of being bullied to engage in unsafe sex due to fear of rejection or another's experience of physical harm/rape and reluctance to report abuse to authorities and the negative consequences of excessive use of alcohol/substances. Further, we learned how the preferred method used to connect with

potential partners impacted respondents' self-esteem, which likely contributed to depressed mood and/or addictive behavioral patterns (*See, Qualitative Results*, *Part I, #4 Impact of Method Used on Mood.*)

CONCLUSION

By using the 36-item *Survey Questionnaire* coupled with two published test instruments (*Beck's Depression Inventory Scale* and *Sexual Addiction Screening Test* and the responses captured from the *Qualitative Interview Questions*, this study captured key data to address the study problem and satisfactorily answer the research questions and test related hypotheses. While previous studies explored Internet sex-seeking and unsafe sexual behavior, a thorough examination of the psychosocial factors (mental health, health beliefs/risk perceptions and alcohol/substance abuse) influencing High-Risk Sexual Behaviors was not sufficiently conducted.

This mixed-method research study took a *holistic approach* towards data collection. The mixed-method approach expanded our understanding of how various methods used to connect with casual partners did not predict risk-taking behavior; however, we found certain psychosocial factors were relevant. The results obtained will prove useful towards the creation of innovative clinical interventions to educate and treat individuals with mental health and substance abuse issues; thus, decreasing the rate of HIV/STD among the MSM population. Finally, this project provided far-reaching information about sexual behavior during the COVID-19 pandemic and modestly paved the way for further studies involving vulnerable sexual minority groups.

CHAPTER VII: RESULTS

INTRODUCTION

This study sought to explain the ongoing sexual health disparity, impacting cisgender gay, bisexual and men who have sex with men (MSM), as evidenced by the elevated rates of Human Immunodeficiency Virus (HIV) and Sexually Transmitted Diseases (STDS). The Centers for Disease Control and Prevention (CDC, 2021) found, "In the United States, the estimated lifetime risk for HIV infection among MSM is one in six, compared with heterosexual men at one in 524 and heterosexual women at one in 253; furthermore, these significant differences are worse among African American and Latino MSM, who experience a one in two and a one in four lifetime risk for HIV infection, respectively."

Researchers suggested the use of Internet and phone dating applications (apps) has contributed to high-risk sexual behavior among MSM, leading to increased rates of HIV/STDs (Allen et al., 2017). In an online report, NYTimes confirmed phone dating apps have become increasingly popular because they offer users three distinct advantages, speed, convenience, and proximity; some believe this rapid means of connecting to those seeking casual sex encounters has opened a gateway for risk-taking behaviors (Wortham, 2011).

In search of tangible data which can be used to explain the ongoing sexual health disparity afflicting this vulnerable population and possibly reduce the rate of HIV/STDs, this study compared three types of methods used to connect with casual sex partners (Internet, phone applications or cruising public venues) to determine whether the use of

phone dating application (compared to the other two methods) could predict high-risk sexual behavior. Rather than looking to the method as the sole predictor, we questioned whether certain psychosocial factors, such as mental health (depression/sexual compulsivity), alcohol and substance use, faulty health beliefs/risk perceptions might influence high-risk sexual behavior among MSM. In addition, this study considered the possibility that these factors might place this population at greater risk for COVID-19 (Halkitis, 2020)

Adjustments to Recruitment and Data Collection. Initially, this study was conceived as a direct-contact research project, with live sample recruitment and participant interviews taking place at the Gay & Lesbian Center and Callen-Lorde Clinic in Manhattan. When the outbreak of the COVID-19 Pandemic began, live sample recruitment and interviews were no longer an option; hence, this researcher turned to other options to safely recruit a convenience sample of 42 sexually active, gay, bisexual and men who have sex with men (MSM), (18-60 years old) through print ads placed in *Get Out!* (a popular gay men's magazine) and online ads on *Craigs List* (a classified advertisement website). All potential subjects applied to participate in this study through a dedicated email address *msmphoneappstudy@gmail.com* where they were screened to determine eligibility. Potential subjects provided a contact number and were provided an appointment for a one-to-one interview session (*See*, Chapter VI – Research Methodology for detailed description).

Both phases of data collection were conducted via telephone interviews, as follows:

(1) *Phase I/Quantitative Data Collection* consisted of a 45 to 60-minute telephone interview, during which time three test instruments were administered: (i) 36-item Questionnaire Survey, (ii) the *Beck's Depression Inventory Scale* and (iii) the *Sexual Addiction Screening Test* (SAST-R).

(2) After all test instruments were scored and results recorded on Excel spreadsheets, *Phase II/Qualitative Data Collection* was initiated, with 11 participants called backed from the original sample of 42 to engage in a secondary 45 to 60-minute telephone interview, consisting of 15 opened-ended questions. During this interview session, participants shared details of dating experiences (both positive and negative), including how the method used to connect with casual sex partners (Internet, phone app or cruising public venues) impacted mood, self-esteem, and influenced sexual behavior (*See,* Qualitative Results, Part I, *Method for Meeting Potential Partners*, #4, for detailed responses).

It was observed that each respondent's distinct health beliefs/risk perceptions dictated choices and interactions with casual sex partners prior to and during the COVID-19 Pandemic (*See,* Qualitative Results, Part II, *Sexual Health, and Behavior,* for detailed responses). Respondents explained why they incorporated the consumption of alcohol and illicit substances (cocaine, methamphetamine, ecstasy, or ketamine) into the casual encounter or chose to refrain from such use, and how the consumption of alcohol and illicit substances influenced sexual behavior (*See,* Qualitative Results, Part III, *Impact of Alcohol/Substance Use & Sexual Behaviors*, for detailed responses).

Finally, respondents voiced opinions about the role of digital companies who promote subscriptions to phone dating apps and websites. Are such companies taking a

proactive role to protect subscriber safety or providing a gateway to risky sex practices and drug abuse? Respondents were asked how digital platforms could be used to help subscribers make informed choices through accurate sexual health education and access to free/low-cost sexual healthcare/testing/treatment.

Research Questions and Hypotheses Tested. The study was successful in its efforts to answer the three research questions posed and the related hypotheses were tested with outcomes outlined below:

Question #1*: To what extent do certain demographic characteristics of MSM affect the method used to connect with potential sex partners?*

Hypothesis #1: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to be HIV negative, young, Caucasian, college-educated and earn more than $75K per year.

Question #2*: To what extent does the method used to connect with potential sex partners influence High-Risk Sexual Behaviors, controlling for these psychosocial factors: (i) Mental Health Issues (Depression/Sexual Compulsivity), (ii) Alcohol/Substance Abuse and (iii) Health Beliefs/Risk Perceptions?*

Hypothesis #2: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in High-Risk Sexual Behaviors[17], when controlling for Mental Health Issues (Depression[18]/Sexual Compulsivity[19]); Alcohol/Substance Abuse and Health Beliefs/Risk Perceptions.

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[17] High Risk Sexual Behaviors is a composite variable, which includes: a) higher number of sexual partners (with the last year), b) higher number of unprotected oral/anal encounters (within last year), c) failure to disclose HIV/STD status to partner(s); d) failure to use PrEP to protect against HIV, e) history of multiple STDs, f) serial/multi partnering, g) anonymous partnering and h) Offer/Solicit Sex for Money.

[18] Depression level was measured by Beck's Depression Inventory Scale.

[19] Sexual Compulsivity Level was measured by Sexual Addiction Test (SAST-R)

Question #3*: To what extent does the method used to connect with potential sex partners influence Pandemic (COVID-19) Risk-Taking Behaviors, controlling for these same psychosocial factors: (i) Mental Health Issues (Depression/Sexual Compulsivity), (ii) Alcohol/Substance Abuse and (iii) Health Beliefs/Risk Perceptions*?

Hypothesis #3*:* MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in Pandemic (COVID-19) Risk-Taking Behaviors.

QUANTITATIVE RESULTS

The study considered how each of these six (6) Independent Variables (IVs): 1) Demographic Characteristics, 2) Method Used to Contact Potential Sex Partners, 3) Weekly Hours Spent in Sex-Seeking Activity, 4) Health Beliefs/Risk Perceptions, 5) Alcohol/Substance Abuse, and 6) Mental Health Factors (Depression/Sexual Compulsivity) impacted these two (2) Dependent Variables (DPs): 1) High-Risk Sexual Behavior and 2) Pandemic Risk-Taking Behavior (*See,* Appendix A - *Relationship between Dependent and Independent Variables).*

Three of the six Independent Variables, (1) Health Beliefs/ Risk Perceptions, (2) Alcohol/Substance Abuse and (3) Mental Health Factors and both Dependent Variables, (1) High-Risk Sexual Behavior and (2) Pandemic Risk-Taking Behavior, were designed as *composite variables*. (*See*, Chapter VI - Methodology for complete descriptions of the conceptualization and design of these composite variables).

Frequencies and Percentages: Independent Variables

Demographic Characteristics. The convenience sample of 42 cisgender MSM respondents were categorized, according to the following demographic characteristics: 1) Age Grouping, 2) HIV Status, 3) Race/Ethnicity, 4) Education Level and 5) Income Level (per annum). Statistical results produced these frequencies and percentages for each demographic attribute. In summary, the vast majority (76.19%) were HIV negative, almost half (47.62%) were 26-35 years old, with the majority (64.29%) identifying as African American. Concerning the sample's educational level, more than half (54.76%) had a earned a bachelor's degree. Regarding annual income level, nearly one-quarter (21.43%) of sample reported income under 25K per annum, while one-third (33.33%) reported 25K- 49,999K per year, just over a quarter (26.19%) received 50K- 74,999K annually; with lesser subset (16.67%) earned 75K-99,999K as annual salary and only a minute percentage (2.38%) received a salary >$100K per annum. *See*, Table 1 - *Frequencies and Percentages of Demographic Characteristics.*

Method Used Connect to Potential Sex Partners. While most prior studies (cited in the Chapter III - Literature Review) focused on how the use of the Internet impacted MSM sexual behavior, this study compared high-risk sexual behaviors across the three methods of connection used to locate casual sex partners. Respondents indicated the preferred method used to locate casual sex partners: Internet, Phone App, or In-Person Venues (also known as, *cruising*).

Results indicated exactly half (50%) of the sample preferred Phone Apps to connect with casual sex partners; while more than one-third (35.71%) of respondents favored *cruising* around bars, clubs, gyms, bathhouses, or other public venues to find a

hook-up and a smaller percentage (14.29%) utilized Dating Websites to find random sexual pleasure. (*See*, Table 3A - *Frequencies and Percentages for Method Used to Connect to Potential Sex Partners)*.

Hours Spent in Sex-Seeking Activities. According to Cooper et al. (2000) those individuals who spent more than 11+ hrs. in online sex-seeking activities were categorized as "cybersex compulsive" (p. 11). Incorporating this concept into formulating a scoring scale, this study asked respondent to report the time spent on a weekly basis in active pursuit of casual sex partners while using the preferred method (Internet, Phone App, or In-Person).

The results for time spent in sex-seeking activity indicated less than half of respondents (42.86%) devoted between 6-10 hours per week in pursuit of a casual sex partner, while over one-third (35.71%) spent 1-5 hours each week, with a smaller percent (21.41%) exceeding 11+ hour per week looking for sexual companionship. *See*, Table 3B - *Frequencies and Percentages for Hours Spent Per Week in Sex-Seeking Activit*y for all details.

Health Beliefs/Risk Perceptions. Prior research studies[20] cited in Chapter III – Literature Review found faulty sexual health beliefs significantly increased the likelihood of unsafe sex practices among MSM. In addition, the most recent studies concerning responses to COVID pandemic found those individuals who held to misinformed health beliefs, tended to minimize risk, ignored masking and social distancing precautions, and failed to adhere to other preventive measures, leading to negative health consequences

[20] Bauermeister et al., 2013; Carballo-Diéguez & Bauermeister, 2004; Goedel et al., 2016; Volk et al., 2012; Halkitis et al., 2005.

and even death (Chen, 2020). (*See,* Table 4 - *Frequencies and Percentages Health Beliefs/Risk Perceptions* for complete details).

Respondents were asked about health beliefs/risk perceptions involving: 1) HIV Risk Perception, 2) STD Risk Perception, 3) PrEP Efficacy, 4) Antibiotic Efficacy, 5) COVID Risk Perception, 6) COVID Transmission Among Asymptomatic Individuals and 7) COVID Risk Among Young/Healthy Adults.

1. HIV Risk Perception. A small percentage of respondents (11.90%) felt at high risk for contracting the virus, with slightly more than a quarter (26.19%) of the sample felt at medium risk, while the largest percentage among the sample reported being at low (38.10%) or no risk (23.81%), respectively. Being on PrEP medication might account for respondents feeling at low or no risk.

2. STD Risk Perception. Over one-quarter (26.19%) of respondents placed themselves at high risk for infection, while more than a third (35.71%) felt at medium risk, with one-third (33.33%) of participants rated themselves at low risk and a small remainder (4.36%) of respondents stated they were not at risk for contracting STDs.

3. PrEP Efficacy. When asked how strongly they agreed or disagreed with the statement about PrEP being 100% effective against HIV, over one-third (35.71%) *strongly agreed*, while almost one-third (30.95%) *agreed,* over one-quarter (28.57%) *disagreed,* and a small remainder (4.76) *strongly disagreed* that PrEP is 100% effective against HIV.

4. Antibiotic Efficacy. Concerning the ability of antibiotics to completely cure all STDs, respondents were asked how strongly they agreed such medications were 100% effective. Almost a quarter (23.81%) of respondents *strongly agreed,* over a

quarter (26.19%) *agreed,* while a third (33.33%) *disagreed* and the remainder (16,67%) of respondents *strongly disagreed*.

5. COVID Risk Perception. At the height of the pandemic with vaccines just becoming available, a significant percentage of respondents felt at low (23.81%) or no risk (14.29%) for COVID, respectively, while one-third (33.33%) felt at medium risk and over a quarter (28.57%) at high risk.

6. COVID Transmission Among Asymptomatic. Oftentimes, risk factors are minimized when COVID symptoms are not apparent (Chen, 2020). Respondents were asked to support/or not the statement, *those who are asymptomatic cannot transmit COVID*. A combined percentage (33.34%) felt those who were asymptomatic *cannot* transmit COVID, (14.29) *agreed* (19.05%) *strongly agreed,* respectively. We observed the larger percentage of participants were not deceived by seemingly healthy appearances. These respondents *disagreed* (38.10%) or *strongly disagree* (28.57%), respectively. These clearly knew that asymptomatic people *could* transit COVID.

7. COVID Risk Among Young Healthy Adults. Finally, respondents were asked whether they supported the statement *young, healthy adults are at low risk for COVID*. Less than a third (30.95%) of respondents believed young healthy adults were at low risk for COVID, *agree* (19.05%) and *strongly agreed* (11.90%), respectively; while the majority (68.95%) accurately believed young/healthy adults could still be at risk for COVID, *disagree* (30.95%) and *strongly disagree* (38.10%), respectively.

Alcohol And Substance Abuse. Many prior studies cited in Chapter III – Literature Review found those who indulge in excessive alcohol consumption and the use of illicit substances behaved impulsively and exercised poor judgement, leading to risk-

taking behaviors. The *Questionnaire Survey* asked respondents to report how often they consumed alcohol beverages in excess (5+ drinks) and/or used party drugs to relax/enhance the sexual experience. Additionally, participants were asked whether they bartered drugs for sex, vice versa and, which drugs they preferred. (*See*, Table 4 – *Frequencies and Percentages for Alcohol and Substance Abuse*).

Results indicated the majority (52.38%) *never* drank in excess (more than 5 alcohol beverages) prior to/during casual encounters, with a moderate percent (19.05%) *rarely* indulged to this extent, while a slightly higher percent (21.43%) *often* partook of five or more alcohol beverages and the remainder (7.14%) *always* drank in excess.

Concerning Chem Sex (also known, as *party n' play*), the vast majority (64.28%) *never* used illicit substances to enhance the sexual experience, with a smaller percent (14.29%) who *rarely* indulged, while some (11.90%) *often* used drugs and the remainder (9.52%) *always* used stimulants as part of the sexual experience. Among those who did indulge in party drugs, some (14.63%) preferred *Cocaine*, with those who opted for *Crystal Meth* (14.63%) and remainder (2.44%) who selected *Ecstasy*.

The exchange of drugs for sex (vice versa) is commonly practiced; hence, respondents were asked whether they engaged in bartering these commodities. Results revealed the majority (61.90%) *never* engaged in this practice, with some (14.29%) who *rarely* did so, while others (19.05%) *often* traded drugs for sex (sex for drugs) and the remainder (4.29%) *always* sought to barter. Again, the survey asked those respondents who indulged, what was the drug of choice? While he majority (63.41%) did not use party drugs; some participants (19.51%) bartered *Cocaine* in exchange for sexual

pleasure (vice versa), while some (9.32%) enjoyed *Ecstasy* in exchange for sexual favors (vice versa) and slightly higher percentage (9.76%) traded *Crystal Meth* in exchange for sexual pleasure or offered their bodies to partake of this illicit substance.

Finally, the Questionnaire Survey measured respondents risk perception for unsafe sexual practice linked to excessive alcohol consumption and/or substance abuse. Those who minimized the danger of overindulgence received a higher risk score. Results indicated the majority (59.52%) felt excessive drinking and substance abuse placed someone at *High Risk,* others (19.05%) rated the risk level at *Medium,* while some (11.90%) responded with *Low Risk* and the remainder (9.52%) said *No Risk.*

Mental Health Issues. Prior research studies suggested depression and sexual compulsivity were linked to High-Risk Sexual Behaviors[21]. For purposes of this study, two recognized test instruments were used to measure respondents' level of depression and sex compulsivity: 1) *Becks Depression Inventory Scale* and 2) *The Sexual Addiction Screening Test* (SAST-R).

1. Beck's Depression Inventory Scale: Results indicated almost half (47.26%) of respondents fell within the *normal range*, with some (11.90%) reporting *mild depression,* others (9.52%) were rated as *borderline clinically depressed,*

[21] Cooper et al. (2000), Chaney & Dew (2003), Coleman et al. (2010), Parsons et al. (2012)

almost one- quarter (21.43%) were considered *moderately depressed*, while a few *(*7.14%) scored within the range of *severe depression* and a small remainder (2.38%) were rated as *extremely depressed*. *See,* Table 6A – – *Frequencies and Percentages for Depression Level (Beck's Depression Inventory Scale).*

2. Sexual Addiction Screening Test (SAST-R). Results revealed almost one-third (30.96%) of respondents scored "0" for Core Level Sex Addiction (Q. 1-20), General Online Sexual Addiction (Q. 22-27) and Gay Men's Addiction Patterns (Q. 40-45), indicating *no measurable level of sex addiction*. Less than half (42.96%) of participants scored <6 for Core Level Sex Addiction (Q. 1-20), >3 for General Online Sexual Addiction (Q. 22-27) and <3 for Gay Men's Addiction Patterns (Q. 40-45), which indicated a *moderate level of sexual addition*; finally, the remainder (26.19%) of subjects scored >6 for Core Level Sex Addiction (Q. 1-20), >3 for General Online Sexual Addiction (Q. 22-27) and >3 for Gay Men's Addiction Patterns (Q. 40-45), which indicated *high level of sexual addition*. *See,* Table 6B - *Frequencies and Percentages for Sexual Addiction Screening Test (SAST-R)*.

Frequency/Percentages: Dependent Variables

High-Risk Sexual Behaviors: Research findings from The Centers for Disease Control and Prevention (CDC) and The U.S. Department of Health and Human Services (cited in Chapter III – Literature Review) found certain types of sexual behaviors and/or the lack of precautionary measures were considered unsafe practices. Health experts agreed the consistent use of PrEP prevents the spread of HIV. Likewise, with consistent use of HAART medication (prescribed to HIV+ persons) the virus is basically rendered

undetectable; thus, eliminating the risk of HIV transmission through sex. The *Survey Questionnaire* captured each respondent's level of risk-taking behavior, as evidenced by sexual practices and precautionary measures reported during the past year. (*See,* Table 7 – *Frequencies and Percentages for High-Risk Sexual Behavior*).

1. *Number of Sex Partners*. The vast majority (78.57%) reported 1-10 partners over the course of the past year, while some (14.29%) indicated 11-10 partners, with a smaller percentage (2.38%) revealing 21-30 partners and the remainder (4.76%) had >30 partners over the past 12 months.

2. *Anonymous Partnering*. Nearly one-half (42.86%) said they *often* engaged in this practice, while almost one-third (30.95%) reported *rarely* participating in anonymous liaisons, with some (19.05%) *never* doing so and the remainder (7.14%) *always* engaging in this type of unsafe practice.

3. Simultaneous (Group Sex) and/or Multi-Partnering (Multiple Partners). Results indicated over one-third (35.71%) *never* engaged in simultaneous and/or multi-partnering, while slightly less (30.95%) said they *rarely* did so; however, over one-quarter (26.19%) reported *often* engaging in this practice and the remainder (7.14%) *always* indulged in this type of sexual experience.

4. Trading/Soliciting Sexual Favors for Money. Results revealed the majority (57.14%) *never* bartered, while nearly one-quarter (23.81%) *rarely* did so; nevertheless, some (16.67%) *often* engaged in offering money for sex (vice versa) and the remainder (2.38%) *always* engaged in this trending unsafe practice.

5. *Use of PrEP or HAART (HIV) Medication*. Results showed less the half (40.48%) took PrEP and/or HIV medication *regularly*. For those who took PrEP, a small

percentage (4.76%) said they took PrEP *inconsistently*, while others (9.52%) *stopped taking* PrEP, while over one-quarter *considered taking* PrEP, and the remainder (19.05%) were *not interested* in taking PrEP.

6. *Use Condoms for Oral Encounters*. Results showed the majority (52.38%) *never* used condoms for oral sex, while almost a quarter (23.81%) said they *often* did so, a lesser percentage (19.05%) *rarely* used prophylactics for such encounters and the remainder (4.76%) reported *always* using them.

7. Number of Unprotected Oral Encounters (UOEs). Resulted indicated the vast majority (66.67%) had 1-10 *UOEs* over the past year, with some (19.05%) stating they had 11-20 such events and the remainder (14.29%) had 21-30 UOEs. None of the respondents reported >30 UOEs.

8. Use Of Condoms for Anal Intercourse (Receptive/Insertive Sex). Results showed a significant percentage (40.48%) *often* used condoms for anal sex, while one-third (33.33%) stated they *always* used protection, with some (7.14%) rarely used condoms for anal encounters and the remainder (19.05%) *never* used prophylactics for receptive/insertive anal sex.

9. *Number of Unprotected Anal Encounters (UAEs)*. Respondents indicated the following reports concerning the past year's number of UAEs. The vast majority (66.67%) said they had 1-10 UAEs, while some (19.05%) reported *None,* with others (11.90%) stated >30 UAEs and the remainder (2.38%) had 21-30 incidents of unprotected anal sex.

10. Prior Disclosure of HIV/STD Status to Potential Sex Partner(s). Less than one-third (30.95%) of respondents said they *always* disclose prior to sexual interactions

with potential partner(s), while over one-quarter (26.19%) *often* tell their serostatus, with a lesser percentage (21.43%) who *rarely* revealed HIV/STD status and the remainder (21.43%) who *never* made known such information to prior to sexual liaisons.

11. Prior Inquiry into Potential Partner(s)' HIV/STD Status. Results indicated over one-third (38.10%) *always* asked about partner's status prior to sexual contact, while one-third said they *often* inquired, with some (19.05%) *never* bringing up this matter and the remainder (9.52%) who *rarely* discussed this subject with potential partner(s).

12. Number of STDs (Syphilis, Gonorrhea and/or Chlamydia). The vast majority (88.10%) reported *no* STDs over the past year, while a small percentage (2.38%) were diagnosed with *syphilis*, with some (4.76%) were infected with *gonorrhea* and the remainder (4.76%) reported *multiple infections (gonorrhea)* over the course of the year.

Pandemic Risk-Taking Behaviors. Bearing in mind the insightful predictions of Halkitis (2020) who suggested those who routinely engaged in HRSB would likely ignore recommended COVID safety precautions and seek out casual encounters without reservation during the pandemic. The Questionnaire Survey queried these four factors to gauge pandemic risk-taking behavior: (1) Change in Number of Direct Sexual Encounters, (2) Use of Virtual Zoom Encounters, (3) Simultaneous and/or Multi-Partnering, and (4) Exchange of Sexual Favors for Money. (*See*, Table 8 – *Frequencies and Percentages for Pandemic Risk-Taking Behaviors* for full details).

1. Change in Number of Direct Sexual Encounters. Results indicated the vast majority (71.43%) took heed to COVID safety recommendations by *reducing* direct sexual contact, while some (16.67%) reported *no change* in the number of sexual

encounters, while none (0%) experienced a *moderate increase* in partners and, finally, the remainder (11.90%) had a *significant increase* in sexual companions.

2. Use of Virtual Zoom Encounters. Results found less than half (42.86%) *never* used virtual encounters as a safe means of sexual gratification, while some (19.05%) *rarely* pursued virtual encounters, with over one-quarter (28.57%) who *often* enjoyed such online pursuits and, the remainder (9.52%) who *always* sought sexual gratification through virtual encounters on digital platforms.

3. Simultaneous (Group Sex) and/or Multi-Partnering. Results found the majority (58.54%) *never* engaged in group or multi partnering during the pandemic, with some (14.64%) *rarely* pursuing such sexual activity, while over one-quarter (26.83%) *often* engaged in group sex and/or had sex with multiple partners and none (0%) reported *always* engaging in such activity.

4. Exchange*/Solicit Sexual Favors for Money*. Findings revealed the vast majority (64.29%) *never* exchanged or solicited sex for money, with some (16.67%) participants *rarely* engaging in this practice, while others (16.67%) *often* offered sexual pleasure for monetary gain or solicited willing partners with monetary compensation; finally, none (0%) of the respondents *always* sought out this type of interchange.

Answers to Research Questions and Support for Hypotheses:

Research Question #1: To what extent do certain demographic characteristics of MSM affect the method used to connect with potential sex partners?

***Hypothesis #1*:** MSM who connected with potential sex partners through phone apps (compared to other methods used) are more likely to be HIV negative, young,

Caucasian, college-educated and earn more than $75K per year (*See*, Appendix A, *Relationship between Dependent and Independent Variables).*

Findings: The results did not lend full support for Hypothesis #1. Only three of the five proposed demographic characteristics were found among phone app users, HIV status, age, and educational level.

The vast majority (71.43%) (n=15) of phone app users were HIV negative.

The vast majority (71.43%) (n=15) of phone app users were under 35 years old.

The vast majority (76.19%) (n=16) were college-educated, within this sub-group the majority (66.67%) (n=14) possessed a bachelor's degree, and the remainder (9.52%) (n=2) earned a Master's/Professional Degree.

However, two the proposed demographic characteristics were observed among the sample, thus leaving this hypothesis unsupported; namely, Race/Ethnicity and Educational Level:

Surprisingly, only some respondents (19.05%) (n=4) of phone app users identified as Caucasian, while the vast majority (71.42%) (n=15) identified as African America/Black, and the remainder (9.52%) (n=2) were Latino.

Interestingly, only some (14.29%) (n=3) of phone app users fell into a higher income bracket, earning $75-99K and small remainder (4.76%) (n-1) reported a salary >100K per annum. There were those (23.81%) (n=5) who fell into the lower end of the income bracket with <$24,999K per year; while others (19.05%) (n=4)) were within a lower middle income-range of $25-49,999K annually and some (38.10%) (n=8) reported higher mid-level income range of $50-75K per annum.

Research Question #2: To what extent does the Method Used to Connect with Potential Sex Partners influence High-Risk Sexual Behaviors, controlling for these psychosocial factors: (i) mental health issues (depression/sexual compulsivity), (ii) alcohol/substance abuse and (iii) health beliefs/risk perception?

***Hypothesis #2*:** MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in High-Risk Sexual Behaviors[22], when controlling for Mental Health Issues (Depression[23]/Sexual Compulsivity[24]); Alcohol/Substance Abuse and Health Beliefs/Risk Perceptions.

Findings: A Multiple Linear Regression analysis was performed to examine the extent to which the Independent Variables (described in detail below) predicted the Dependent Variable High Risk Sexual Behavior). The focal Independent Variable was the Method Used to Connect with Potential Sexual Partners (phone app, Internet, or In-Person), Hours Spent in Sex-Seeking Activities and the common covariates were controlled, including Risk Perception/Health Beliefs, Alcohol and Substance Abuse, Mental Health Issues (Depression/Sexual Compulsivity) and Demographic Characteristics (HIV Status, Age, Race, Education Level, and Income Level). (*See*, Table 9, *Results of Multiple Linear Regression Analyses*)

[22] High Risk Sexual Behaviors, as evidenced by a) higher number of sexual partners (with the last year), b) higher number of unprotected oral/anal encounters (within last year), c) failure to disclose HIV/STD status to partner(s); d) failure to use PrEP to protect against HIV, e) history of multiple STDs, f) serial/multi partnering, g) anonymous partnering and h) Offer/Solicit Sex for Money.

[23] Depression level was measured by *Beck's Depression Inventory*.

[24] Sexual Compulsivity Level was measured by *Sexual Addiction Screening Test (SAST-R)*

***Method Used to Connect and High-Risk Sexual Behavior*:** Findings revealed the use of phone applications did *NOT* predict HRSB when compared to the two other contact methods (Internet and In-Person). Results: App/Internet: β = 1.90; 95% CI [-3.01, 6.83], p = 0.43; R^2 = 0.69); F(15, 26) = 3.88 and In-person: β = .47; 95% CI [-3.22, 4.17], p = 0.79; R^2 = 0.69) F(15, 26) = 3.88.

***Hours (Weekly) Spent in Sex-Seeking Activities & High-Risk Sexual Behaviors*:** Findings showed a *significant* relationship between number of weekly hours spent in sex-seeking activity and HRSB. Results showed: β = 4.06, 95% CI 1.71, 6.42, p = 0.002; R^2 = 0.69, F(15, 26) = 3.88.

Mental Health Issues and High-Risk Sexual Behaviors: Results revealed a *statistically significant relationship* between High-Risk Sexual Behavior and Higher Levels of Depression (as measured by *Beck's Depression Inventory Scale*): β = -2.01; 95% CI [-.3.84, -.17], p = 0.03; R^2 = 0.54) F (15, 26) = 3.88.

Furthermore, findings showed a *statistically significant relationship* between Sexual Compulsivity, as measured by Sexual Addiction Screening Test (SAST-R) and High-Risk Sexual Behavior: β = 4.43; 95% CI [1.69, 7.17], p = 0.003; R^2 = 0.69; F (15, 26) = 3.88.

These findings align with prior studies conducted by Parsons, Grov and Golub (2012) who found depression and sexual compulsivity predicted risky sexual behaviors; furthermore, these results likewise harmonize with the prior findings of Coleman et al. (2010) who established a link between compulsive sexual behavior and unprotected sexual encounters.

Alcohol/Substance Abuse and High-Risk Sexual Behaviors: Findings revealed *no statistically significant relationship* between Alcohol/Substance Abuse and High-Risk Sexual Behaviors: $\beta = -.057$; 95% CI [-.45, -.56], p=0.81; $R^2 = 0.69$; F (15, 26) = 3.88. These results were surprising, given the abundance of evidence from prior studies showing a strong link between the use of Alcohol/Substance Abuse and unsafe sexual behavior.

Health Beliefs/Risk Perceptions and High-Risk Sexual Behaviors*:* The results revealed a *statistically significant relationship*: $\beta = 1.39$; 95% CI [.61, 2.18]; $R^{2 =} 0.69$, F (15, 26) = 3.88 = 2.28, $p = 0.001$. The lack of accurate knowledge concerning sexual healthcare coupled with a failure to recognize one's risk for HIV, STDs and/or COVID-19 infection were *strongly tied* to High-Risk Sexual Behaviors. Our results align with the constructs of the Expanded Health Belief Model (EHBM), which were used to explain why some MSM engage in HRSB.

Demographic Characteristics and High-Risk Sexual Behaviors: Findings revealed certain Demographic Characteristics predicted High-Risk Sexual Behavior, while others did not:

1) ***Age***: No significant statistical relationship: $\beta = .84$; 95% CI [-.1.65, 3.34], p = 0.49; $R^2 = 0.69$) F(15, 26) = 3.88;

2) ***HIV Status***: No statistically significant relationship:

HIV Positive: $\beta = -1.89$; 95% CI [-6.43, 2.65], p=0.40; $R^2 = 0.69$; F(15, 26) = 3.88 . HIV Neg/Unknown = $\beta = -10.21$; 95% CI [-.20.82, .38], p>=0.06; $R^2 = 0.69$; F(15, 26) = 3.88;

3) ***Race/Ethnicity***: For the purposes of multiple linear regression analysis, the Caucasian (White) segment of the sample was designated as the reference group. Hence, the other racial/ethnic segments of the sample (Black, Latino and Asian/Mixed) were compared against the reference group (Caucasian) to determine whether the demographic characteristic of race/ethnic was a predictor for High-Risk Sexual Behavior among MSM.

Results revealed a *statistically significant relationship* was found between certain racial/ethnic groups and High-Risk Sexual Behavior. Black or Latino: Black= β = -4.53; 95% CI -9.06, -.002], p = 0.05; R^2 = 0.69; F(15, 26) = 3.88; Latino = β = -7.52; 95% CI [-13.36, -1.78], p>=0.01; R^2 = 0.69; F(15, 26) = 3.88. However, no statistical relationship was found for those who identified as Asian/Mixed with High-Risk Sexual Behavior = β = -.5.99; 95% CI [-.19.08, 7.09], p = 0.35; R^2 = 0.69; F(15, 26) = 3.88.

4) ***Education Level***: No statistically significant relationship: β = -2.46; 95% CI [-5.16, .23], p>=0.07; R^2 = 0.69; F(15, 26) = 3.88.

5) ***Income Level***: No statistically significant relationship: β = .21; 95% CI [-1.39, 1.82], *p* = 0.78; R^2 = 0.69; F(15, 26) = 3.88.

Research Question #3: To what extent does the method used to connect with potential sex partners influence Pandemic Risk-Taking Behaviors[25], when controlling for

[25] Pandemic Risk-Taking Behaviors, as evidenced by: a) face-to-face sexual encounters; b) not using phone apps for virtual encounters, c) multi-partnering (group/serial) and d) Offer/Solicit Sex for Money.

Mental Health Issues (Depression/Sexual Compulsivity); Alcohol/Substance Abuse[26] and Health Beliefs/Risk Perceptions[27].

Hypothesis #3*: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in Pandemic Risk-Taking Behaviors*.

Findings: Multiple linear regression analysis was performed to determine whether *Method Used to Connect with Potential Sexual Partners* (i.e., phone apps, Internet or in-person cruising) predicts *Pandemic Risk-Taking Behavior*, when controlling for *Demographic Characteristics* (HIV status, age, race, education level and income level) and certain psychosocial factors, including *Risk Perception/Beliefs*, *Alcohol and Substance Abuse*, *Mental Health Issues (Depression/Sexual Compulsivity).* (*See*, Table 9, *Results of Regression Analyses*).

Method of Contact and Pandemic Risk-Taking Behaviors: There was no statistically significant relationship between the Method of Contact (App/Internet or In-Person) and Pandemic Risk-Taking Behavior (PRB); as results showed: (App/Internet) = β = .39; 95% CI [-.68, 1.47], $p = 0.45$; $R^2 = 0.87$; $F(15, 26) = 12.37$ and (In-Person) = β = .36; 95% CI [-.44, 1.17], $p = 0.36$; $R^2 = 0.87$; $F(15, 26) = 12.37$.

Hours Spent in Sex-Seeking Activities & Pandemic Risk-Taking Behaviors: No statistically significant relationship found. Results showed: β = .29, 95% CI [-.22, .80, $p = 0.25$; $R^2 = 0.87$, $F(15, 26) = 12.37$.

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[26] Alcohol/Substance Abuse, as evidenced by: a) excessive alcohol use (more than 5 drinks); (b) engaging in ChemSex (also known as, party 'n play) and c) exchange of sexual favors for drugs, vice versa.

[27] Misinformed Health Beliefs/Risk Perceptions, include: a) Not Feeling at Risk for HIV, b) Not Feeling at Risk for STDs, c) Belief - PrEP is 100% Effective against HIV, d) Belief - Antibiotics are 100% Effective against STDs, e) Not Feeling at Risk for COVID-19, f) Belief - Asymptomatic Persons Cannot Transmit COVID-19 and g) Belief - Only Older People are at Risk for COVID-19

Mental Health Issues and Pandemic Risk-Taking Behavior: Results showed no statistically significant relationship between Depression and Pandemic Risk-Taking Behaviors (PRB).= β = .14; 95% CI [-.25, .54], $p = 0.47$; $R^2 = 0.87$, F(15, 26) = 12.37; furthermore, there was no statistically significant relationship between Sexual Compulsivity and Pandemic Risk-Taking Behavior (PRB), = β = .24; 95% CI [-.34, .84], $p = 0.40$; $R^2 = 0.87$ F(15, 26) = 12.37.

The results of the multiple linear regression analysis revealed two independent variables were statistically significant predictors for the dependent variable, *Pandemic Risk-Taking Behavior*: 1) *Alcohol/Substance Abuse*: β = .13; 95% CI [-.24, -.23], $p = 0.01$; $R^2 = 0.87$, F(15, 26) = 12.37 and 2) *Perception/Risk Beliefs:* β = .84; 95% CI [.67, 1.02], $p = 0.000$; $R^2 = 0.87$, F(15, 26) = 12.37.

D*emographic Chrematistics and Pandemic Risk-Taking Behaviors*: Findings revealed none of the Demographic Characteristics (HIV Status, Age, Race/Ethnicity, Education, or Income Levels predicted Pandemic Risk-Taking Behaviors:

1) ***Age*:** No significant statistical relationship: β = .39; 95% CI [-.14, .94], $p = 0.14$; $R^2 = 0.87$ F(15, 26) = 12.37.

2) ***HIV Status***: No statistically significant relationship: HIV Positive = β = -.04; 95% CI [-1.03, .95], $p = 0.93$; $R^2 = 0.87$ F(15, 26) = 12.37and HIV Neg/Unknown = β = -.10; 95% CI [-2.42, 2.21], $p = 0.92$; $R^2 = 0.87$; F(15, 26) = 12.37.

3) ***Race/Ethnicity***: For the purposes of multiple linear regression analysis, the Caucasian (White) segment of the sample was designated as the reference group. Hence, the other racial/ethnic segments of the sample (Black, Latino and Asian/Mixed) were compared against the reference group (Caucasian) to determine whether the demographic

characteristic of race/ethnic was a predictor for Pandemic Risk-Taking Behavior among MSM.

Findings revealed no statistically significant relationship, as follows: Black= β = .15; 95% CI [-.83, 1.15], $p = 0.74$; $R^2 = 0.87$; F(15, 26) = 12.37; Latino = β = -.05; 95% CI[-1.31, 1.20], $p = 0.92$; $R^2 = 0.87$; F(15, 26) = 12.37; Asian/Mixed = β = .28; 95% CI [-2.57, 3.15], p =0.83; $R^2 = 0.87$; F(15, 26) = 12.37.

4) ***Education Level*:** No statistically significant = β = -.14; 95% CI [-.73, .44], $p = 0.61$; $R^2 = 0.87$; F(15, 26) = 12.37.

5) ***Income Level*:** No statistically significant relationship = β = .09; 95% CI [-.25, .45], $p = 0.56$; $R^2 = 0.87$; F(15, 26) = 12.37.

Pearson's Correlation Analysis: A final correlational analysis was performed to lend statistical validity to the keen observations made by Halkitis (2020) who suggested the same factors responsible for unsafe sexual practice prior to the pandemic may lead some to engage in unsafe practices during the pandemic and ignore or minimize the risk for COVID-19 infection and transmission. A Pearson correlation analysis was performed to investigate the relationship between two variables, High-Risk Sexual Behavior (HRSB) and Pandemic Risk-Taking Behavior (PRTB) (*See,* Chapter VI - Methodology, p 87 for details about *R* Values*)*. Findings indicated the strength of the relationship, based on the *r* value to be *moderate, p = 0.56*. In addition to investigating the relationship between two quantitative variables, a scatterplot (a graphical representation of the relationship), was created using the Stata 15 program. As in any graph of data, we looked for an overall pattern and for any apparent departures from that pattern. We observed a *positive* directional pattern, as HRSB increases, so does PRTB (*See, Table*

10A: Pearson Correlation Analysis Scatterplot: High-Risk Sexual Behavior and Pandemic Risk-Taking Behavior).

QUALITATIVE RESULTS

The qualitative collection process consisted of a 15-question telephone interview, which was designed to engage the participant in an open-ended dialogue to expand upon the responses provided earlier in the *Questionnaire Survey*, using the following format: I) The Method for Meeting Potential Partners, II) Sexual Health and Behavior, III) Alcohol and Substance Use and IV) Impact of COVID-19 Pandemic.

PART I. METHOD USED TO MEET POTENTIAL PARTNERS. Part I of the interview focused on four areas: 1) Method Preference; 2) Use of Phone Dating Apps (Home vs, Public Spaces); 3) In-Person Cruising Impact of Method Used on Mood and 4) Impact of Method Used on Daily Function.

***1. Method Preference (Phone Dating Apps, Internet, or In-Person Cruising*):** This subs-set of 11 respondents (selected from the original 42-person sample), included five (5) phone dating app users and six (6) participants who preferred to seek out potential partners at in-person venues (a/k/a cruising). There were no Internet users in this subsample.

Phone Dating Apps: Respondents who used phone apps agreed this method provided three distinct benefits to users: (i) Reduction of Social Awkwardness (feeling safe/ less pressured); (ii) Convenience of Technology and (iii) Amusement/Entertainment.

(i) Reduction of Social Awkwardness (Feeling Safe and Less Pressured). A cautious Latino (25–36-year-old) respondent felt safer "behind the

screen," until he could "warm up to the conversation" and "know what to expect before meeting in person." He pointed out, "you don't have to go through with something you don't want to."

(ii) Convenience of Technology. An African American (36-50) man preferred this method as "a convenience, making it easy to stay in touch." A Caucasian 50 + respondent defined this method as "a generational thing, living in a digital age, everything is done on the phone."

(iii) Amusement/Entertainment. Most of the respondents used phone apps to "kill the boredom" and found scrolling through profiles "amusing and entertaining."

Besides these positive aspects, phone app users pointed out three *negative factors* which they observed or experienced directly: (i) Entrapment/Exposure to Danger; (ii) Cat-Phishing (being fooled by phony profiles) and (iii) Chem-Sex (a gateway for the exchange of sex for drugs, vice versa).

(i) *Entrapment/Exposure to Danger*. Most phone app users admitted to feeling vulnerable while in pursuit of a potential sex partner. One Caucasian (26-35) young man, echoed this universal feeling of vulnerability, being caught off-guard by "not seeing someone in person, which could be a lure."

(ii) *Cat Phishing*. One Caucasian (25-36) phone app user shamefully admitted to engaging in such deception because he felt "self-conscious," about his appearance and feared rejection from potential partners. "I deliberately created a fake profile to hide behind." Low self-esteem prompted him to choose "someone beneath myself to avoid losing respect." Several app users voiced disappointment over the initial

meet-up after contact was established. One Caucasian (26-35) man observed "Sometimes when people show up, they have used an older photo. It's not another person."

(iii) *Chem-Sex: Exchange of Drugs for Sex*. A Caucasian (25-36) respondent who lived in Manhattan used apps while under the influence of illicit substances to "approach escorts." An older 50+ Caucasian respondent sarcastically referred to phone dating apps as "a revolving door for those who just want to get high, get drunk and get laid."

2. **Use of Phone Apps: At Home vs. Public Spaces**. Most respondents found GPS technology offered the best of both worlds, with the option to connect with potential partners at home or in public spaces. Concerning home use, those who used apps cited three benefits: (i) time to assess potential partners; (ii) feeling more confident to be yourself; and (iii) avoid impulsive decision-making.

(i) Time to Assess Potential Partners. Several respondents made these remarks about the convenience of phone app use at home:

"You can take it a little bit slower; but when you are outside, you are in the moment and inhibitions are looser."

"Some people you meet on the app while you're outside can be too pushy, which can make you feel anxious or scared."

"You have more time to think what you are going to do and whether you want to meet this person."

"I have all the time I need to go through the app and use it the way I want to. When I am in the street I do not think about things, I am under pressure to act."

"The app helps you to monitor who you are thinking of going out with before you go hanging out with somebody. You can't say apps are the cause for HIV/STDs, people have to be aware of their own bodies and alerting themselves and be what they are more susceptible of getting and know how to navigate for themselves in those situations."

(ii) Feeling More Confident to Be Yourself. A 25–36-year-old, Caucasian respondent admitted, "I am more courageous. I will be speaking to multiple people. I will take them on a ride if you know what I mean. I say sexy things I will not actually go through with." One 25–36-year-old African American respondent felt more at ease, "I feel free and more comfortable when I am alone, more privacy." A 36–50-year-old African American participant said, "I speak a little more freely and feel more comfortable with my interactions when you are on the phone app at home."

(iii) Avoid Impulsive Decision-Making. One cautious middle-aged, African American felt public space app use must be done judiciously, "Being closer to someone makes it easier to do something more impromptu." A younger 25-36 Caucasian respondent echoed with this keen observation, "Outside of the home, you are in the moment. Maybe your inhibitions are a little looser."

Those who used phone apps in public spaces identified these two benefits: (i) affords anonymity and (ii) can be used as a safety buffer.

(i) Affords Anonymity. One African American (25-36) respondent felt more comfortable using the phone app *outside* because he feared "being outed as gay" to homophobic family and was "afraid of being bullied by mean-spirited co-workers."

(ii) Can Be Used as a Safety Buffer. One young (25–36-year-old) African American respondent who used the app in a bar/club observed, "a way out and if things

are not going well then, [you] can readily get out of an awkward situation." One young Caucasian man who was caught off-guard in a public venue while using phone app was relieved to be able to get away discretely, "I found someone when I was outside, I wanted to talk to but then I wasn't interested it was just very pushy." Another Caucasian (25-36) participant who used phone apps in bar/club venues noted, "The other day someone came up to me, but I made it look like I had a boyfriend, and I was going home. "

3. **In-Person Venues (Cruising)**. The six respondents who preferred in-person cruising shared specific reasons for preferring this means over phone apps: i) Thrill of the Chase/Conquest; ii) Avoid Cat- Phishing; iii) Make a Good Connection and iv) Enjoy Getting Dressed Up/Being Seen.

(i) Thrill of the Chase/Conquest. Most respondents who preferred cruising for a hook-up in bars/clubs and other live venues. One older 50+ African American man found this method offered the best opportunity to "observe people, enjoy making eye contact, approach someone attractive and offer a drink to get things started." The whole process was likened a stimulating sex-seeking game. As an older Caucasian man explained, "I enjoy the excitement of the hunt."

(ii) Avoid Cat Phishing. Most agreed that live interaction offered "more assurance, what you see is what you get." One older 50+ African American bisexual male preferred the bar scene to phone apps because, "I'm looking for a certain physical type and I felt mad when someone else shows up."

(iii) Make a Good Connection. One younger African-born respondent preferred to "meet someone randomly, in a club or shopping." In this casual setting, he

enjoyed the benefit of observing and being able to "read body language, you can find out whether the person really likes you."

(iv) Enjoy Getting Dressed Up/Being Seen. While digital technology was referred to as a "generational thing;" being out on the town seemed to appeal to the older set. One 50+ Caucasian gay man, who described himself as "very attractive and selective," enjoyed going out, "every six weeks;" but, he felt pity for those "desperate ones who hit the same clubs and bars every week." He used this type of technique "to keep it fresh, I go to 5 or 6 different places… it's fun and nobody knows me. I am a fresh face."

While going out to bars and clubs may offer the above benefits, there were undeniable shortcomings to cruising in public venues for sex partners: 1) Fierce Competition/Being Rejected; 2) Being Intoxicated Can Lead to Assault or Worse.

(i) Fierce Competition/ Being Rejected. An older African American 50+ bisexual male observed one must be prepared to "accept rejection because you can't be everyone's type, and everyone cannot be your type."

(ii) Being Intoxicated Can Lead to Assault or Worse. All six respondents agreed going out alone to cruise for hook-ups comes with its set of perils, including the possibility of becoming intoxicated and leaving with a stranger who could "rob, assault, or kill you."

4. **Impact of Method Used on Mood.** Respondents who used phone apps as well as those who preferred cruising, provided honest disclosures of how each method of contact impacted mood, from a positive/negative standpoint.

Phone App: Positive Impact on Mood. Respondents who used phone apps experienced a positive impact on mood in the following ways: (i) Reduced Stigma/Shame; (ii) Promoted Feelings of Hopefulness/Opportunity and (iii) Elevated Self-Confidence.

(i) Reduced Stigma/Shame. One African American user whose family and co-workers were homophobic, felt phone app reduced stress, by providing a private, safe outlet to be himself. "When my parents first found out, they kept a distance from me. It's very hard when your co-workers know you are gay, and they don't want to talk with you. I was scared to come out, when I was working at Apple, and I was scared that he would let a guest would know I was gay."

*(ii) Promoted Hopefulness/Opportunity***.** One younger respondent felt excited about new prospects. "Phone dating offers greater opportunities to meet new people when you're not up for going outside or a chance to meet someone when you least expect it." Another mid-aged African American participant observed, "When you are not planning to meet anybody that day [or] you don't look good today or I don't feel at my best, maybe there will be another chance. This same respondent felt cruising in a public venue was limited, but apps expanded dating horizons. "There are [in-person] situations where there are 17-19 people I would not ordinarily talk to; but on the app, I have a chance to talk to them, get to know them better, to develop a friendship and get to know things they may like to do that you didn't know about."

(iii) Elevated Self-Confidence. One 26-35 year old African American respondent found cruising "hard on self-esteem;" but using phone apps, these feelings of insecurity were significantly reduced, "I am anxious about meeting the individual in

person; “however phone apps provided a safe space to ease social discomfort, I feel good about myself because we already explained everything in the app, so we are just confirming what it is, I feel very good. I try to make sure about the person on the app before we meet.” One 36–50-year-old African American respondent felt less threatened being on the app, “It gives you a chance to go in and try without losing anything. I never had someone say negative things to me.”

Phone Apps: Negative Impact to Mood: Along with positive impact to mood associated with phone apps, some users suffered from: (i) Mood Fluctuations; (ii) Feelings of Inadequacy About Physical Appearance; (iii) Being Bullied by Other Subscribers Led to Low Self-Esteem; (iv) Temptation to Cheat/Commit Infidelity; (iv) Paranoia/Being Recognized from App Profile; and (V) Alcohol/Substance Abuse/Mood Dysregulation.

(i) Mood Fluctuations. One Latino (26-35 yrs.) phone app user reported mood swings, based upon the amount of attention received from other app subscribers, “In the beginning it increased my self-esteem, it gave me a confidence boost to always get compliments and have people reach out to me and show interest in me.” Over time, he saw signs of depression, “I must take breaks because I don’t think it’s healthy to be on the app all day, every day for a long period of time. I need to get away.” Another app user had similar feelings, “Overall, the app makes me feel good, like you have a chance at anything. But sometimes, it can make you feel over-anxious when people will hit you up again. It starts off that I feel good, but I wind up feeling lonely, my self-esteem is extremely low. I am not comfortable with who I am.” One younger Caucasian respondent experienced mixed emotions about app use, “You can get a little

sad sometimes, I would say 75% of my experiences have been good. But there are 25% of people who are excessively rude."

*(ii) Feeling Inadequate about Physical Appearance***.** A Caucasian man (26-35) revealed, "*Grindr* is a place if I go on that app my self-esteem and self-worth go down. People on there are just mean. Your only worth is what you look like, that's all they care about, there's nothing else to you."

(iii) Being Bullied by Other Subscribers Led to Low Self-Esteem. One 26–35-year-old Latino respondent said other app users can be very cruel, referencing some insulting statements, 'You think you are a top; you don't look like a top or you're a bottom, you're too tall to be a bottom.'" He noted some app users just get pleasure from bullying others, "They do it just to insult someone or question what the perception of the person is and not to say anything useful or nice or kind." One younger Caucasian respondent described hostile interactions with another app user, "When I did not reply quick enough because I was busy, under the weather and had not felt great, this guy became offended saying, 'you're not as cool as you think you are. You are just a waste of time so go *kill* yourself.' There's a lot of bullying. If you are a minority or if fat. There are so many exclusions."

In addition to bullying, one young, 26–35-year-old African American app user observed blatantly racist attitudes, recalling an unpleasant experience, "There was a time someone insulted me on the app, one guy didn't like black people and said something."

Finally, creating profiles can be challenging to one's self-esteem, as one respondent pointed out, "When I use the app I get two different reactions, my own personal reaction and the other person's. It is difficult to update my bio and put my

pictures. I feel it degrades me. However, when someone updates their bio, that's when I get serious. I feel they are the ones that are supposed to update their bio and not me. Their response and reaction help my self-esteem. I feel good. Not depressed, not anxious."

(iv) Temptation to Cheat/Commit Infidelity: One respondent felt guilty checking out other men while in a committed, monogamous relationship, "I was dating someone, we were in a monogamous situation. But I would secretly still download the app, not to meet anyone but see who was on there. I never actually met up with anyone, I just felt bad doing it because if I am with someone exclusively."

(v) Paranoia: Fear of Being Recognized from App Profile: One Caucasian (26–35-year-old) respondent felt very anxious about being spotted by neighborhood locals who may have seen his profile: "I use one-letter (not a name) to identify myself online or something gross like 'cum stud.' I try not to draw attention and behave normally, but people in the neighborhood will recognize me even with a blank profile and they will find out and they do hit you up a lot. A lot of people who use them want to be anonymous and there are a lot of blank profiles now. And a demand to reveal yourself. People collect your information."

(vi) Alcohol/Substance Abuse/Mood Dysregulation. One young Caucasian (25-36) respondent felt he was caught in a revolving door, "I used drugs on the phone app which made me feel bold and confident," however, the false confidence derived from substance cause him to spiral downward, "When I start to feel shitty about myself and I delete the app. Then I turn around and use it again. It puts a lot of pressure on me and then if I am getting high on drugs again, there I am downloading it again and going

through the same cycle. Boosting my confidence, boosting my self-esteem and then slowly over the next three hours, I realize I don't have the confidence to do these things."

Impact of In-Person (Cruising) on Mood: Going out in search of casual encounters left some respondents feeling great and eager for the next time out, while others reported depression/anxiety associated with the endless pursuit of a hook-up.

Positive Impact: There were those who lived for the nightlife and expressed a positive impact to mood with feelings of happy anticipation just waiting around the corner. One older Caucasian respondent, a fan of live action, observed a positive impact on mood. "I am always looking for someone new. When I go out, I am always in good spirits, I am always happy because I am going out… my spirit is high, I am getting out. If I meet someone, even better, if we talk and discuss things and decide we are going to hook up, even better."

Negative Impact to Mood from In-Person Cruising). Some were left feeling empty inside, depressed, and frustrated. Respondents reported feeling: (i) Bored by the Repetition; (ii) Fear of Impulsive Decision-Making/Relapsing; (iii) Deflated Due to Rejection.

*(i) Bored by the Repetition***.** One older Caucasian 50+ respondent observed a repetitive practice among his friends, "when you go out every week or 2-3 times a week, your face becomes known. Even if you go to 4 or 5 different bars, your anonymity is shrinking. In contrast, this man prefers to avoid such routine habits, "When I go out go out to the bars and clubs every six weeks, that's not a lot. When I go out, I look really cute, I am excited, and I am in 5 or six different places. I have a drink and go

to the next place. It's fun and nobody knows me, I am a fresh face. I don't recognize anybody because I am not there all the time."

(ii) Fear of Impulsive Decision-Making/Relapsing. One older Caucasian man who is on the road to recovery, recalled his wild days and the changes made over time, "My agenda has changed dramatically in the last five years; it used to be focused on purely sex … the goal merge sex and a social life. When I was much younger, I used to meet people in bath houses." This respondent wants to avoid bad influences, "Going out, people do crystal meth and cocaine. . . that crowd is very dangerous, especially when you are new to being sober." This respondent loves the NYC theatre/art scene and hopes frequenting a more serious venue will lead to finding a sober partner who shares his interests.

(iii) Deflated: Due to Rejection. One African American 50+ bar enthusiast takes a practical approach to cruising for casual sex, "I know that I am not the most handsome guy on the block so, I know that when you meet people, I have experienced rejection with both men and women. Just like everybody I see, there's going to be people who are not attractive to me. I am not attracted to everyone and not everyone is going to be attracted to me. It doesn't affect me, it's par for the course as far as I am concerned." A socially awkward respondent found rejections off-putting and prefers to solicit sex workers as opposed to taking chances in public venues, "I feel depressed when this happens to me because I use my time traveling there and my money. I am looking for sex when I go out. I have tried sex workers, but sometimes it is better. I got what I needed, and I felt satisfied."

5. **Impact of Method Used on Function.** Both app users and those who preferred in-person sex-seeking, cited these issues: i) interferes with work/study (addictive/compulsive); ii) privacy issues; iii) Risk of HIV/STDs from casual bar/club encounters.

(i) *Interferes with Work/Study (Addictive/Compulsive)*: A younger college-aged respondent felt phone app use became addictive and interfere with secular activities: "I have to force myself to put the phone away sometimes, if I don't do that, my secular and schoolwork will just suffer. Starting to work at home, I had to put time limits." Another respondent expended too many hours checking apps, "When I am alone, then I am looking. If I have down time, then I am looking for something to distract me. If I am alone, and in that state of mind, the app controls me." One participant felt compulsively drawn to check on the phone app, "I am bad at keeping a balance. It's hard to control. Every now and then I feel the need to check." Keeping oneself in check is challenging admitted another respondent. "Sometimes I find myself picking up the phone and putting it down. Sometimes, I find I peruse through the app a lot; but once I get a partner, I only stay small amount of time on the app. A younger participant found it hard to pull back, "It interferes with my work. Sometimes, I take time to search for a partner when I am supposed to be at work."

(ii) *Privacy Issues*: An older African American bisexual respondent who has "not come out to family or co-workers," preferred to keep his sex life private, making it a point to take any hook-ups to a hotel. "I don't want people coming to my house. Once you do that, people feel they have a right to take liberties. If I take people

to my house, the next thing I know they are standing in front of my building, I don't want that."

(iii) Risk of HIV/STDs from Casual Bar/Club Encounters: One respondent enjoyed meeting potential partners in-person but feared picking up/having with sex with anonymous persons was too risky, "I just don't go randomly picking people up every Tom, Dick and Harry off the streets or clubs. I make sure we are together for a long period of time. I was tested for HIV several times regularly last year."

PART II. SEXUAL HEALTH AND BEHAVIOR.

Health Beliefs/Risk Perceptions. The interview process queried participants' level of HIV/STD risk perception, sexual health beliefs and how these held beliefs influenced sexual health practices and, in some cases, were used to justify risk-taking behaviors: 1) HIV/STD Risk Perception; 2) Condom Use; 3) PrEP Use/Impact on Sexual Behavior; 4) PrEP Efficacy; 5) Increased STD Rates; 6) Disclosure and Inquiry HIV/STD Status:

1. **HIV/STD Risk Perception**. The level of risk perception held by some participants was based upon these unique sexual health beliefs: (i) sexual positioning, (ii) exchange of body fluids; (iii) oral sex.

(i) *Sexual Positioning (Top vs. Bottom)*. One respondent who regularly practiced unprotected anal sex said, "I think I am at low risk for HIV only because I am a top."

(ii) *Exchange of Body Fluids*. The same respondent said, "I am not into exchanging bodily fluids. Some people like it on them or receiving it, I don't like

that at all. I will give it to them, but I will not take it. I know that puts you at lower risk if you are barebacking."

(iii) *Oral Sex.* Another respondent expressed sounder sexual health facts about HIV/STD risk and anal sex, "I feel I am at a low risk for HIV because I don't have anal sex much anymore, I feel more at risk for STDs." Another respondent shared the same risk perception; however, he minimized prior history of multiple STDs contracted through unprotected oral encounters, "I feel at medium risk for STDs, I have only had them a couple of times, and they have been things like gonorrhea and chlamydia. I have never had syphilis."

2. **Condom Use**: Participants had expressed mixed feeling about condom use, which explained why most preferred unprotected sex. A few did incorporate them into safe sex practices. Participants were very candid about various factors: (i) Aversion for Taste/Texture and (ii) Advisable for Anal Sex/Not Oral Sex and (iii) Bullied into Unprotected Sex.

(i) Aversion for Taste/Texture/Fit. One HIV+ older Caucasian man explained his aversion to condoms, "The texture, taste and unnatural feeling of a condom causes most to reject wearing one. Even fruit flavored condoms for oral sex were not appealing. Condoms do not fit well on some well-endowed men." Another older African American HIV+ respondent echoed similar negative feelings. "I never had a condom in my mouth or have I received a blowjob with a condom on. I don't use a condom for oral sex because you will not have the sensation of pleasure the way you want to. The condom acts as a barrier, it numbs your penis. It feels like rubber, artificial, it's just not that enjoyable for me." Another older Caucasian respondent described similar

dissatisfactory experiences, “Condoms are nasty, and no one wants to put that in their mouth. They maybe fruit flavored but that’s annoying, no one wants to taste rubber inside their mouth.” “I don’t find the act to be pleasurable for one thing. So, I would think it’s not pleasurable for someone else. It dulls the sensation, and I don’t like the way it tastes. I am not a fan. It feels like a big wad of bubble gum in your mouth. What’s the point of sex if there is no pleasure? Condoms are not well made for the mouth. I do not consider it to be sex if you are using a condom. That is not sex. You are bringing in plastic, latex into something where it has no business being. I tried 7 or 8 different condoms, this is not going to work, very uncomfortable. I would go without sex from this day forward for the rest of my life than wear a condom.”

(ii) Advisable For Anal Sex/Not Oral Sex. One middle-aged African American respondent was aware of the risk for transmission of HIV/STDs, especially among those who practiced insertive/receptive anal sex. “It is important because you have a higher chance of transferring things that can have long-term things and to be responsible for yourself and others. Unless you are in a relationship with someone and it’s a long-term relationship and it’s monogamous.” This respondent believed using the condom for anal sex was essential for peace of mind; however, oral sex was a different matter, “Using a condom for anal, it’s more stressed that you need to do it, it’s part of your health so you don’t contract any disease. But I think when it comes to oral sex, people don’t think of it as sex sometimes. I would be at risk because the other person would complain. I get on the top with a condom for anal sex.” One insecure, easily intimidated African American (26-35) respondent said, “I have multiple times, when partners complain about using a condom for anal sex but in most cases I usually win out.

I am not afraid to say no." Another respondent voiced his thoughts, "I don't use condoms for oral because I feel the risk is minimal. I used it once. I did not like it. I use a condom for anal sex. I would have to know the status of the other person, if he did not want to use a condom before I would take the risk." One young Caucasian participant asserted, "I don't use a condom for oral sex because I feel the transmission rate for HIV is very low. Using a condom for oral sex is just not something gay men do. The good thing about oral sex is you can do it without a condom. Luckily, I have not been infected with an STD."

(iii) Bullied Into Unprotected Sex. One young Caucasian (26-35) respondent attempted to use condoms, but yielded to partners' negative response to avoid rejection, "When I first moved to NY, before I used PrEP, I was very big on using condoms. Every time, I would go somewhere, and people find out I used condoms, they would ask me to leave, they did not want to use condoms. They must be bareback. I remember the first time I gave in, being very upset with myself. This is not what you do, this not who you are. And now I am being judged a lot for it and I was judging people who were having unprotected sex, it's risky, why would you do that? Then I would find myself becoming those people."

3. **PrEP Use: Impact on Sexual Behavior.** Respondents who used PrEP felt free to engage in unprotected sex without fear of becoming HIV infected; however, respondents observed these issues: (i) Increased Multi-Partnering/STD Exposure; (ii) Dishonesty about PrEP Use and (iii) Chem-Sex Leads to Lapse in Consistent PrEP Use

(i) Increased Multi-Partnering/STD Exposure. One younger Latino respondent admitted, "Since I got on PrEP, my sexual activity has greatly increased.

Having the phone app and having people so accessible nearby increased my chances of getting an STD, especially if I was not being safe. I had gonorrhea in the throat." Another HIV negative respondent felt PrEP users leave themselves open to STDs, because they feel at liberty to engage in condomless sex. "The reason we have the syphilis increase is because of PrEP. These boys now say, 'Oh now I don't have to worry about HIV, so all the gloves come off and now they are all getting STDs. It causes people to be very risky sometimes. When I was on PrEP the partner refused to use a condom." This respondent observed some PrEP users and those on HIV medication are deceiving themselves, "I think PrEP is giving people a false sense of security to go out and have unprotected sex and also HIV meds too makes people undetectable."

(ii) Dishonesty about PrEP Use. One wary young Caucasian respondent noted, "People say I am on PrEP, so I don't have to do anything." This respondent raised the question of honesty, "Then you have to ask, are they really taking it?"

(iii) Chem-Sex Leads to Lapse in Consistent PrEP Use. Some respondents found illicit drugs use can cause someone taking PrEP to lapse. One Caucasian (25-36) observed from experience, "When they are on drugs for a week straight, they have not taken PrEP, so you must go in knowing you are protected. If they are telling you they are on PrEP, they are probably not. If they are HIV positive, they are not taking their HIV medication, which must be taken every day. One of the perks of PrEP is you can go unprotected, but you have to take it on a schedule and take it like it like you are supposed to or it defeats the purpose." One African American (25-36) young man said, "My partner was taking PrEP, but he would take Monday and then forget and

take it a few days later. I don't want someone like that to have sexual relations with me. We broke up. You cannot be too careful when your life is involved." Another African American respondent admitted he was lax, "I tried to use PrEP twice, but I forget to take it. It is a good medication."

4. **Knowledge of PrEP Facts and Sexual Behavior.** Knowledge about this pre-exposure prophylactic medication varied among respondents: (i) Efficacy Rate; (ii) Purpose/Use and (iii) Necessity/Value.

(i) *Efficacy Rate*. One respondent possessed an accurate knowledge about PrEP, "I would say 98 or 99 percent effective. I have read cases where someone is on PrEP and somehow, they got the virus."

(ii) *Purpose/Use*. One HIV+ respondent lamented in retrospect, "I think the ones who are negative should use PrEP. I have many friends who use PrEP, and it's very active and they recommend it. If I had the chance to do it over, I would have taken PrEP." One indecisive respondent was considering using this medication, "I am not using PrEP now. Maybe I could have unprotected sex then. I do think at some point yes, PrEP is effective." One respondent was surprised to meet someone who mistakenly believed PrEP protects against STDs, "Concerning PrEP, a lot of people do not know the difference between virus and bacteria. They think this protects you from HIV and with their limited knowledge of the difference between a virus and bacteria, they may think if PrEP if effective against HIV, then it most certainly will protect you from something as mild as gonorrhea."

(iii) *PrEP's Value/Options.* One Caucasian respondent thought PrEP had no value, "Up to this point, I have never got an infection, so I don't have any reason

to take PrEP. I don't know anybody who takes PrEP." One HIV+ 50+ respondent believed PrEP users will experience long-term side effects, "I think any man who goes on PrEP has fool stamped on his forehead, but if I am 20 years old and I am taking PrEP, what happens when I am 60? What am I going to look like? Nobody is going to take a drug for 20 or 30 years and have everybody come out scott-free. That's now how meds work." One Caucasian 35+ respondent had positive feelings about PrEP use, but also felt the post-exposure pill offered an option, "I would recommend PrEP, I don't take it now, but I did take the post-exposure prophylactic, twice or three times because I was using crystal meth and having sex with too many people you do not know, and they looked like they probably could be HIV positive. "

5. **Factors Leading Increase in STD Rates:** Based on respondents' interviews, the following factors contributed to high STD rates among MSM: (i) Overconfidence in Antibiotic Efficacy Rate; (ii) Failure to Comply with STD Treatment, (iii) Lack of Communal Responsibility, (iv) Anonymous Encounters/Drug Abuse and (v) Failure to Get Tested:

(i) *Overconfidence in Antibiotic Efficacy Rate*. One respondent attested to multiple STDs exposures, which resulted in prolonged treatment due to antibiotic-resistant infection, "I had chlamydia 4 or 5 times. I had to go back for a second dose of antibiotics because I still had symptoms after my first treatment. So, because I have had it a few times, it is possible the antibiotics, the first round may not be as strong specifically when I had it anally, they gave me a longer time. The doctor explained to me because I had it a few times, I might need more medicine. I think your body can build up antibodies and your system may not knock it out the first round of medicine."

(ii) *Failure to Comply with STD Treatment*. Respondents reported STDs continue to be problematic because those who are infected do not comply with treatment protocols. "We laugh when someone gets gonorrhea. They just go to the doctor, but they don't wait the 6-7 days like you are supposed to, they go right back out there. They get the shot from the doctor then they are back out having sex with someone. You are supposed to wait a week before having sex again, right? They don't wait and they don't say they had it and were treated. People are less concerned about contracting it, it's like having a headache or a cold and getting Tylenol. A lot of people carry it and don't show symptoms either."

(iii) *Lack of Communal Responsibility*. One 50+ Caucasian respondent noted STDs are minimized and many refused to accept responsibility for their reckless actions. "Because there is a pill for HIV and now, it doesn't matter if you get syphilis because it is treatable. This generation today, looks at the antibiotics as nothing. As you know, antibiotics, as we are learning, are no good for us." A serious-minded African American (26-35) participant exclaimed, "That a mentally reckless attitude to not care if you get an STD because you can take penicillin, it's uncouth."

(iv) *Anonymous Encounters/Drug Abuse.* Four HIV+ respondents said anonymous sex with multiple partners, coupled with the use illicit substances, increased the risk of STD. One Caucasian respondent declared, "Unprotected involvement is something I am not a fan of. I believe, especially with people you don't know, now if it's someone you do know or you are in a situation like that. But just unprotected sex, IV use – I don't do that." One older Caucasian participant observed, "Anybody could have any of those things at any time. I have been infected; I don't remember what it was. I did have

to have a shot. It happened twice. There's a good possibility I could get something since I am not using any protection. I am putting myself at risk because I have multiple partners. One African American subject asserted, "I am HIV positive; I take my medication. I feel at very low risk for STD because I am not just going out there and hooking up. . . Syphilis is through the roof among gay men. I know a couple of guys who got syphilis and those guys are promiscuous. They are out there, at one party or another. Doing drugs. Hanging out. I am not saying I never had an STD. I had gonorrhea in 1986. So that was the second time had gonorrhea. But I never had syphilis." Another Caucasian participant noted, "I take my HIV medication regularly. But I feel at high risk for STDs."

(v) *Failure to Get Tested*. One respondent observed, "There are still the risks for HIV and STDs. I try as much as possible to stick to my partner. I make sure we are together for a long period of time. I was tested for HIV several times regularly last year." Another respondent in a committed relationship asserted, "I am HIV negative. I was tested with my partner, we checked it together. After I had the test, I am controlling myself and I don't feel at high risk. I am with one person now. I felt at higher risk before, but now that I am dating one person. We have an understanding."

6. **HIV/STD Status: Disclosure and Inquiry**. There were mixed feelings about disclose/inquire prior to a casual encounter, with opinions ranging from: (i) Open Disclosure, (ii) Deception/Expectation; (iii) Insecurity Inhibits Inquiry; (iv) Sexual Impulsivity Impedes Disclosure/Inquiry, (v) Gender Differences; and (vi) Uncertainty of Status.

(i) *Open Disclosure:* One conscientious respondent declared, *"*I always disclose and ask before an encounter; however, I noticed people don't even ask

me. I even looked at the app to see if they would share, which makes me wonder why people aren't asking questions." One older Caucasian respondent said, "I tell people I am HIV positive; it makes it easier. Honesty is the best policy. I am usually protected; I can't think of many times I have not been. It's just easier." One African American subject admitted, "It is very important to tell someone your HIV status. I don't tell them right away; I wait until I meet them and feel comfortable." One Caucasian young man recalled, "When we first met, we had a long conversation about HIV status, and decided to get tested together. He is HIV+, and I am negative. He is taking medicine. We are using condoms." Another African American revealed, "I have friends who are positive, and they tell everyone, so people know, that's part of their personality. I don't see the shame now that I saw five years ago. I would never discriminate."

(ii) *Expectation of Deception*. One Caucasian (26–35-year-old) participant stated, "I don't ask or disclose because people have it on their app profile, that they are on PrEP or undetectable. No one is going to write not on PrEP or Detectible. You know they are going to lie." Another respondent was hesitant, fearing rejection, "I never tell the person, I am positive. Nobody has ever come up to me and said, 'by the way, I am HIV negative." An African American (26–35-year-old) man observed, "I do not ask any questions because they get scared and don't want to talk. Sometimes, I think they are hiding something. Maybe they are HIV positive and don't want to tell me." A Latino (26–35-year-old) man observed, "Most people who are HIV positive, they don't put negative or positive, they leave that part blank so that sets up a flag in my brain that they may not want anyone to know."

(iii) *Insecurity Inhibits Inquiry*. One younger man admitted, "I don't ask because unless it naturally comes up in the conversation, it could be a deal-breaker. They may not tell the truth. Then if I say, show documentation, they may say 'forget about it.' Then if they tell the truth, that's a deal breaker right there." One African American HIV+ respondent feared rejection. "People don't tell the truth because they think if they tell the partner the truth, they will lose them. Or they are afraid if they tell, they will expose their status to other people. Or they are afraid of infecting the person and being blamed."

(iv) *Sexual Impulsivity Impedes Disclosure/Inquiry*. An African American (26–35-year-old) respondent, asserted, "I am not going to place myself at risk for HIV/STDs to satisfy a sexual urge. What is the rush?"

(v) *Gender Differences.* A 50+ African American bisexual man stated, "I have had a couple of women at different times, right before we get physical, they will say, 'are you HIV positive, have you had a test?' I have never had another man ask me that."

(vi) *Uncertainty of Status*. One observant participant noted, "If they got tested in April, that does not mean they haven't been with two or three people before me. I get tested, before I interact with them. It just means getting an idea of where they are at, but still am taking a risk."

7. **The Impact of Digital Technology**. Regarding the potentially negative influences phone dating apps exert upon sexual behaviors and the responsibility social media companies have towards subscriber safety/education met with mixed opinions from respondents: (i) Phone Dating Apps Promote Risk-Taking Behaviors**;** (ii) Social

Companies Should Take More Responsibility; and (iii) Phone Apps Do Promote Condom Use, (iv) PrEP, Access to HIV/STD Testing/Treatment; (v) Phone Apps Should Educate Young MSM*;* and (vi) Phone Apps Should Monitor Bullying

(i) *Phone Dating Apps Promote Risk-Taking Behaviors*. One older Caucasian respondent observed, "These dating apps are a problem. Any person can put himself on a dating app. I saw on one app someone said, 'come to my house and have a nice time.' You don't know the person and you are inviting them over to have a nice time? People who use dating apps are reckless." One younger participant recalled, "BBRT [Bareback Real Time] is an online website. There's no app, it's a web page. It's all out there, the profile pictures are all genitals. The apps do not help keep people safer, they only provide sex." One Caucasian respondent observed, "On the whole, apps normalize risk-taking behavior. I went into someone's home and saw white powder laid out in lines on the plate."

(ii) *Social Media Companies Should Take More Responsibility*: Concerning access to STD Treatment and Tracing. One (26–35-year-old) Caucasian man said, "The apps don't take any responsibility; they don't want to know. They mention PrEP on there, but it's an advertisement for Truvada, they are making money off of it. Just like you can locate a dick, I think they should help people locate a testing site or access to a gay center. They are doing a lot of damage in the community if there is an outbreak because there is not tracing. There are those that verify your ID and I think that is a little bit safer. I think that posting ads that talk about STDs and where to get testing and free protection. I think people would do more, it they could do it without being embarrassed."

(iii) *Phone Apps Do Encourage Condom Use, PrEP, Access to HIV/STD Testing/ Treatment.* One younger African American HIV negative respondent observed, "The app *Jack'd* actually put up a lot of ads about PrEP, condoms, and safe sex. There are pop-ups about sex education type things. I think there are groups are clinics messaging to ask if you need access to testing, PrEP, or a check-up. They offer PrEP or find a discount for it and help you see a doctor to get check-up." Another respondent said in defense of phone apps meeting responsibility towards users, "The app I use has information about risks which I think is good. I think *GetMen* is a good app because they teach safe sex;"

(iv) *Phone Apps Should Educate Young MSM*. One participant made a thoughtful observation, "I think the apps can be helpful to educate the young people. The apps can be used to educate both partners to use protection so they can prevent getting HIV. "I think education and treatment through apps could be useful because people are online all the time and social media sites." "I would make a column on the app to give details about precautions they should be taking, give more information on protective measures. I did not get any help for medical care through an app, I did that on my own."

(v) *Phone Apps Should Monitor Racists Bullying*. One African American respondent who was bullied by racist comments declared, "I feel they need to monitor racial discrimination."

PART III. ALCOHOL AND SUBSTANCE USE.

The use of alcohol and substances is closely tied to high-risk sexual behaviors among MSM. Interviews explored these key factors: 1) The Impact of Alcohol and Substance Use on Sexual Behaviors.

1. **Impact of Alcohol/Substance Use and Sexual Behavior**. There were varied responses among participants about their experiences with alcohol/substances, both positive and negative, along warnings/advice and observations, as follows: (i) Relax and Lower Inhibitions; (ii) Avoid Being Impaired/Stay Aware; (iii) Impaired Judgment Resulted in Dire Consequences; (iv) Chem-Sex is Commonplace; (v) Chem-Sex Parties Promote Unsafe Practices; (vi) Sex is a Means to Acquire Drugs; and (vii) Mental Health and Addiction Services Needed.

(i) Relax and Lower Inhibitions. These six respondents felt the use of alcohol and substances helped them feel relaxed/mellow, confident, adventurous, and virile. One Latino young man admitted, "I would drink because I was nervous but in doing so it lowered my inhibitions. It may me start doing things I would not have been doing if I was sober." "Alcohol and drugs give people confidence that they don't have, and they can do more things." "When you get drunk or high it makes you feel free and stimulates you. I would not be able to do the same things if I was not drunk or high." An African American (26–35-year-old) respondent, revealed, "One time I used cocaine and drank, and it made me have sex for longer than I expected to. I feel it changes me and my inhibitions are lower and more relaxed." "I chose to use drugs and alcohol as a release valve to avoid certain emotions. To normalize alcohol and drugs as an outlet in my life was not a way to manipulate feelings but more to be who I was. I was not so ashamed that I had to have a double life. I was just enjoying getting high." One 50+ Caucasian man noted, "I like my alcohol and marijuana on the weekend. When I go out to a bar, especially on the weekend, I am going to have some marijuana before I go out. I am going to be nice and tight; I am not going to be drunk but I am going to be feeling

nice and I am going to be ready. I go out and have 5 or 6 drinks. I want to get my buzz on, I want to feel good, and I am ready to let loose."

(ii) Avoid Being Impaired/ Stay Aware: Two seasoned bar cruisers related warned about the dangers of being caught off-guard while under the influence. One 50+ African American man, claimed, "I don't indulge alcohol or drugs because I don't want a mind-altering chemical in my body. It might dull my senses. It may cause me not to be as responsive to a situation as I need to be. I always feel I need to give myself a fighting chance, to be clear headed to know what is happening because you may have to make a snap judgment. If I am under the influence, I may dismiss it because my faculties are dulled by alcohol and drugs." One Latino young man warned about being intoxicated while cruising for a hook-up. "I would recommend people not drink or drug because it clouds your vision. You could end up in a sexual situation especially if you go out to a bar with someone new."

(iii) Impaired Judgment Results in Dire Consequences: Four respondents warned against the real danger of being comprised/robbed/harmed by would-be predators. An older 50+ African American man related, "I can't tell you how many times personal friends of mine have real horror stories to tell that they were given something that was supposed to be this and, it turned out to be that and they had a bad reaction. The person that they were with took advantage of them. They physically assaulted them, sexually abused them, robbed them and all kinds of stuff. I know if it could happen to them, it could happen to me." Another (25–36-year-old) African American man lamented, "I caught HIV because of being high on cocaine. I passed out for three hours and then when I woke up, I could feel my body was not okay. I asked my

partner, he said I gave consent, but I didn't. It was not in my memory. Since then, I keep away from using any form of drugs. Drugs and alcohol make people take big risks." "I had a bad experience when I was drunk, someone took advantage of me. Most of the time I am sober, but when I get high it is with my partner that one, I usually know. I trust him. I rarely go to parties." Another African American (26–35-year-old) man asserted, "If I was going to drink or smoke (meth) it would do it with my partner not a stranger. I feel afraid they will take advantage or try to hit me. One time they took my phone and money from my pocket. I think I should not use drugs in club because I don't know the people."

(iv) Drinking/Chem-Sex is Commonplace: These two respondents felt the use of alcohol and drugs was integral part of sexual interplay, "Alcohol and drugs have become part of my going out and the drink before the party sex. So sometimes people take drugs to have fun and sometimes people have fun while taking drugs. It depends on the mood or the people/person you are with or why are you hooking up with that person." "It (meth) can make you relax and enjoy sex in the moment. They do it on the spot to enhance the sex. It's a sexual thing to get high like that, it's intimate. It enhances it, that's what I was saying. It makes you feel much more confident, outgoing, comfortable. You will say and do things you would not ordinarily do and then when the night is wearing off, that it is just the other version of me speaking."

(v) Chem-Sex Leads to Unsafe Practices: These four respondents spoke about the dark side of party n' play, A Caucasian (26–35-year-old) man recalled, "The more they get into the drugs, the darker they get. Then they start hiding behind the drug use. Holy fuck, I cannot believe I have done this. Then when they are high again,

they will push the barriers again." Another (26–35-year-old) Caucasian man candidly admitted, "You start out doing something and then you feel like shit about yourself because you just realize that's not who I am, I just behaved like that because of the drugs. I think most of the people get up and get high again because of the things they have done. They are ashamed. Like getting pissed on or taking 3 or 4 dicks unprotected, ending up at a sex party with 10 or 15 people, stuff like that. They would not be doing those things if they were not high." An African American (26–35-year-old) man recounted, "I caught HIV because of being high on cocaine. I passed out for three hours and then when I woke up, I could feel my body was not okay. Since then, I keep away from using any form of drugs. Drugs and alcohol make people take big risks." One (26–35-year-old) Caucasian man who engages in party n' play observed, "A lot of people are shooting up crystal meth… don't even know how to use a needle. They don't screen the drugs, they put them straight into the syringe, so you get abscesses. You should use a cigarette filter or a cotton ball and any particles like dust particles get stuck in the cotton ball, and you just get the liquid. Whereas they just put the meth into the chamber of the syringe and put water in there. They inject all these little particles." One young Caucasian man who participated regularly anonymous hook-ups noted, "A lot of these people have an infection, and they don't care. They would rather not know about it than to deal with it, if you have sex with multiple people a night for weeks running, there is no doubt you have to get an infection, you have to. How can you go for 2-3 months and then come up with gonorrhea and had sex with 21 people in the last day?"

(vi) Open Exchange of Sex for Drugs: These two frank respondents observed drug abuse has led some to exchange sexual favors for the drug of choice,

"People who have an addiction to drugs just hook with people because they have drugs. Some people just like to hook up with people and they have drugs.". "A lot of the crystal meth users wind up this way because sex goes hand in hand. People don't have sex while they are sober. They want drugs to have the sex. I always like drugs before boys. I am proud of that. I don't need a man; I get high for myself. But it always ends up going in that direct. So, people and their experience with drugs when they look back at it is always dark and painful. But I have fun doing things with friends and going out. I think crystal meth and sex goes hand and hand. Lots of time people like to go with older guys because they are generous, they supply them and that's enough to draw people over."

(vii) Mental Health and Addiction Services Needed. Two respondents are convinced the party n' play scene is responsible for pushing some through the revolving door of addiction; hence both strongly advocated for more treatment services. "I think mental health and drug issues need to be taken care of. In the gay community in NYC, we all know about the services. We know there are crystal meth meetings and information that is accessible. Sometimes, there is a place of shame until you go there and get help." "I felt with the crystal meth it had an adverse effect on my sex life. I was already older, I was 40. I stayed on it about two years. It was hard to get off. I had to go to a therapist every week for a year and then I had to go into cocaine. I got off it at 42, I am completely sober now."

PART IV. IMPACT OF COVID-19 PANDEMIC

At the height of the pandemic, the Center for Disease Control and Prevention (CDC) and the NYS Health Department recommended social distancing and safety guidelines to avoid infection/transmission. Interview questions prompted respondents to

explain why they chose to heed these recommendations or ignore them. With popular gay hook-up venues (bars/clubs) closed, how did respondents react to closures? Did some seek out underground options to find casual partners? How did the use of phone apps influence pandemic sexual behaviors? Interviews explored the following concerns: 1) COVID-19 Risk Perception/Response to Vaccine; 2) Sexual Behavior During COVID Pandemic; 3) Influence of Dating Apps During Pandemic.

1. **COVID-19 Risk Perception/Response**. Some individuals were quick to get vaccinated once these were made available, while others expressed doubt about the vaccine's efficacy rate and potential side-effects.

(i) *Positive Response to COVID Vaccine*. One older Caucasian respondent who was recently vaccinated felt less at risk and more confident because he was protecting elderly parents and himself from becoming sick or dying. "I was vaccinated, but I never felt at risk. I got vaccinated because of my mother's advice. I don't want to get them sick. I feel safer now." Another recently vaccinated participant expressed similar sentiments, "Yes, I got vaccinated. Before I was vaccinated, I felt at high risk. I slowed down my sex life because to be honest I did not look through the lens of not having sex. My mom and dad are in their 80s. We are very close. I just came back from spending time with them. My next concern was my nieces and nephews and then myself. I don't want to end up where I can't breathe."

(ii) *Suspicion Towards COVID Vaccine*. One unvaccinated Caucasian respondent was afraid of becoming infected; but, expressed doubt about accuracy of COVID information broadcasted by news reports. "I have not been vaccinated. I feel I am at risk. But I don't believe everything they show us. If what they say is really

happening and people are dying from COVID. I am just waiting to see what happens within next few months or a year. I am worried about the long-term effects of the vaccine on my health." A second unvaccinated 50+ African American respondent planned to get vaccinated to be safe and show the required card to enter public venues, but he voiced deep concern about long-range vaccine side effects. "I am not vaccinated. But I am going to. There's always side effects and we do not know what it is going to do to people. We know people are sick the day after. What if there is a new strain, then what? How do you know when someone has been vaccinated? My friend went to a drag show the other day, and they said you cannot come in because you don't have the virtual card. We don't know the vaccine is safe. There are always side effects. Medication has a bad history, people are suing Truvada. Everyone is asking me for proof of vaccination, so I am getting vaccinated. You can't go to some restaurants without providing the electronic card. I don't feel at risk for COVID. I worked in a restaurant, where I came into contact with hundreds of people a day. If you exercise caution, you will be safe."

2. **Sexual Behavior During COVID-19 Pandemic**: There were varying responses concerning the social interactions and intimate contact; some held fast to the rules and waited until restrictions were lifted, while others cared little about the risk and disregarded warnings: (i) Avoiding Social Contact; (ii) Ignoring Social Distancing and Safety Precautions and (iii) Resumption of Social Activity After Restrictions Lifted

(i) *Avoiding Social Contact*: Seven respondents believed a vaccine, social distancing and limited social interaction was essential during the pandemic. "Prior to vaccine, I kept inside and did not go out unless I had to and if I did with my mask on. Within my circle of friends, they were not going out either. I stay in the circle; I do meet

someone new now and then. Meeting up with someone new, anything can happen." "I am vaccinated. I did not go out much during the pandemic. I was busy working in healthcare, so I was taking precautions not to make other people sick. I saw people going to Fire Island during raging part of the pandemic to huge parties. So that made me less likely to get involved with those type of people." "I have been vaccinated. When we were on lock down, I did not go out much." "I am vaccinated. I did feel at risk before. I don't know anyone who got sick. I stayed home." "I did not see anyone new during the pandemic, I had my partner. I was careful." "To go out and have anonymous sex during a pandemic is worse. it used to be a one-night stand could kill you. With the pandemic, one sneeze could kill you. These guys who were out there were semi-suicidal in my book. They just did not care whether you will live." One unvaccinated respondent felt limited social contact offered protection. "I am not vaccinated. I work from home; I do not have too much social interaction, so I don't feel at risk."

(ii) *Ignoring Social Distancing and Safety Precautions.* Despite the CDC and NYS Health Department warnings, four respondents continued to party and hook-up, choosing to ignore health risks in favor sexual gratification. An HIV+ 50+ respondent revealed, "I got my first shot April 1st and my second shot May 1st, (2021), but prior to the vaccination I was still going out. There's an underground network through word of mouth. They were having gatherings, sometimes at people's houses. Sometimes in basements. One time I went to one gathering that was in a parking garage. They set up a makeshift bar, they were selling drinks, dancing. Right there with the parked cars. I knew there was some element of risk, but I had my mask on, and I had hand sanitizer. I did not feel that much at risk." Another younger respondent, "I had many friends who

got sick from COVID. They went out anyway. I went out to parties maybe once or twice. I did not feel afraid. I felt normal. During the time I was out, COVID was not on my mind. I was thinking about sex, that's the problem. I never thought about being infected. I thought I was safe because I was young and other people looked healthy." An older 50+ participant said, "I had friends who went to sex parties during pandemic. I was not invited. I would not go. I am not that sexually interested. If I was younger and motivated to get high, I would have. The lure is the sex and the drugs. It's an enabler." Another 35-year-old man said, "I think if the person has COVID and they are asymptomatic, there is no way to tell. But if they have the beginning of symptoms coming, they may be feverish, they may be sneezing or coughing out of normal amount of coughing or sneezing. If the place is not overly hot and they are sweating, something is going on there. I am taking a chance, but then again, I cannot look at someone and tell if they have HIV either." An HIV+ African American 50+ respondent said, "I went to a party; it was at a friend's place. There were about 25 people, males, and females -- No masks -- A sex party. I did not feel scared. I wanted sex and put aside thoughts of COVID. Now I am back to my regular routine. I did not get COVID. I wanted sex so I took the risk, but it is not worth the risk."

(iii) *Resumption of Social Activity After Restrictions Lifted***.** Four respondents indicated they made the decision to limit social activities, but as pandemic restrictions lifted, they felt comfortable going out again. "I did not go out in the pandemic. But when the restrictions came, I did not go out because the place I liked to go was closed." "The sex part of it, I have to be honest not until I got vaccinated. I feel now I can go out and have fun again." "I am vaccinated now; I feel safer. I am going out

again." "I was afraid when I went to meet my partner initially, luckily it was safe. I looked at him and knew he was not sick. I have not been tested for COVID. "

3. ***Influence of Dating Apps During Pandemic*.** Responses varied concerning the positive or negative influences of phone dating apps during the pandemic, as follows: (i) Virtual Sex is a Safe Option; (ii) Phone Apps are Sex-Driven and Promote Pandemic Risk-Taking.

(i) *Virtual Sex is a Safe Option*. One responded felt phone apps created a new option to remain connected with casual sex partners, reducing the risk of COVID infection. "I used apps for virtual sex, it was ok. Nothing bad about it. It was basically a good experience. I did not think about the safety of my privacy. I know a lot of people who were sober during the pandemic. Others went out, using drugs hard because they had no support system."

(ii) *Phone Apps are Sex-Driven/Promote Pandemic Risk*-Taking. One Caucasian 35-year-old respondent felt phone apps primarily promote sex-seeking behavior, "The gay culture is very sex driven, and I would try to have conversations with guys, but it seems we as males don't even know how to have a conversation. It's just sex, sex, sex, sex. I think pornography plays a huge role in my behavior, is it just getting the next hot guy?" Another African American respondent felt phone apps provided greater access to meeting potential partners, but it was up to the individual to use discretion, "I am trying a new app called Black People Meet. Yes, people took risks any way during pandemic to have sex just like with HIV/STDs. I think I can control myself."

Four respondents directly blamed phone apps for promoting risk-taking behavior during the pandemic. "I think dating apps were putting people at extreme risk. I

know a few people who were bored and just tired of COVID and acting out. I restrained myself because I was scared to get other people sick." "At the beginning of the lockdown, the apps were giving extra free profiles. 200 extra men at home for free! 90% have access to meth. Then they became strict about that and stopped. They were taking down advertisements for parties eventually. But in the beginning, they were encouraging you to use the app more." "I feel the apps were responsible for getting people to go out and take risks during the pandemic. People were bored. I was hooking up with multiple partners, one at a time."

One respondent felt phone apps were a gateway, but he wanted to take that risk, "Because I used the app during the pandemic, I felt safer. I used to go to nightclubs and meet some men, but I took the risk anyway. I don't think it's the app that is influencing people, it's my personality and I took the risk." Finally, one respondent felt phone apps placed desperate, lonely users at risk of being harmed during the pandemic. "I think apps led to more violence, more people getting beat up or robbed. When you are desperate, you go out there and you are rolling the dice. I think the apps play a big part.

SUMMARY OF QUALITATIVE INTERVIEWS.

The Method Used to Connect.

Method Preference: Of the eleven participants, the method used to connect was split between five phone app users and six who preferred cruising in public venues, such as bars/clubs. Those who used apps liked the convenience and speed it offered. They used spare time to scroll phone app profiles and flirt to offset boredom. All the app users complained about phony profiles and cat-phishing. Some app users preferred using the app at home as a buffer, to build up self-confidence for the eventual in-person meet-up or to screen out unsuitable prospects. Those who used the phone app in a public space explained it served as a filter to scan prospective partners in the bar/club setting and it was a built-in safety net to ward off or escape from aggressive types. While phone apps could be identified as a "generational thing," several participants who were in-person cruisers had tried phone apps and were dissatisfied because of cat phishing, being bullied, or failing to find what they were looking for. Hence, they discarded phone apps as a means of locating partners, preferring the direct approach.

Negative /Positive Factors Associated with Methods Used. For those who preferred in-person cruising, the vast majority enjoyed the "thrill of the chase "and hooking up but warned about becoming vulnerable in a public setting. They advised against overdrinking, getting high and wandering off with a stranger who could assault, rob, or kill an unsuspecting person. Both phone app user and cruisers agreed, no one likes to be rejected or overlooked. All agreed, finding a casual hook-up is competitive; with phone app users worried about how others rated their profiles and felt sad when their overtures were not favorably returned. Some reported mood fluctuations based on the

amount of positive or negative attention received from other subscribers. On a positive note, phone apps have opened a path to social connection/networking among the LGBT Community, both locally, nationally, and globally. Some shy types or those individuals who were "not out to family/co-workers" felt phone apps reduced social stigma and allowed a safe space to interact freely. Some felt hopeful while using the app, awaiting a chance to meet the right person. Bar/club cruisers indicated a similar experience enjoying a night on the town while others found it difficult to handle rejection. For those who enjoyed this method of contact, it was strongly suggested one should not go to the same place every week or appear too available/desperate. Other seasoned veterans of the bar scene acknowledged rejection can happen to anyone, be prepared and to keep trying.

Problematic/Addictive Issues. Sex-seeking activity can impact daily life, becoming problematic or addictive; app users felt the urge to "keep checking the phone for hits "and this compulsion interfered with work or studies. Some felt fearful of being recognized from the app profile while out in public. Some mentioned feeling shamed and bullied by other subscribers. Some African American app users experienced racial discrimination. Some individuals who struggled to recover from addiction, felt phone apps promoted Chem-Sex and it was a dangerous venture to get involved with party n' play. Concerning in-person cruising, respondents mentioned safety factors including being lured into a dangerous situation. Some were afraid that a casual hook-up met in a bar could stalk them at work or place of residence, recommending hotels as the place for casual encounters rather than one's home. Some felt casual pick-ups always ran the risk of contracting HIV/STDs.

Sexual Health and Behavior.

Risk Perception and Sexual Health Beliefs. Based on the responses given, it appears the majority held to inaccurate beliefs about sexual health care and risk factors while a few were informed, as follows:

(1) *HIV/STD Risk*: Many participants expressed odd, misguided health beliefs about risk factors for HIV/STD, including (a) the position occupied during anal sex, (b) exchange of bodily fluids and (c) whether STDs are transmitted during oral sex. Most respondents were unphased by multiple exposure to STDs.

(2) *Condom Use*: Most respondents had an aversion to the taste and texture of condoms; hence they chose to go unprotected. However, many agreed, condom use was recommended for both receptive/insertive anal sex. One person who wanted to use condoms, experienced being bullied into unprotected sex.

(3) *PrEP Use*: Some felt freer to venture out and become more sexually active, reporting multiple partnering. They were not concerned about exposure to STDs; rather, their main concern was being protected from exposure to HIV. Some mentioned prospective partners were routinely dishonest about being on PrEP or not using it consistently. Some blamed Chem-Sex for causing this problem. One Caucasian man witnessed a party of binging for several days, which caused a lapse of PrEP medication.

(4) *PrEP Efficacy*: Most respondents were not aware that PrEP was not 100% effective and with drug use, the efficacy rate was significantly reduced. It was surprising to hear that one respondent came in contact others who believed PrEP protected against STDs as well. Some questioned the long-term side effects of PrEP and felt it was hazardous.

(5) *Antibiotic Efficacy*. Most were overconfident, with the belief that antibiotics had a100% effective rate and the ability to cure all STDs. Some mentioned STD-infected individuals who did not wait until antibiotic treatment was finished; instead, they blatantly ventured out prematurely to infect others with little concern. Again, drug use was identified as being a catalyst, causing people to engage in unprotected sex while under the influence. Some mentioned the need for consistent HIV/STD testing.

(6) *Disclosure /Inquiry of HIV/STDs Status*. Some believed honesty was important, but many felt insecure about asking partner's status because it was viewed as a "dealbreaker." These individuals were hesitant to ask or disclose for fear of being rejected. Others just assumed "everyone lies;" hence, they did not consider self-disclosures reliable. It was apparent that sexual gratification took precedence over safety and, some were willing to place themselves in peril for a hook-up. Respondents said they found it "laughable" because it's common for most MSM to have experienced "multiple STDs." Again, this lack of concern may be due to over-reliance upon antibiotic efficacy or because they are taking PrEP, which would explain why most minimized STD exposure/transmission.

(7) *Digital Technology: Influence on Sexual Behavior and Public Safety*. While phone dating apps are widely used, respondents agreed they promote risk-taking behaviors and anonymous partnering along with drug abuse. One respondent criticized a website called *Barebacking in Real Time* for actively encouraging subscribers to engage in condomless sex. Some respondents felt the corporate owners of digital platforms were more interested in selling subscriptions that promote sex than safety. If PrEP is displayed on a phone app, it's a paid advertisement which brings in more profits for the company.

Some claimed there is a lack of information about STD/HIV free testing. On the other hand, one respondent pointed to the phone apps *Jack'd* and *GetMen*, which this respondent felt addressed these issues by offering PrEP at a discount, promoting condoms and STD/HIV testing. One respondent indicated phone apps should screen and eliminate subscribers who use this platform to bully or promote racist comments.

Alcohol and Substance Abuse.

Several respondents used alcohol/illicit substances during casual sexual encounters to enhance the experience, feel more confident and loosen up inhibitions. Some used crystal meth or cocaine with a single partner or in a party setting with a group of men (10-15) in a hotel room. Some indicated obtaining cocaine or crystal meth was the desired goal and not sex, and gladly traded sexual favors for drugs. Others used alcohol and marijuana in careful moderation to just feel relaxed but remained aware of their surroundings. Some men were very cautious of becoming intoxicated, recalling bad experiences while under the influence. They admitted being intoxicated led to becoming infected with HIV/STDs or being violated/abused. Hence, these men preferred to totally abstain from the use of alcohol and substances, especially in the case of anonymous encounters met through apps or in-person. Those seasoned veterans who frequented bars/clubs warned about predators seeking to take advantage of an intoxicated person who could be easily robbed or worse. Finally, some who found themselves stuck in a "revolving door of drugs and sex" and felt life took a dark turn but were now trying to get mental health services to recover. These expressed the need for more available services for the MSM community.

Impact of COVID-19 Pandemic

A considerable number of respondents took heed to the CDC and NYS Health Department safety warnings, limited social contact, and were vaccinated to protect themselves and loved ones. Others ignored the warnings and were caught up in underground parties which took place in parking garages, basements, and friends' homes. Some indicated the pandemic did not interrupt sex-seeking activities, in fact. they were more sexually active with more free time on their hands. There were those who felt depressed because the bars/clubs they normally frequented were shut down during the height of the pandemic. As a result, those persons found other clandestine outlets and became sick along with their friends. A negative light was cast on phone apps, which instead of urging subscribers to be safe, were offering discounts to sign up. Respondents felt these platforms were encouraging anonymous hook-ups despite the health dangers. One respondent said it was not the fault of the phone apps. He felt the responsibility rested on the individual and, in his case, he chose to gamble his health for the sake of sexual pleasure. In contrast, some did use phone apps for virtual encounters to stay safe.

CHAPTER VIII: DISCUSSION

RESTATEMENT OF HYPOTHESES

This study explored the relationship between the use of phone dating applications among men who have sex with men and risk-taking behaviors compared to other methods used to connect to casual sexual partners, by testing three hypotheses:

***Hypothesis #1*: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to be HIV negative, young, Caucasian, college-educated and earn more than $75K per year.**

Findings revealed a lack of support for Hypothesis #1. Analysis of frequencies and percentages revealed only three of the five proposed demographic characteristics suggested in Hypothesis #1 were observed among phone app users: HIV Status, Age, Education Level. While most phone app users were HIV negative, under the age of 35 and college-educated, less than a quarter of app users identified as Caucasian; in fact, the vast majority were African American. Furthermore, annual income levels for app users were less than $75K.

***Hypothesis #2*: MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in High-Risk Sexual Behaviors[28], when controlling for Mental Health Issues (Depression[29]/Sexual Compulsivity[30]); Alcohol/Substance Abuse and Health Beliefs/Risk Perceptions.**

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[28] High Risk Sexual Behaviors, as evidenced by: a) higher number of sexual partners (with the last year), b) higher number of unprotected oral/anal encounters (within last year), c) failure to disclose HIV/STD status to partner(s); d) failure to use PrEP to protect against HIV, e) history of multiple STDs, f) serial/multi partnering, g) anonymous partnering and h) Offer/Solicit Sex for Money.

[29] Depression level was measured by *Beck's Depression Inventory Scale*.

[30] Sexual Compulsivity Level was measured by *Sexual Addiction Screening Test (SAST-R)*

A multiple linear regression analysis was performed to determine which of the Independent Variables predicted the Dependent Variable (High Risk Sexual Behavior). The focal Independent Variables were: 1) Method Used to Connect with Potential Sexual Partners (Phone App, Internet or In-Person), 2) Hours Spent in Sex-Seeking Activities and the common covariates were controlled, including 3) Risk Perception/Beliefs, 4) Alcohol and Substance Abuse, 5) Mental Health Issues (Depression/Sexual Compulsivity) and 6) Demographic Characteristics (HIV Status, Age, Race, Education Level and Income Level).

***1. Method Used to Connect and High-Risk Sexual Behaviors*:** Findings revealed no statistically significant relationship between the Independent Variable *Method of Contact* (App/Internet or In-Person) and the Dependent Variable *High Risk Sexual Behavior*. There were respondents across all methods who actively engaged in various unsafe practices, including: anonymous partnering, simultaneous (group sex) and/or multi-partnering (multiple sex partners), solicitation of sex for drugs (vice versa), failure to use condoms for oral encounters or anal intercourse (receptive/insertive), failure to disclosure HIV/STD status to potential partners or inquire about the potential partner's HIV/STD status *prior* to the sexual encounter and being infected with STD (syphilis, gonorrhea and/or chlamydia) within the past year.

***2. Hours Spent in Sex-Seeking Activities and High-Risk Sexual Behaviors*:** Findings showed a *significant* relationship between Independent Variable and Dependent Variable. These results harmonize with the prior research findings Cooper et al. (2000) who observed those who spent more than 11+ hrs. in online sex-seeking activities were categorized as "cybersex compulsive" (p. 1).

3. **Mental Health Issues (Depression /Sexual Compulsivity)**: Results revealed a *statistically significant relationship* between High-Risk Sexual Behavior and Higher Levels of Depression as measured by Beck's Depression Inventory Scale. Furthermore, findings likewise revealed a *statistically significant relationship* between Sexual Compulsivity (as measured by Sexual Addition Screening Test (SAST-R)) and HRSB. These findings align with prior studies which found depression and sexual compulsivity predict risky sexual behaviors (Coleman et al., 2010 and Parsons et al., 2012).

4. **Alcohol/Substance Abuse:** Findings revealed *no statistically significant relationship* between Alcohol/Substance Abuse and High-Risk Sexual Behaviors. These results were surprising, given the abundant evidence from prior studies showing a strong link between the use of Alcohol /Substance Abuse and unsafe sexual behavior (Batchelder et al., 2017; Beymer et al., 2014; American Society of Addiction Medicine, 2017; Boonchutima & Kongchan 2017; Chew-Ng et al., 2013; Green et al., 2015; Irvin et al., 2015; Klein, 2011; Maulsby et al., 2014; Maxwell et al., 2018; Ostergren et al., 2011; Pakianathan et al., 2016; Phillips et al., 2015; Reisner et al., 2014; Young & Shoptaw, 2013 and Whitfield et al., 2017).

Interestingly, the responses derived from qualitative interviews revealed some respondents used alcohol and substances to relax and release inhibitions, with methamphetamine being the favored party drug. Respondents were aware of the dangers of Chem-Sex. Some revealed stories of being violated or coerced to engage in unprotected sex while under the influence and became infected with HIV. Respondents attended sex parties where anonymous, multi-partnering took place with such illicit

substances being part of the festivities (party n' play). Respondents agreed it was not safe to over-indulge, particularly with anonymous hook-ups because of the dangerous risk of being robbed and/or assaulted.

5. Health Beliefs/Risk Perceptions Predict HRSB*:* The lack of accurate knowledge concerning sexual healthcare, coupled with a failure to recognize personal risk for HIV, STDs and/or COVID-19, were strongly tied to *High-Risk Sexual Behaviors*. Study results validated the theoretical constructs of the Expanded Health Belief Model (EHBM), which explains why some MSM engage in HRSB (Bauermeister et al*.,* 2013; Volk et al., 2012; Winfield & Whaley, 2002). Several respondents who used PrEP felt liberated from the looming fear of HIV exposure, which led to an increased level of sexual activity with multiple partners, increasing the risk of STDs. Some reported inconsistent use of PrEP, which happened during binge parties (Chem-Sex). Likewise, some HIV+ participants erroneously believed HAART medication was 100% effective, allowing recipients to remain undetectable (unable to transmit HIV infection to others). Furthermore, most respondents did not seem overly concerned about exposure to STDs and continued to practice condomless sexual activity (oral and anal) because they held to the belief that antibiotics were 100% effective. Participants related experiences about STD-infected persons who did not wait the recommended amount of time for treatment to be complete before rushing out to engage in unprotected sex, with little regard for partner's health.

The Addiction Model explained why certain participants engaged in sexual activity as a means of self-validation (acquisition/trophy collecting) and self-soothing from depression/boredom. Furthermore, some described feelings of detachment from

intimacy during sex activity, viewing one's partner as "an object." Elder et al. (2015) asserted low self-esteem prompts some MSM to seek sexual validation as a means of elevating low ego. Schaef (1987) suggested sexual compulsives struggle with underlying intimacy issues; "becoming preoccupied with a sexual fix until it becomes central to their lives" (p.11) Licoppe et al. (2016) described the driving mechanism behind CSB as an "overwhelming inner impulse dissociated from social attachments, fram[ing] the object of desire as a commodity;" hence, hook-ups are commonplace with no expectations attached (p. 2549).

Respondents who used phone dating apps often experienced a compulsive need to check and re-check the app throughout the day, which often disrupted work/school activities. Respondents described feelings excitement/positive self-esteem when other subscribers took notice of their app profiles, complimented photos and expressed interest to hook-up. Conversely, lack of attention led to low self-esteem, causing respondents to feel unattractive and rejected. These findings align with the observations of Levitin (2018) who compared phone dating apps to Las Vegas slot machines, where are cleverly "engineered to keep [user's] hands and eyes glued" to the screen in constant expectation *of a* possible reward." The Addiction Model explained why respondents openly engaged in unsafe sexual practices despite the existence of negative consequences. Indeed, sexual gratification causes the brain to increase the production of dopamine. These powerful neurobiological reactions explain why we observed reckless behavioral patterns among respondents without regard for negative consequences (Goodman, 2008, 2009; Sapolsky, 2011; Billieux et al., 2015; Gardner, 2015 and Dold, 2017).

6. Demographic Characteristics and HRSB: Findings revealed certain demographic characteristics predicted High Risk Sexual Behavior, while others did not: Neither Age, HIV Status, Educational or Income Level predicted HRSB; however, we did observe a *statistically significant relationship* between Race/Ethnicity and High-Risk Sexual Behavior among those who identified as Black or Latino. These findings harmonize with current data which shows MSM of color appear to be at greater risk for HIV/STDs than the general population. Across racial/ethnic groups, African-Americans accounting for 8,064 (26%) of newly diagnosed HIV cases, followed by Hispanics/Latinos with 6, 358 new HIV cases (21%). Finally, young Black and AfricanAmerican gay and bisexual men were most severely affected, representing 53% (2,740) of the newly diagnosed HIV cases among young gay and bisexual men (13 to 24 years old) (CDC: *HIV Surveillance Report*, 2021).

Hypothesis #3: **MSM who connect with potential sex partners through phone apps (compared to other methods used) are more likely to engage in COVID-19 Risk-Taking Behaviors.**

Regression analysis was performed to determine whether *Method Used to Connect with Potential Sexual Partners* (i.e., phone apps, Internet or in-person cruising) predicts *Pandemic Risk-Taking Behavior* when controlling for *Demographic Characteristics* (HIV status, age, race, education level and income level) and certain psychosocial factors, including *Health Beliefs/Risk Perceptions*, *Alcohol and Substance Abuse*, *Mental Health Issues (Depression/Sexual Compulsivity).*

Findings indicated the Method Used to Connect with Potential Partners (i.e., phone apps, Internet or in-person cruising), Hours Spent in Sex-Seeking Activity, Mental

Health Issues (Depression/Sexual Compulsivity) did *not* predict Pandemic Risk-Taking Behaviors; however, multiple linear regression analysis revealed Alcohol/Substance Abuse and Health Beliefs/Risk Perceptions *did* predict Pandemic Risk-Taking Behavior. Finally, findings revealed that none of the Demographic Characteristics (HIV Status, Age, Race/Ethnicity, Education, or Income Levels) predicted Pandemic Risk-Taking Behaviors.

As Halkitis (2020) aptly suggested the same factors responsible for unsafe sexual practice prior to the pandemic may lead some to engage in unsafe practices during the pandemic and ignore or minimize the risk for COVID-19 infection and transmission. However, mental health factors, specifically Depression was found to be a significant predictor for Pandemic Risk-Taking Behavior.

Recent studies revealed pandemic-induced isolation and loneliness, coupled with depression/anxiety, triggered persons to self-soothe with alcohol/illicit substances and risk-taking sexual behavior. "Loneliness, confusion and unemployment caused more people to either start using or increase their use of drugs or alcohol at a time when treatment centers and support groups were shuttered due to the public health crisis; furthermore, nearly one-third of people in the U.S. who drink alcohol or use drugs have increased their consumption since the pandemic began" (Agovino, 2021). An online survey was conducted among 518 MSM participants who were recruited through paid banner advertisements on Facebook and Instagram and Grindr. Findings revealed 20.5% increase in consumption among substance users, while 30.1% reported a decrease and 49.4% reported no change. Concerning binge drinking, 29.5% reported an increase, while 36.4% reported a decrease and 34.1% said consumption remained the same.

Participants reported a mean increase of 2.3 sex partners during COVID-19 (with a large range: 19 to 38 partners), with mean increase of 2.1 anal sex partners (range: 40 to 70 partners) with a minor increase in the mean number of unprotected anal sex partners (with a narrower range: 5 to 14 partners) and a small percentage (1.4%) who reported transactional sex during the COVID-19 lockdown. Those who reported an increase in substance use during lockdown were significantly more likely to report an increase in number of sex partners, anal sex partners and unprotected sex partners (Stephenson, Chavanduka et al., 2021).

ADVANCING PUBLIC HEALTH ISSUES AND SOCIAL WORK RESEARCH

Cisgender MSM of Color at Heightened Risk. In response to this serious public health concern impacting vulnerable sexual minorities, this New York City-based study project successfully recruited a diverse racial/ethnic sample of cisgender, MSM participants; in fact, almost 65% of subjects identified as African American, 10% Latino and 2% Asian/Mixed. Unlike prior studies cited in the Literature that recruited predominantly Caucasian samples, our study's convenience sample had less than quarter (23.81%) of Caucasian respondents. Although, respondents were not screened based on race/ethnicity, the online recruitment tools (*Craig's List* and *Get Out!)* may have attracted more respondents of color than the popular phone dating app *Grindr*.

Most importantly, the quantitative data obtained showed race/ethnicity was a *predictor* for High-Risk Sexual Behavior. Using the Caucasian segment of the sample as a reference group, multiple linear regression analysis identified Blacks and Latinos were more likely to engage in such unsafe sexual practices, leaving them at heightened risk for HIV/STDs. These findings were meaningful and aligned with nationwide data, which

indicated African-Americans made up 26% of newly diagnosed HIV cases, with 53% of the newly diagnosed HIV cases found among younger (13 to 24 years old) cisgender, gay and bisexual men of color (CDC: *HIV Surveillance Report*, 2021). Further, the qualitative interviews proved to be very revealing, we learned first-hand about the fear, shame, and stigma our African American respondents faced, such as being forced to conceal sexual preferences from homophobic family, co-workers, and the communities where they resided. Furthermore, several African American subjects were exposed to hostile, racist remarks from other subscribers while using phone dating apps.

Promoting LGBT Sexual Healthcare Among Communities of Color. The findings from our study, and supported by national data, strongly suggest more outreach efforts are needed among communities of color. This researcher suggests ads placed strategically in waiting areas of local bus stops/train stations, within popular newspapers, and on trending social media platforms may encourage young cisgender MSM of color to seek out discrete, free/low cost clinics for testing/treatment and access to PrEP/HAART medications.

One of the best ways to shed light on the current sexual health crisis and influence young cisgender MSM of color is through the concerted efforts of outwardly gay/bisexual celebrities. It's been 10 years since former NBA Basketball star, 34-year old Jason Collins (who was raised in a close-knit Christian family) became the first major U.S. sports star to *come out* publically. At the time of Collins' announcement, President Barak Obama stepped forward with these encouraging words of support, "A lot of young people out there who are gay or lesbian, who are struggling with these issues, to see a role model who's unafraid, I think it's a great thing," (Lioz, 2013).

Those in the entertainment industry have opened the doors for much-needed dialogue about the harmful impact of homophobia among families and communities of color. During a candid interview with *Out Magazine*, 53-year old film producer Lee Daniels (best-known for his work in the movie, *Precious*) spoke out about his own painful childhood memories of physical abuse by his father, "When I came out it was because I loathed my dad so much — I couldn't understand how you could, with an extension cord, beat a 45-pound kid just because he's aware of his femininity." In this same interview, Daniels candidly spoke about his struggle to overcome methamphetamine abuse (Eggenberger, 2013). In conjunction with the debut of his album *Channel Orange,* Frank Ocean 35-year old singer/songwriter and rapper, published a letter on his social media webpage to share his personal experiences as a bisexual man of color with fans (Powers, 2012).

Indeed, LGBTQ celebrities (musicians and sports stars) have the unique opportunity to speak out on social media platforms to fight against homophobia and encourage young persons of color to come out proudly to families , coworkers and avail themselves of essential sexual healthcare, mental healthcare and alcohol/substance treatment.

Building Upon Prior Research Findings. Prior researchers[31] suggested certain psychosocial factors predicted risk-taking behavior among MSM who used the Internet and phone dating apps for sex-seeking purposes including, substance abuse and mental health issues. These prior research studies provided a firm foundation and rationale for

[31] Cooper et al., 2000; Chaney & Drew, 2003; Halkitis et al., 2005; Coleman et al., 2010; Klein, 2011; Parsons et al., 2012; Chew-Ng et al., 2013; Chaney & Burns-Wortham,2014; Beymer et al., 2014; Lehmiller & Ioerger, 2014; Goedel et al., 2016; Whitfield et al., 2017.

our present endeavor to gather further relevant data about substance abuse, mental health issues and High-Risk Sexual Behaviors (HRSB) among cisgender MSM who used phone dating apps to connect with potential sex partners (compared to those using other methods).

Surprisingly, our results indicated alcohol and substance abuse *did not* predict HRSB; however, qualitative interviews revealed alcohol/drug fueled reckless sexual encounters, leading to serious consequences. Two respondents candidly recalled how the alcohol/drug abuse led to physical abuse/sexual assault and HIV/STD infection.

Oftentimes, survivors of alcohol/drug-facilitated sexual assaults blame themselves and perpetrators go unpunished, only to prey upon other vulnerable persons. Such assaults among MSM often go unreported to the police for fear of exposure and further shame. Hequembourg et al. (2015) examined the lifetime patterns of Adult Sexual Assault (ASA) and associated risks among a purposive sample of 183 gay and bisexual, cisgender men (18-35 years old). Results indicated 67% of subjects consumed alcohol and/or drugs prior to the ASA incident and 76.4% believed the perpetrator had consumed alcohol and/or drugs prior to assault.

This writer applauds the efforts of RAINN (Rape, Abuse & Incest National Network) who are doing excellent work to draw attention to and protect the MSM community from such abuses. This organization offers 24/7 telephone assistance to victims of sexual abuse. This researcher suggests RAINN-sponsored public-service messages highlighting the experiences of sexual assault survivors could draw public attention to these sensitive issues and educate many who routinely engage casual sex-seeking activities (via phone/Internet or in-person) about the dangers of associated with

alcohol/drug abuse and anonymous hook-ups. This type of public outreach effort would empower others to speak out and promote safety for potentially vulnerable sexual minorities.

Promoting Mental Healthcare and Sex Education Programs.

Quantitative findings revealed Health Beliefs/Risk Perceptions and Mental Health Issues (Depression/Sexual Compulsivity) were *predictors* for both High Risk Sexual Behavior (HRSB) and Pandemic Risk-Taking Behavior (PRTB). Furthermore, the increased consumption of alcohol/substances was observed among MSM respondents who engaged in reckless sexual behaviors during the pandemic. The research data gathered by this study, while not generalizable, underscores the need for mental healthcare, addiction counseling and sex education programs among high-risk populations.

This study enhanced our understanding of the unique psychosocial factors that contribute to risk-taking behaviors among cisgender MSM. Attention was focused on the urgent need for innovative, effective interventions and prevention strategies to reduce risk-taking behaviors among this vulnerable population. The insight gained from this study, inspired this researcher to create LGBTQ discussion groups within a local Harlem-based mental health clinic setting. This venture will be function under the umbrella of the Adult Outpatient Department, as supplemental service to be run by well-trained facilitators, to provide LGBTQ clients with a safe space to express themselves among peers. Here, we hope to explore about the challenges of connecting with casual sexual partners, implementing safe sex practices, while addressing co-morbid mental health and alcohol/substance abuse issues. Furthermore, we will seek to collaboration with LGBTQ

organizations such as GMHC to facilitate the distribution of sexual health education among communities of color and make HIV/STD testing and treatment available to those at greater risk.

The Responsibility of Social Media Companies to Promote Public Safety. This study sought to raise public awareness and advocate for free/low-cost comprehensive sexual and mental healthcare services for the MSM community to reduce the elevated rate of HIV/STDs among this vulnerable population. Can online platforms such as dating apps provide a discrete means to reach many MSM who do not have access to sexual health services?

Huang et al. (2016) reviewed popular dating apps to determine whether these digital platforms offered essential sexual health information to their subscribers. Unfortunately, findings revealed only nine (9) out of the sixty (60) dating apps reviewed by this research team provided sexual health content to subscribers. Hence, researchers were left to conclude, "The majority of sex-related apps and dating apps contained no sexual health content that could educate users about and remind them of their sexual risk" (p. 16). During the past six years, social media companies are finally stepping up to the challenge of promoting sexual health care to users.

Stafylis et al. (2022) compared the varied success of social media sites, dating apps, and information search sites to promote HIV self-testing among cisgender MSM of Color. Researchers examined the efficacy at three different digital platforms: (1) social media sites (*i.e.,* Facebook, Instagram), phone dating apps (*i.e.,* Grindr, Jack'D), and information search engines (*i.e.,* Google, Bing). Using online ads, a convenience sample of 259 young (18-30 years old) Black and Latino MSM participants (at risk of HIV

exposure) was gathered. Findings revealed 177 (69.7%) respondents ordered a home HIV self-test kit. Most of the self-test kits were ordered from ads placed on dating apps. Researchers concluded, the use of popular dating apps could provide an efficient way to promote HIV self-testing among young MSM of Color.

Most recently, CNN (2023) announced a much-needed public health initiative promoted by the popular gay men's phone dating app, *Grindr,* who has partnered with the Centers for Disease Control and Prevention (CDC), Emory University and Building Healthy Online Communities to offer a free at-home HIV tests to its U.S. subscribers. This cost-free, FDA-approved test kit, *OraQuick*, which is administered by swabbing the gums with results are available within 20 minutes.

This writer observes such efforts are long overdue and somewhat short-sighted in their approach towards promoting sexual health awareness because they are focusing most of the attention on HIV testing, while overlooking the importance of controlling the transmission of sexually transmitted infections such as syphilis, gonorrhea, and chlamydia.

British researchers Giles et al. (2022) explored online privacy/safety/sexual health concerns among British phone dating app users and the tools social media companies might utilize to protect users. "Participants commented that discussion of sexual health often prioritized HIV status over other elements of sexual health" (p. 284). Additionally, writers pointed to the "significant role for the commercial operators to continue developing tools that . . . boost educational efforts, for example, concerning PrEP and HIV status" (p. 286).

Public Policy and Social Justice. This study's findings could be used to inform public policy advocates and legislators about ways to protect consumers by holding social media companies who provide digital dating services accountable. In 2016, one of the most popular dating apps, *Grindr* sold 60% of its holdings to the Chinese gaming company Kunlun Group for $93 million. While *Grindr* did not disclose the price of the full acquisition, the Chinese media giant is willing to pay another $152 million for full control (Reyes-Velarde, 2018). Given the immense popularity associated with such platforms and the huge profits owners derive from app subscriptions, we must take a closer inspection of how this global platform are being used and whether owners are monitoring user behavior and safety.

It is not surprising that these social media platforms are being used to traffic illegal substances. In an NBC investigation, reporter Lourenco (2018) learned from reliable sources that the popular dating app *Grindr* functions as easy-access conduit, "allowing men to have sex and drugs delivered to their door instantly." While *Grindr* made some attempts to "address the buying, selling and promoting of drugs on its platform . . . those who use the app say it is still home to a robust market for illicit substances." In a startling confidential statement, one drug dealer told the NBC reporter, "[*Grindr*] gives me more clientele than I would normally get on the street [and] is safer [for the dealer] since he doesn't have to worry about confrontations with other dealers about who sells in what area."

In addition, to serving as an open channel for drug trafficking, WGBH drew attention to the sexual exploitation of minors on gay dating apps such as *Grindr*. In a disturbing account investigative team, McKim et al. (2021), readers learned about

German Chavez who was only 14 years old when he began using *Grindr* to find adult men to pay for sex to help his "trouble, single mother pay bills." Now 25 years old, German warns other vulnerable teen-age boys to stay away from *Grindr*, "Things that can be bad can happen to you, possibilities of death, [going] missing or being locked in a room where you can be taken advantage of as a sex object." Although *Grindr* claims users must be over 18 years old to subscribe, "the app is teeming with underage gay, bisexual and questioning boys." Adding his support to this critical investigation, Dr. Jack Turban of Stanford University School of Medicine spoke out against the lax attitude of social media companies. "[Grindr] creates an easy place for sexual predators to look for these kids, and it is also [Grindr's] fault for knowing that this is happening and not doing anything about it."

Indeed, this a complicated legal question of user privacy versus protecting vulnerable minors from sexual predators. *Grindr* claims under its terms of service that users must be 18 and older, "but cautions it makes no effort to verify identities." *Grindr* claims such legal protection under the 1996 federal law, known as Section 230 of the Communications Decency Act, which "shields [social media companies] from legal liability for content created by others." One the one hand, some supporters profess "[this law] is one of the most valuable tools for protecting freedom of information on the Internet. Without it, social media platforms like *Facebook* or dating apps would not be able to operate because they would be mandated to "vet every review, article or comment published on their sites."

This researcher questions whether social media companies should be permitted to use this law as justification for a laissez-faire approach, turning a blind eye to unsafe/ illegal activities mentioned above and leaving a vulnerable public to use digital platforms at their own risk. Furthermore, we must ask whether surveillance of user content could impede the right to privacy among consenting adults or whether the responsibility to protect the larger community from harm is more compelling? This researcher suggests policymakers to re-examine 1996 federal law, Section 230 of the Communications Decency Act, considering the ongoing events described above and take action to impose needed limitations on social media companies to protect public safety.

Addressing the Rise of Monkey Pox (MPV). As of November 2022, the Center for Disease Control and Prevention (CDC, 2022) reports 78,379 cases worldwide, with 28,709 cases in the U.S. of which 4,127 occurred in New York State and 3,739 in New York City. Current findings suggest cisgnder gay, bisexual, and other men who have sex with men (MSM) represent the majority impacted by the recent monkeypox outbreak; however, as with HIV/STDs, anyone (regardless of sexual orientation or gender identity), could contract MPV. The CDC (2022) published these potential avenues of infection: 1) Direct contact with a rash or sores of someone who has the virus; 2) Contact with clothing, bedding and other items used by a person with MPV and 3) Prolonged face-to-face contact. For the most part, MPV is being contracted during oral, anal and vaginal sex and other intimate contact, such as rimming, hugging, kissing, biting, cuddling and massage. Medical researchers are trying to determine if the virus can likewise be spread through semen, saliva, feces and other body fluids.

During the height of the Monkey Pox outbreak of Summer 2022, the distribution of the vaccine throughout New York City was fraught with technical difficulties, communication issues and a major shortage of doses. In early July 2022, the first doses became available at Chelsea Sexual Health Clinic, but appointment openings were filled in a matter of seconds. The individuals who signed up for vaccines often waited hours in long lines at the clinic site as the demand for the vaccine skyrocketed while supply fell seriously short. In response to the surging demand, the New York City Department of Health and Mental Hygiene made 6,000 new doses available, but the appointment portal experienced technical glitches. Current Health Commissioner, Ashwin Vasan, was not quick to act, but merely tweeted a short apology and a promise that the city would try to do better. Finally, on August 4, 2022, the Health Department made 23,000 new vaccine slots available on the portal. In addition, five new vaccine sites were opened to accommodate the growing number of cases in the city, which were primarily observed among men who have sex with men. Concerning the current threat of MPV, much more could be done to give the LGBTQ community the opportunity to receive free vaccines at a conveniently located sites throughout New York City along with free/low-cost treatment for those who may find themselves infected. Again, social media platforms, particularly dating apps can do much to reduce stigma, provide Monkey Pox facts/education, encourage testing and vaccination.

STUDY LIMITATIONS

Eligibility Screening Process. The study was initially set up for in-person sample recruitment and data collection to take place with face-to-face interviews; however, COVID-19 pandemic restrictions necessitated online sample recruitment and telephonic interviews to gather all data. Lack of in-person contact with prospective respondents made it difficult to determine with certainty whether each applicant met eligibility criteria or whether some intentionally assumed a false identity for the purpose of financial gain. There were several respondents who answered the advertisements placed on Craigs List who attempted to use different names and telephone numbers to assume multiple false identities. A few individuals went so far as to falsify sexual orientation to gain entrance into this study, whose target population was cisgender gay, bisexual and men who have sex with men (MSM). Some applicants called from outside the NYC area, using a Google number or out-of-state area code, pretending to be a NYC resident. One prospective subject claimed he lived in the Empire State Building. This researcher excluded 14 crafty scammers who presented with dubious identities.

Limited Sample Size. A larger sample size was initially envisioned; however, eighteen (18) participants who cleared the eligibility screening process and signed consent forms, failed to show up for the Phase I. Such respondents were contacted and given the opportunity to reschedule but failed to show up. Despite the limitations imposed by online recruitment/data collection, time constrains and financial resources, this researcher was able to recruit a convenience the sample to 42 MSM subjects.

Pandemic Shutdown Impacts the Preferred Method Used to Connect. The urban landscape of New York City has one of the largest LGBT populations in the

country; thus, being a resident offers a vast dating pool of casual partners. Unfortunately, this golden opportunity to new prospects was abruptly halted when popular gay mens' bars/clubs, gym and bathouses were forced to shutdown along with all citywide indoor spaces during the COVID-19 Pandemic (Leonhardt, 2015).

While the study's convenience sample appeared to be well-distributed across the preferred methods (phone apps, websites and in-person cruising) used to connect to potential sex partners, this researcher is uncertain whether the method identified on the Questionnaire Survey reflected the particpants' true preference. Perhaps respondents were forced to alter their normal routine and adapt dating tools to fit the new Pandemic landscape. A number of in-person crusiers decided to subscribe to phone dating apps during the shutdown, while others who thrived during the pre-Pandemic bar scene, recklessly sought after underground parties/soirées through digital platforms or by word-of-mouth invitations. Furthermore, the onslaught of the Pandemic likely altered the way phone dating apps were utilized (home vs. public spaces). Under pre-pandemic conditions, this researcher suggests phone app users might ordinarily have taken their quest for casual sex partners into public venues, rather than pursue sexual companionship from the safety of their homes.

Data Inaccuracy Due to Self-Reportage and Response Bias. Obtaining accurate responses from survey questionnaires can prove challenging for the following reasons. Some subjects may answer *yes* to a question; although, they may only had a *one-time experience*. Other participants may have responded affirmatively only if the experience occured on a *regular basis*. Salters-Pedneault (2018) suggested binary answers (yes/no) may prove "too restrictive," however; the use of numerical scales may

likewise yield inaccurate data with subjects giving "an extreme or middle [of the road] answer to all questions." These apparent obstacles were overcome through researcher-directed interview sessions for both phases of data collection. This approach assisted respondents to fully understand questions, which likely yielded more accurate responses.

Inherent with self-report methods of gathering data is the danger of encountering subjects who tend to modify responses to appear *socially acceptable* to the interviewer. Harrison (1997) suggested studies that investigate "socially disapproved and illegal behaviors" face certain challenges due to feelings of shame or hesitancy on the part of subjects to disclose "self-incriminating behavior(s)" (p. 18). For example, subjects may feel reluctant to relate personal experiences about the use of illegal substances or the exchange of sexual favors for money/drugs. Such participants might be embarrassed to provide an honest answer for fear of being adversely judged or because a self-incriminating admission could lead to legal repercussions.

Fenton et al. (2001) noted the main challenge associated with sex survey research was gathering unbiased and precise measures, "Sexual behavior is a largely private activity, subject to varying degrees of social, cultural, religious, moral and legal norms and constraints" (p. 84). Fortunately, this researcher, an experienced mental health practitioner, drew from practiced engagement techniques to reduce participants' feelings of vulnerability, shame or embarrassment. This researcher suggests Pandemic safety restrictions, necessiating the use of phone interviews for collecting data may actually have worked to our advantage. Novick (2008) observed this method may reduce social discomfort when used to gather qualitative data, "Telephone interviews are [often] depicted as a less attractive alternative to face-to-face interviewing. [Yet] telephones

may allow respondents to feel relaxed and able to disclose sensitive information" (p. 391). This researcher observed paricipants seemed relaxed and enthusiastic engaged in the interview process. Finally, providing each subject with a printed confidentiality statement and identifying code (eliminate use of names) likely gave an added layer of comfort that any senstive disclosures were being carefully safeguarded.

Omission of Nitrous Oxide (Poppers) on the Questionnaire Survey. The Questionnaire Survey asked respondents what types of party drugs were used to relax and enhance sexual encounters and which drugs were traded for sexual favors. Respondents chose from these options: Cocaine, Ecstacy, Crystal Meth or Ketamine (*See*, *Appendix B, Part VI - Alcohol and Substance Use, Q. 33 and Q. 35*). This researcher did not include the inhalant, known as *poppers*, which contains amyl nitrate and butyl nitrate. Amyl nitrate is an inhalable prescription medication used to treat chest pain. According to a recent published NY Times article by O'Neill (2022), the sale of amyl nitrite has been illegal in the United States since 1968; however, alkyl nitrites can still be purchased over-the-counter and have a similar effect to those of amyl nitrite when inhaled. According to Guarnotta (2022) this party drug causes "blood vessel dialtion, muscule relaxation and sexual enhancement, [making anal insertion] less painful and more enjoyable." Poppers can be purchased in local smoke/vape shops, adult novelty stores or online; however, they are not approved by the Food and Drug Administration (FDA) and are not safe for consumption. They are packaged in small bottles similar to those of energy shots. They are sold under the guise of "air freshners" or "nail polish removers" (*Id*). Some common brand names are: "Rush, Super Rush, Iron Horse, Jungle Juice and Locker Room" (*Id*). When inhaled, these chemicals are quickly absorbed into the bood stream and the short-

term effects are felt in moments. Because euphoric senstations are brief, many repeatedly inhale this substance to prolong the experience. This substance carries serious short-term risks, including: "Dizziness, headaches, elevated body temperatire, low blood pressure, trouble breathing and blood oxygen problems" (*Id).* Poppers can cause "choking, asphyyxiation, seizures, coma and fatality" (*Id)*. Prolonged use can, over time, lead to more serious health outcomes, including "red blood cell damage, lowered immunity function and damage to heart, liver, kidneys and lungs" (*Id)*.

The research team of Lui et al. (2013) found "use of poppers, amphetamines, and sexual performance-enhancing drugs were independently associated with one or more indices of sexual risk." In the initial draft of the study's Questionnaire Survey, this researcher included the use poppers as a popular party drug choice for Q. 33 and Q. 35. However, during final stages of Questionnaire Survey design, this writer came across a fascinating NBC News Investigation by Lourenco (2018), which highlighted the research endeavors of Dr. Jermaine Jones, a substance abuse researcher from Columbia University's Psychiatry Department. The article cited his astute observation, "gay men's disproportionate drug use and Grindr's reputation as a *parTy and play platform* led him to use the app to recruit participants for a methamphetamine addiction study."

This writer contacted Dr. Jones in 2018 for his professional advice about the content of the proposed study and the design of the Questionnaire Survey. During the course of a 90-minute meeting with Dr. Jones at Columbia University's Psychiatric Department, he was kind enough to review the Questionnaire Survey, found it to be well-designed and added the suggestion to eliminate the choice of poppers from the

Questionnaire Survey because other party drugs such as Cocaine, Ecstacy, Crystal Meth were the trending choices among MSM.

During the study's qualitative interviews, this researcher casually mentioned the use of poppers, but none of the 11 respondents used these inhalants during sexual encounters and preferred two types of party drugs (Cocaine and Crystal Meth). Some of the older respondents 50+ years, recalled when these inhalants were popular during the height of the Disco era. Apparently poppers are enjoying renewed popularity. A ccording to O'Neill (2022) "poppers were popularized by gay men during the 1970s for sex and partying" and enjoyed arecent resurgence of popularity at *100 Gecs* sold-out concert, during a rowdy fashion week party at the *Blond*, and [surfaced again] on the sweaty dance floors of *Nowadays*." This researcher anticipates this drug will have return to the party drug menu once again and should be closely watched.

CONCLUDING SUMMARY OF RESEARCH STUDY

Significance of Findings. This study examined the serious sexual health disparity (increased rates of HIV and STDs) impacting cisgender men who have sex with men (MSM) with the goal of identifying the factors that directly contribute to high-risk sexual behavior (HRSB) and risk-taking behaviors during the COVID-19 Pandemic. This research project questioned whether the method used to connect with casual sex partners was responsible for HRSB among MSM. Hence, sexual risk-taking behaviors were compared among phone app users, Internet users and those who preferred crusing for hook-ups in public venues to determine whether the method used was the key catalyst for HRSB. Although the use of phone dating apps opened the gateway for greater access to variety of casual sex partners, the method used to connect was *not* linked to HRSB.

Although Hypotheses #2 and #3 suggested phone app users would exhibit a higher level sexual risk-taking behavior than those subjects who used other methods, HRSB was observed across all methods.

Looking at the influence of certain psychosocial factors, findings revealed a statistically significant relationship between HRSB and Mental Health Factors (Depression and Sexual Compulsivity). The theoretical models, Addiction Model, and the Expanded Health Belief Model, were used to lay a foundation for this study. The Addiction Model explained why certain participants engaged in sexual activity as a means of self-validation (acquisition/trophy collecting) and self-soothing to relieve depression, boredom, and anxiety.

Based upon prior research studies discussed in the Literature Review, it was assumed that Alcohol and Substance Abuse would be a key factor leading to HRSB; but the result were surprising: no statistically significant relationship exist between these two variables. However, qualitative interviews revealed some respondents regularly used alcohol and illicit substances to relax and release sexual inhibitions, with methamphetamine and cocaine being the favored party drugs. Every respondent was aware of the dangers resulting from excessive consumption of alcohol and illicit substances leading to impaired judgement; yet some related gruesome accounts of being violated or coerced to engage in unprotected sex while under the influence and became infected with HIV. Others recounted incidents of intoxication, where they were robbed and/or assaulted. Concerning pandemic risk-taking behavior (PRTB), findings revealed some ignored COVID safety guidelines and indulged in sex parties where anonymous, multi-partnering took place with illicit substances being part of the festivities (party n'

play). Some reported no change or a greater number of sex partners during the pandemic. Interviews revealed isolation and loneliness during the pandemic lead some to feel depressed and anxious, leading some to self-soothe with alcohol/illicit substances and risk-taking sexual behavior.

The Addiction Model lent support to findings that Mental Health Factors played a key role in sexual risk-taking. It is understandable why some participants engaged in reckless sexual behaviors as means of coping with depression and anxiety. Additionally, those who reported a higher number of weekly hours (11+) spent in sex-seeking activities were engaged in HRSB. For some who suffered from mental health issues, sex-seeking activities become highly addictive and provided a means of elevating low self-esteem through self-validation (acquisition/trophy collecting to evince one's masculine prowess through sexual conquest) and generates a means of self-soothing from depression, boredom, and anxiety. Application of this model offered a clear explanation why some openly engaged in unsafe sexual practices despite the potential for negative consequences. Neurobiological research has shown the pursuit and acquisition of sexual gratification causes the brain to increase the production of dopamine. These powerful neurobiological reactions explain why reckless behavioral patterns were observed among some respondents without regard for negative consequences.

The Expanded Health Belief Model (EHBM) provided a solid theoretical foundation, providing a clear explanation for the statistically significant relationship found between Health Beliefs/Risk Perceptions and HRSB. It was observed that misinformed sexual health beliefs led to reckless sexual behaviors among some subjects who minimized the personal risk for HIV/STDs or COVID infection. Likewise, some

held to misinformed beliefs about medication efficacy, such as PrEP and antibiotics having a 100% efficacy rate. Those subjects believed these medications provided *a fool-proof safety net* in the event they were exposed to HIV or STDs. Some minimized the consequences of becoming HIV-infected. These respondents reasoned that having AIDS no longer represented a death sentence because HAART medication was available; however, no one was aware of the long-range health consequences of with living with an impaired immunity system (heart, lung and kidney diseases or cancer).

Importance of Research Findings. This research project identified the key factors responsible for High-Risk Sexual Behaviors among MSM; namely, Mental Health Factors (Depression/Sexual Compulsivity) and faulty Health Beliefs/Risk Perceptions. Therefore, it is concluded that greater access to mental healthcare and sexual healthcare/education is sorely needed to reduce the increased rates of HIV and STDs among this vulnerable population. It was observed that certain subpopulations, specifically young Black and Latino MSM, were at higher risk for HIV/STDs when compared to Caucasian MSM. The recent rise of Monkey Pox over the past year likewise points to a need for solid education efforts among the LGBTQ community about viral transmission and access to free or low-cost vaccines and treatment.

Implications for Further Research Endeavors. Digital technology has a powerful, pervasive global influence. Hence, it seems logical to harness the incredible power of digital technology and the pervasive influence of social media to provide solutions for advancing sexual healthcare education and access to testing and treatment. Findings indicated that certain pilot studies may prove useful to test the efficacy of free

phone apps to provide regularly updated online Q&A platforms about sexual healthcare, access to free or low-cost testing, prevention, and treatment.

Outreach efforts need to increase on both urban and rural levels. Urban residents could benefit from the creation of pilot studies to explore the efficacy of pop-up kiosks manned by volunteers (medical residents and social work interns) to provide free/low-cost sexual healthcare education to the community (comparable to those testing and information tents and mobile units, which were utilized during the COVID-pandemic to disburse test kits and vaccines). Those MSM residing in rural areas where LGBTQ support/affirmative care are seriously lacking, could benefit from a pilot study implementing mobile vans to disseminate educational materials and access to testing/treatment in outlying areas. Such a pilot study could be created to determine the feasibility of utilizing mobile vans to service rural areas where elevated rates of HIV, STDs and Monkey Pox need to be addressed. These mobile units would be in an excellent position to provide free/low-cost sexual healthcare education where these services currently do not exist. Again, these traveling units could be staffed by medical residents/social work interns to reduce costs and advance research efforts. Volunteers would earn college credits as part of a university program for medical and social work studies.

Finally, this study project would be worthwhile replicating to focus on the sexual health disparity impacting transgender women across the U.S. The CDC (2022b) published its *HIV Surveillance Report (2019-2020),* which found 42% of the 659 transgender women subjects tested HIV+ in a study conducted across seven major cities, including Atlanta, Los Angeles, New Orleans, NYC, Philadelphia, San Francisco, and

Seattle. The Human Rights Watch (2018, November) indicated certain risk factors associated with transphobia and marginalization have contributed to high HIV infection rates. Additionally, alcohol and substance abuse, sex work, incarceration, homelessness, unemployment, family rejection, discrimination, limited access to healthcare and negative experiences accessing such are among some of the numerous factors which make this group extremely vulnerable and desperate need of social work advocacy and intervention.

Table 1 *Frequencies and Percentages of Demographic Characteristics*

	N (%)
Age	
18 - 25 years old	6 (14.29)
26 – 35 years old	20 (47.62)
36 – 50 years old	9 (21.43)
>50 years old	7 (16.67)
HIV Status	
Negative	32 (76.19)
Positive	9 (21.43)
Unknown	1 (2.38)
Race/Ethnicity	
White	10 (23.81)
Black	27 (64.29)
Latino	4 (9.52)
Asian/Mixed	1 (2.38)
Educational Level	
High School Graduate	3 (7.14)
Some College/Associate's Degree	12 (28.57)
Bachelor's Degree	23 (54.76)
Master's/Post-Graduate Degree	4 (9.52)
Annual Income	
<25,000 per annum	9 (21.43)
25,000 – 50,000 per annum	14 (33.33)
50,000 – 75,000 per annum	11 (26.19)
75,000 – 100,000 per annum	7 (16.67)
>100,000 per annum	1 (2.38)

Table 2 - INTERNAL VALIDITY SCORES

	Cronbach Alpha Co-Efficient Score	Mean Inter-Item Covariance	Number of Scale Items
Dependent Variables (DV)	0.67	.16	12
High Risk Sexual Behavior			
Pandemic High-Risk Behavior	0.51	.18	4
Independent Variables (IV)			
Perception: Risks/Beliefs	0.38	.08	7
Alcohol/Substance Abuse	0.61	.28	4
Becks Depression Inventory	0.92	.35	21
Sexual Addiction Screening Test	0.85	N/A	N/A

DV= Dependent Variable; IV = Independent Variable
N/A = Not Applicable

Table 3A Frequencies and Percentages for Methods Used to Connect with Sex Partners

	N (%)
Phone Dating Applications	21 (50.00)
Internet Dating Sites	6 (14.29)
In-Person Cruising	15 (35.71)

Note: Valid percentages are reported in parenthesis

Table 3B

	N (%)
1 – 5 Hours Per Week	15 (35.71)
6 – 10 Hours Per Week	18 (42.86)
>11 Hours Per Week	9 (21.43)

Note: Valid percentages are reported in parenthesis

Table 4. Frequencies and Percentages for Health Beliefs/Risk Perceptions

	High Risk = 0	Medium Risk = 1	Low Risk = 2	No Risk = 3
Perceived Risk Level for Contracting HIV	5 (11.90)	11 (26.19)	16 (38.10)	10 (23.81)
Perceived Risk Level for Contracting Sexually Transmitted Diseases (STDs)	11 (26.19)	15 (35.71)	14 (33.33)	2 (4.76)

	Strongly Disagree = 0	Disagree = 1	Agree = 2	Strongly Agree = 3
Pre-Exposure Prophylaxis (PrEP) Is 100% Effective Against HIV	2 (4.76)	12 (28.57)	13 (30.59)	15 (35.71)
Antibiotics Are 100% Effective Against Sexually Transmitted Diseases (STDs)	7 (16.67)	14 (33.33)	11 (26.19)	10 (23.81)

	High Risk = 0	Medium Risk = 1	Low Risk = 2	No Risk = 3
Perceived Risk for Contracting COVID-19	12 (28.57)	14 (33.33)	10 (23.81)	6 (14.29)

	Strongly Disagree = 0	Disagree = 1	Agree = 2	Strongly Agree = 3
Those Who Are Asymptomatic Cannot Transmit COVID-19	12 (28.57)	16 (38.10)	6 (14.29)	8 (19.05)
Young, Healthy People Are at Low Risk for Contacting COVID-19	16 (38.10)	13 (30.95)	8 (19.05)	5 (11.90)

Note: Valid percentages are reported in parenthesis

Table 5. Frequency and Percentages for Alcohol and Substance Abuse

	Never=0	Rarely=1	Often=2	Always=3
How Often Do You Drink 5 + Alcoholic Beverages Prior/During Sexual Encounters?	22 (52.38)	8 (19.05)	9 (21.43)	3 (7.14)
How Often Do You Engage in Chem Sex (Party 'n Play)?	27 (64.29)	6 (14.29)	5 (11.90)	4 (9.52)
	None	Cocaine	Ecstasy	Crystal Meth
What Substances Do You Use?	28 (68.29)	6 (14.63)	1 (2.44)	6 (14.63)
	Never = 0	Rarely = 1	Often = 2	Always= 3
Do You Exchange Sex for Drugs or Drugs for Sex?	26 (61.90)	6 (14.29)	8 (19.05)	2 (4.76)
	None	Cocaine	Ecstasy	Crystal Meth
Which Substances Do You Exchange for Sex or Request in Exchange for Sex?**	26 (63.41)	8 (19.51)	3 (7.32)	4 (9.76)
	High Risk = 0	Medium Risk = 1	Low Risk = 2	No Risk = 3
Do You Feel the Use of Alcohol/Substances Increases the Risk for Unsafe Sex Practices?	25 (59.52)	8 (19.05)	5 (11.90)	4 (9.52)

Note: Valid percentages are reported in parenthesis; ** Data is descriptive not scored.

Table 6A – Frequencies & Percentages for Depression (Beck's Depression Inventory)	N (%)
Normal Range (Score: 1-10)	20 (47.62)
Mild Mood Disorder (Score: 11-16)	5 (11.90)
Borderline Clinical Depression (Score: 17-20)	4 (9.52)
Moderate Depression (Score: 21-20)	9 (21.43)
Severe Depression (Score: 31-40)	3 (7.14)
Extreme Depression (Score: >40)	1 (2.38)

Note: Valid percentages are reported in parenthesis

Table 6B – Frequencies & Percentages for Sexual Compulsivity (SAST-R Scale)	N (%)
Core Sex Addiction Score = 0 / Gay Men's Sex Addiction Score= 0	13 (30.95)
Core Sex Addiction Score: <6 / Gay Men Sex Addiction Score: <3	18 (42.86)
Core Sexual Addiction Score: >6 / Gay Men Sexual Addiction Score: >3	11 (26.19)

Note: Valid percentages are reported in parenthesis

Table 7. *Frequency and Percentages for High-Risk Sexual Behavior*

	1-10 Partners = 1	11-20 Partners = 2	21-30 Partners = 3	30+ Partners = 4
Approximately How Many Sex Partners Have You Had in Past Year?	33 (78.57)	6 (14.29)	1 (2.38)	2 (4.76)
	Never = 0	Rarely = 1	Often = 2	Always= 3
How Often Do You Engage in Anonymous Partnering?	8 (19.05)	13 (30.95)	18 (42,86)	3 (7.14)
	Never = 0	Rarely = 1	Often = 2	Always= 3
How Often Do You Engage in Simultaneous and/or Multi-Partnering?	15 (35.71)	13 (30.95)	11 (26.19)	3 (7.14)
	Never = 0	Rarely = 1	Often = 2	Always= 3
How Often Do You Exchange Sexual Favors for Money/Solicit Sexual Favors for Money?	24 (57.14)	10 (23.81)	7 (16.67)	1 (2.38)
	Never = 3	Rarely = 2	Often = 1	Always= 0
How Often Do You Use Condoms for Oral Sex?	22 (52.38)	8 (19.05)	10 (23.81)	2 (4.76)

Note: Valid percentages are reported in parenthesis;

Table 7 (continued). *Frequency and Percentages for High-Risk Sexual Behavior*

	1-10 Encounters = 1	11-20 Encounters = 2	21-30 Encounters= 3	30+ Encounters = 4
Approximately How Many Unprotected Oral Encounters in Past Year?	28 (66.67	8 (19.05)	6 (14.29)	0 (0.00)
	Never = 3	Rarely = 2	Often = 21	Always= 0
How Often Do You Use Condoms for Anal Sex?	8 (19.05)	3 (7.14)	17 (40.48)	14 (33.33)
	1-10 Encounters = 1	11-20 Encounters = 2	21-30 Encounters= 3	30+ Encounters = 4
Approximately How Many Unprotected Anal Encounters in Past Year?	28 (66.67)	0 (0.00)	1 (2.38)	5 (11.90)
	Never = 3	Rarely = 2	Often = 1	Always= 0
Prior to Sexual Contact, Do You Disclosed HIV/STD Status to Potential Partner(s)?	9 (21.43)	9 (21.43)	11 (26.19)	13 (30.95)
	Never = 3	Rarely = 2	Often = 1	Always= 0
Prior to Sexual Contact, Do You Ask Potential Partner(s) to Disclose HIV/STD Status?	8 (19.05)	4 (9.52)	14 (33.33)	16 (38.10)

Note: Valid percentages are reported in parenthesis.

Table 7 (continued). *Frequency and Percentages for High-Risk Sexual Behavior*

	None = 0	One Time = 1	Twice = 2	Three or More = 3
In the past year, how many times have you been infected with an STD (syphilis gonorrhea or chlamydia)?	37 (88.10)	1 (2.38)	2 (4.76)	2 (4.76)

Note: Valid percentages are reported in parenthesis.

Table 8. *Frequency and Percentages for Pandemic Risk-Taking Behaviors*

	Reduction= 0	No Change=1	Moderate Increase=2	Significant Increase=3
During Pandemic, Has There Been Any Change in the Number of Sexual Encounters?	30 (71.43)	7 (16.67)	0 (0.00)	5 (11.90)
	Never=3	Rarely=2	Often=1	Always=0
During the Pandemic, Have You Used Virtual Sexual Activity to Ensure Safety?	18 (42.86)	8 (19.05)	12 (28.57)	4 (9.52)
	Never=0	Rarely=1	Often=2	Always=3
During Pandemic, Have You Engaged in Simultaneous and/or Multi-partnering?	24 (58.54)	6 (14.63)	11 (26.83)	0 (0.00)
	Never=0	Rarely=1	Often=2	Always=3
During Pandemic, Have You Engaged in the Exchange/Solicitation of Sexual Favors for Money?	27 (64.29)	7 (16.67)	7 (16.67)	1 (2.38)

Note: Valid percentages are reported in parenthesis.

Table 9 Results of Multiple Linear Regression Analyses

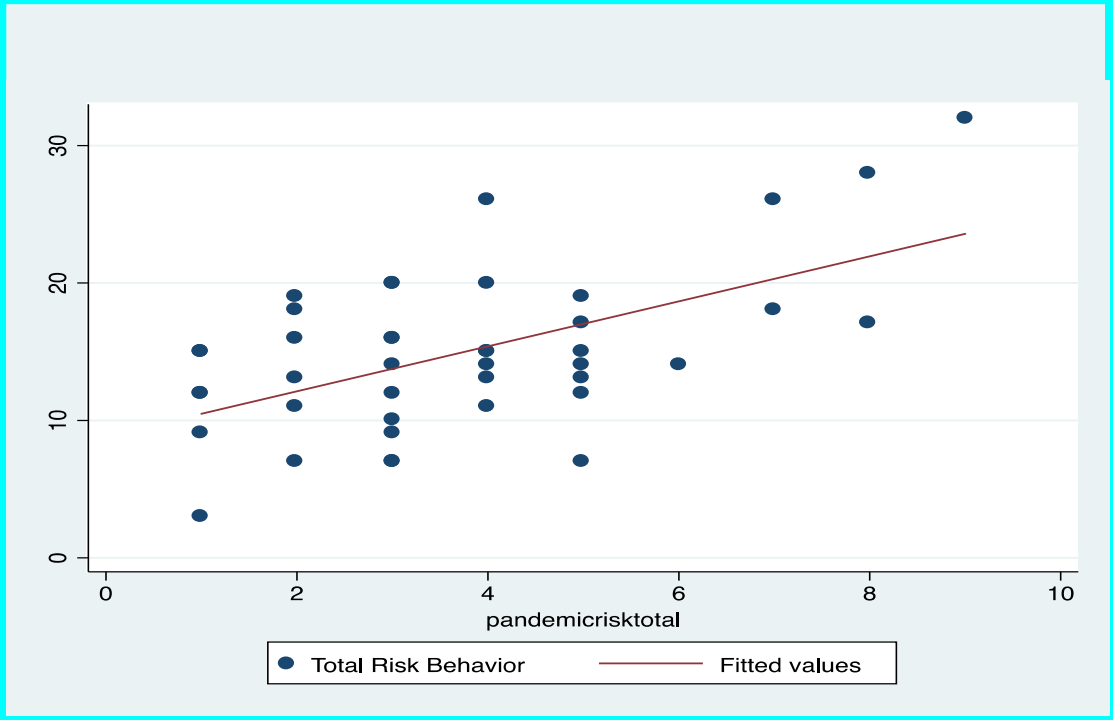
	Estimates (β)[32]	95% CI[33]
High Risk Sexual Behaviors *ON*		
Method of Contact: Phone App/Internet	1.90	-3.01, 6.83
Method of Contact: In-Person	.47	-3.22, 4.17
Hours Spent Sex-Seeking Activity	4.06*	1.71, 6.42
Risk Perception/Beliefs	1.39*	.61, 2.18
Beck's Depression Inventory	-2.01*	-3.84, -.17
Sex Addiction Screening Test	4.43*	1.69, 7.17
Alcohol/Substance Abuse	.05	-.45, .56
Age	.84	-1.65. 3.34
Race/Ethnicity: Black	-4.53	-9.06, -.002
Race/Ethnicity: Latino	-7.52*	-13.26, -1.78
Race/Ethnicity: Asian/Mixed	-5.99	-19/08, 7.09
Educational Level	-2.46	-5.16, .23
Income Level	.22	-1.39, 1.82
HIV Status: Positive	-1.89	-6.43, 2.65
HIV Status: Negative/Unknown	-10.21	-20.82, .38
Pandemic Risk-Taking Behaviors *ON*		
Method of Contact: Phone App/Internet	.39	-.68, 1.47
Method of Contact: In-Person	.36	-44, 1.17
Hours Spent Sex-Seeking Activity	.29	-.22, .80
Risk Perception/Beliefs	.84**	.67, 1.02
Beck's Depression Inventory	.14	-.25, .54
Sex Addiction Screening Test	.24	-.34, .84
Alcohol/Substance Abuse	-.13*	-.24, -.02
Age	.39	-.14, .94
Race/Ethnicity: Black	.15	-.83, 1.15
Race/Ethnicity: Latino	-.05	-1.31, 1.20
Race/Ethnicity: Asian/Mixed	.28	-2.57, 3.15
Educational Level	-.14	-.73, .44
Income Level	.09	-.25, .45
HIV Status: Positive	.04	-1.03, .95
HIV Status: Negative/Unknown	-1.05	-2.42, 2.21

Note: * p < .05; ** p < .001

[32] Beta (β) refers to the probability of Type II error in any hypothesis test – incorrectly failing to reject the null hypothesis (1 - (β is power).

[33] The confidence level (CI) is the percentage of times one anticipates getting close to the same estimate when the experiment is performed over again, or the population is resampled in the same manner. The CI consists of higher and lower bonds of the estimate one expects to uncover at a given level of confidence.

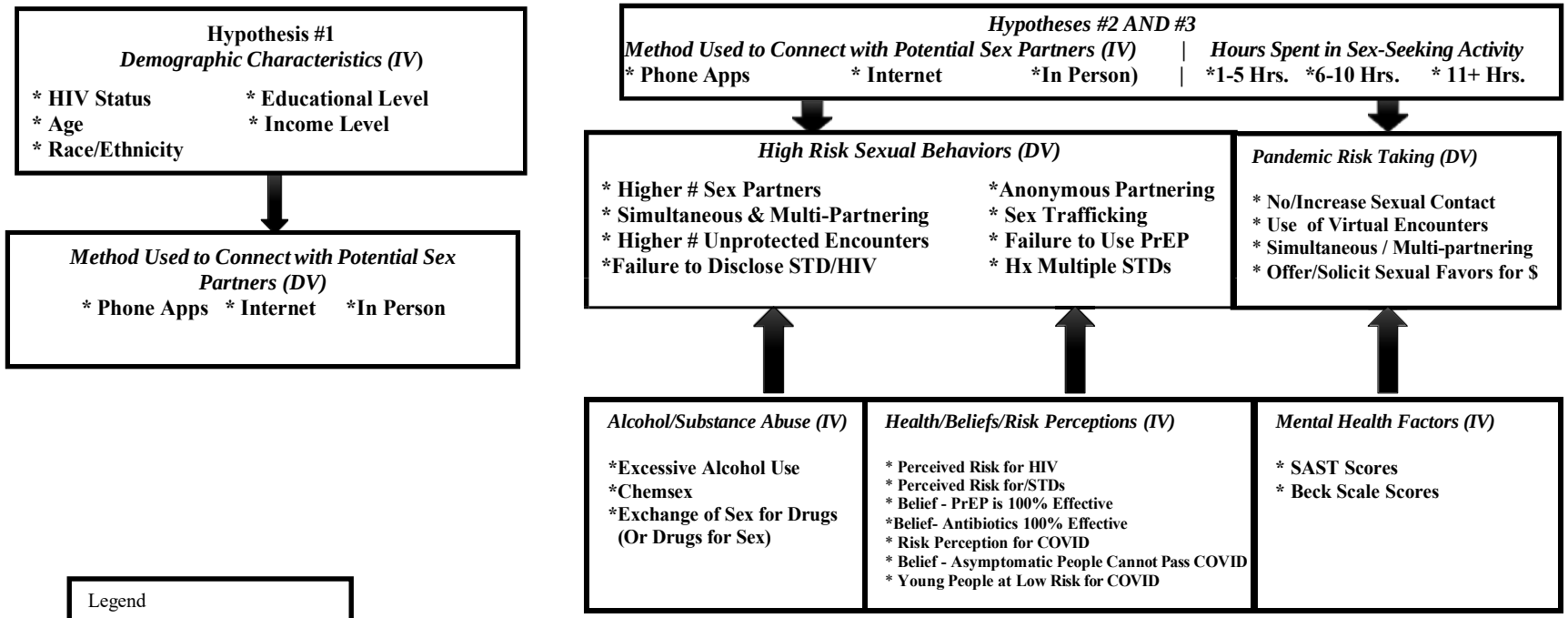
Table 10: Correlation Analysis: Scatterplot of High-Risk Sexual Behavior and Pandemic



Appendix A

RELATIONSHIP BETWEEN INDEPENDENT AND DEPENDENT VARIABLES

This study seeks to determine: A)if certain Demographic Characteristics (IV) predict the Method Used to Connect with Potential Sex Partners (DV); B) if the Method Used to Connect with Potential Sex Partners (IV) predicts High Risk Sexual Behaviors and/or risk-taking COVID behaviors and C) whether Sexual Health Practices/Beliefs, Mental Health Factors and/or Alcohol Substance Abuse (IVs) predict High Risk Sexual Behaviors (DV)



Legend

IV = Independent Variable
DV = Dependent Variable

APPENDIX B – QUESTIONNAIRE SURVEY				
Identifier Code:		**Date of Survey:**		
Part I. - Demographic Characteristics				
1. Age Group: Please check the appropriate box, which best reflects your age group:				
18 – 25 ☐	**26 – 35** ☐	**36 – 50** ☐	**50+** ☐	
2. Race /Ethnicity: Please check the appropriate box, which best reflects your racial/ethnic identity:				
White ☐	**Black** ☐	**Latino** ☐	**Asian** ☐	**Mixed/Other** ☐
3. Education Level: Please check the appropriate box, which best reflects your educational level:				
Non-HS Grad ☐	**HS Grad.** ☐	**Some College/ Associate** ☐	**Bachelor** ☐	**Master/ Post Grad** ☐
4. Income Level: Please check the appropriate box, which best reflects your income level:				
Under 25K ☐	**25K – 50K** ☐	**50K – 75K** ☐	**75-100K** ☐	**Over 100K** ☐
5. Please indicate your HIV status?				
HIV Negative ☐	**HIV Positive** ☐	**I Do Not Know** ☐		
Part II. Contact Method for Meeting Potential Sex Partners				
6. Please indicate your preferred method for meeting potential sex partners: (check one)				
Phone Dating App ☐	**Internet** ☐	**In-Person** ☐		
7. How many hours per week do you spend seeking out potential sex partners? (Check one)				
1 – 5 Hours ☐	**6 – 10 Hours** ☐	**11 Hours or More** ☐		

Part III – Sexual Healthcare and Practices

8 Approximately how many sex partners have you had in past year? (Check one)

1-10 ☐	11-20 ☐	21-30 ☐	More than 30 ☐

9. How often do you engage in anonymous partnering?

Never ☐	Rarely ☐	Often ☐	Always ☐

10. How often do you engage in simultaneous (group sex) and/or multi-partnering (various partners)?

Never ☐	Rarely ☐	Often ☐	Always ☐

11. How often do you exchange sex favors for money/solicit sexual favors for money?

Never ☐	Rarely ☐	Often ☐	Always ☐

12. Concerning Pre-Exposure Prophylaxis (PrEP) Medication, please check one of these statements?

I do not have interest in taking this medication.	☐
I am not taking PrEP, but I would consider starting this medication.	☐
I was taking PrEP, but I stopped.	☐
I am currently taking PrEP but have issues with consistency.	☐
I am currently taking PrEP consistently.	☐

13. How often do you use condoms for oral sex?

Never ☐	Rarely ☐	Often ☐	Always ☐

14. Approximately how many unprotected oral encounters in past year? (Check one)

1-10 ☐	11-20 ☐	21-30 ☐	More than 30 ☐

15. How often do you use condoms for anal sex (insertive and/or receptive)? (Check one_

Never ☐	Rarely ☐	Often ☐	Always ☐

16. Approximately how many unprotected oral encounters in past year? (Check one)

1-10 ☐	11-20 ☐	21-30 ☐	More than 30 ☐

17. Prior to sexual contact, how often do you disclose HIV/STD status to potential partner(s)?

Never ☐	Rarely ☐	Often ☐	Always ☐

18. Prior to sexual contact, how often do you ask potential partner to disclose HIV/STD?

Never ☐	Rarely ☐	Often ☐	Always ☐

19. Within the past year were diagnosed with any of these STDs and how many times?

Syphilis:	Not Infected ☐	One Time ☐	Two Times ☐	Three + times ☐
Gonorrhea:	Not Infected ☐	One Time ☐	Two Times ☐	Three + times ☐
Chlamydia:	Not Infected ☐	One Time ☐	Two Times ☐	Three + times ☐

Part IV Health Beliefs & Risk Perceptions			
20. Rate your perceived risk level for contracting HIV? (Check One)			
No Risk ☐	**Low Risk ☐**	**Medium Risk ☐**	**High Risk ☐**
21. Rate your perceived risk level for contracting STDs? (Check One)			
No Risk ☐	**Low Risk ☐**	**Medium Risk ☐**	**High Risk ☐**
22. PrEP is 100% effective against HIV. (Indicate whether you agree with this statement)			
Strongly Disagree ☐	**Disagree ☐**	**Agree ☐**	**Strongly Agree ☐**
23. Antibiotics are 100% effective against STDs. (Indicate whether you agree with this statement)			
Strongly Disagree ☐	**Disagree ☐**	**Agree ☐**	**Strongly Agree ☐**
24. Do you feel at risk COVID-19?			
No Risk ☐	**Low Risk ☐**	**Moderate Risk ☐**	**High Risk ☐**
25. Those who are asymptomatic, cannot transmit COVID-19 infection.			
Strongly Disagree ☐	**Disagree ☐**	**Agree ☐**	**Strongly Agree ☐**
26. Young, healthy people have a low risk for contracting COVID-19.			
Strongly Disagree ☐	**Disagree ☐**	**Agree ☐**	**Strongly Agree ☐**

PART V - SEXUAL BEHAVIOR DURING COVID-19 PANDEMIC			
27. During the current pandemic, has there been any change in the number of face-to-face sexual encounters?			
Reduction ☐	**No Change ☐**	**Moderate Increase ☐**	**Significant Increase ☐**
28. During the current pandemic, how often do you use phone app for virtual sexual activity?			
Never ☐	**Rarely ☐**	**Often ☐**	**Always ☐**
29. During the current pandemic, how often do you engage in simultaneous (group sex) and/or multi-partnering (various partners)?			
Never ☐	**Rarely ☐**	**Often ☐**	**Always ☐**
30 During the current pandemic, how often have you engaged in the exchange/solicitation of sexual favors for money?			
Never ☐	**Rarely ☐**	**Often ☐**	**Always ☐**

Part VI - Alcohol and Substance Use			
31 How often do you drink more than five (5) alcoholic beverages prior/during sexual encounters?			
Never ☐	**Rarely ☐**	**Often ☐**	**Always ☐**
32. How often do you engage in Chem-Sex (use substances during sexual encounters)?			
Never ☐	**Rarely ☐**	**Often ☐**	**Always ☐**
33. If so, which substances to you use?			
Cocaine ☐	**Ecstasy ☐**	**Crystal Meth ☐**	**Ketamine ☐**
34. How often do you exchange sex for drugs? Or drugs for sex?			
Never ☐	**Rarely ☐**	**Often ☐**	**Always ☐**
35. If so, which substances to you use?			
Cocaine ☐	**Ecstasy ☐**	**Crystal Meth ☐**	**Ketamine ☐**
36. Do you feel alcohol/substance use during encounters increases the risk for unsafe sex practices?			
No Risk ☐	**Low Risk ☐**	**Medium Risk ☐**	**High Risk ☐**

APPENDIX C: THE BECK DEPRESSION INVENTORY, 2ND ED. (BDI-II)

This depression inventory can be self-scored. The scoring scale is at the end of the questionnaire.

#1
- ☐ = 0 I do not feel sad.
- ☐ = 1 I feel sad
- ☐ = 2 I am sad all the time and I can't snap out of it.
- ☐ = 3 I am so sad and unhappy that I can't stand it.

#2
- ☐ = 0 I am not particularly discouraged about the future.
- ☐ = 1 I feel discouraged about the future.
- ☐ = 2 I feel I have nothing to look forward to.
- ☐ = 3 I feel the future is hopeless and that things cannot improve.

#3
- ☐ = 0 I do not feel like a failure.
- ☐ = 1 I feel I have failed more than the average person.
- ☐ = 2 As I look back on my life, all I can see is a lot of failures.
- ☐ = 3 I feel I am a complete failure as a person.

#4
- ☐ = 0 I get as much satisfaction out of things as I used to.
- ☐ = 1 I don't enjoy things the way I used to.
- ☐ = 2 I don't get real satisfaction out of anything anymore.
- ☐ = 3 I am dissatisfied or bored with everything.

#5
- ☐ = 0 I don't feel particularly guilty
- ☐ = 1 I feel guilty a good part of the time.
- ☐ = 2 I feel quite guilty most of the time.
- ☐ = 3 I feel guilty all of the time.

#12
- ☐ = 0 I have not lost interest in other people.
- ☐ = 1 I am less interested in other people than I used to be.
- ☐ = 2 I have lost most of my interest in other people.
- ☐ = 3 I have lost all of my interest in other people.

#13
- ☐ = 0 I make decisions about as well as I ever could.
- ☐ = 1 I put off making decisions more than I used to.
- ☐ = 2 I have greater difficulty in making decisions more than I used to.
- ☐ = 3 I can't make decisions at all anymore.

#14
- ☐ = 0 I don't feel that I look any worse than I used to.
- ☐ = 1 I am worried that I am looking old or unattractive.
- ☐ = 2 I feel there are permanent changes in my appearance that make me look unattractive
- ☐ = 3 I believe that I look ugly.

#15
- ☐ = 0 I can work about as well as before.
- ☐ = 1 It takes an extra effort to get started at doing something.
- ☐ = 2 I have to push myself very hard to do anything.
- ☐ = 3 I can't do any work at all.

#16
- ☐ = 0 I can sleep as well as usual.
- ☐ = 1 1 I don't sleep as well as I used to.
- ☐ = 2 I wake up 1-2 hours earlier than usual and find it hard to get back to sleep.
- ☐ = 3 I wake up several hours earlier than I used to and cannot get back to sleep.

#6	☐ = 0	I don't feel I am being punished.
	☐ = 1	I feel I may be punished.
	☐ = 2	I expect to be punished.
	☐ = 3	I feel I am being punished.
#7	☐ = 0	I don't feel disappointed in myself.
	☐ = 1	I am disappointed in myself.
	☐ = 2	I am disgusted with myself.
	☐ = 3	I hate myself.
#8	☐ = 0	I don't feel I am any worse than anybody else.
	☐ = 1	I am critical of myself for my weaknesses or mistakes.
	☐ = 2	I blame myself all the time for my faults.
	☐ = 3	I blame myself for everything bad that happens.
#9	☐ = 0	I don't have any thoughts of killing myself.
	☐ = 1	I have thoughts of killing myself, but I would not carry them out.
	☐ = 2	I would like to kill myself.
	☐ = 3	I would kill myself if I had the chance.
#10	☐ = 0	I don't cry any more than usual.
	☐ = 1	I cry more now than I used to
	☐ = 2	I cry all the time now
	☐ = 3	I used to be able to cry, but now I can't cry even though I want to.
#17	☐ = 0	I don't get more tired than usual.
	☐ = 1	I get tired more easily than I used to.
	☐ = 2	I get tired from doing almost anything.
	☐ = 3	I am too tired to do anything.
#18	☐ = 0	My appetite is no worse than usual
	☐ = 1	My appetite is not as good as it used to be.
	☐ = 2	My appetite is much worse now. 3
	☐ = 3	I have no appetite at all anymore.
#19	☐ = 0	I haven't lost much weight, if any, lately.
	☐ = 1	I have lost more than five pounds.
	☐ = 2	I have lost more than ten pounds.
	☐ = 3	I have lost more than fifteen pounds.
#20	☐ = 0	I am no more worried about my health than usual.
	☐ = 1	I am worried about physical problems like aches, pains, upset stomach, or constipation.
	☐ = 2	I am very worried about physical problems and it's hard to think of much else.
	☐ = 3	I am so worried about my physical problems that I cannot think of anything else.
#21	☐ = 0	I have not noticed any recent change in my interest in sex.
	☐ = 1	I am less interested in sex than I used to be.
	☐ = 2	I have almost no interest in sex.
	☐ = 3	I have lost interest in sex completely.

#11

☐ = 0 I am no more irritated by things than I ever was

☐ = 1 I am slightly more irritated now than usual.

☐ = 2 I am quite annoyed or irritated a good deal of the time.

☐ = 3 I feel irritated all the time.

INTERPRETING THE BECK DEPRESSION INVENTORY
You can evaluate your depression according to the Table below.
Total Score_____

1-10 = These ups and downs are considered normal
11-16 = Mild mood disturbance
17-20 = Borderline clinical depression
21-30 = Moderate depression
31-40 = Severe depression
over 40 = Extreme depression

APPENDIX D: THE SEXUAL ADDICTION TEST (SAST-R)

The Sexual Addiction Screening Test (SAST-R) is designed to assist in the assessment of sexually compulsive or "addictive" behavior. Developed in cooperation with hospitals, treatment programs, private therapists and community groups, the SAST provides a profile of responses that help to discriminate between addictive and non-addictive behavior. (Carnes, Green and Carnes, 2010)

To complete the test, answer each question by circling the appropriate answer in the yes/no column

YES	NO	Were you sexually abused as a child or adolescent?
YES	NO	Did your parents have trouble with sexual behavior?
YES	NO	Do you often find yourself preoccupied with sexual thoughts?
YES	NO	Do you feel that your sexual behavior is not normal?
YES	NO	Do you ever feel bad about your sexual behavior?
YES	NO	Has your sexual behavior ever created problems for you and your family?
YES	NO	Have you ever sought help for sexual behavior you did not like?
YES	NO	Has anyone been hurt emotionally because of your sexual behavior?
YES	NO	Are any of your sexual activities against the law?
YES	NO	Have you made efforts to quit a type of sexual activity and failed?
YES	NO	Do you hide some of your sexual behaviors from others?
YES	NO	Have you attempted to stop some parts of your sexual activity?
YES	NO	Have you felt degraded by your sexual behaviors?
YES	NO	When you have sex, do you feel depressed afterwards?
YES	NO	Do you feel controlled by your sexual desire?
YES	NO	Have important parts of your life (such as job, family, friends, leisure activities) been neglected because you were spending too much time on sex?
YES	NO	Do you ever think your sexual desire is stronger than you are?
YES	NO	Is sex almost all you think about?
YES	NO	Has sex (or romantic fantasies) been a way for you to escape your problems?
YES	NO	Has sex become the most important thing in your life?
YES	NO	Are you in crisis over sexual matters?
YES	NO	The internet has created sexual problems for me.
YES	NO	I spend too much time online for sexual purposes.
YES	NO	I have purchased services online for erotic purposes (sites for dating)
YES	NO	I have used the internet to make romantic or erotic connections with people online.
YES	NO	People in my life have been upset about my sexual activities online.
YES	NO	I have attempted to stop my online sexual behaviors.
YES	NO	I have subscribed to or regularly purchased or rented sexually explicit materials (magazines, videos, books or online pornography)
YES	NO	I have been sexual with minors.
YES	NO	I have spent considerable time and money on strip clubs, adult bookstores and movie houses
YES	NO	I have engaged prostitutes and escorts to satisfy my sexual needs.
YES	NO	I have spent considerable time surfing pornography online.
YES	NO	have used magazines, videos or online pornography even when there was considerable risk of being caught by family members who would be upset by my behavior.
YES	NO	I have regularly purchased romantic novels or sexually explicit magazines.
YES	NO	I have stayed in romantic relationships after they became emotionally abusive.
YES	NO	I have traded sex for money or gifts.
YES	NO	I have maintained multiple romantic or sexual relationships at the same time.
YES	NO	After sexually acting out, I sometimes refrain from all sex for a significant period.

YES	NO	I have regularly engaged in sadomasochistic behavior.
YES	NO	I visit sexual bathhouses, sex clubs or video/bookstores as part of my regular sexual activity.
YES	NO	I have engaged in unsafe or “risky” sex even though I knew it could cause me harm.
YES	NO	I have cruised public restrooms, rest areas or parks looking for sex with strangers.
YES	NO	I believe casual or anonymous sex has kept me from having more long-term intimate relationships.
YES	NO	My sexual behavior has put me at risk for arrest for lewd conduct or public indecency.
YES	NO	I have been paid for sex.

APPENDIX E: QUALITATIVE INTERVIEW QUESTIONS
Method for Meeting Potential Partners
1) Explain preference for [method used] to connect to potential sex partners?
**** Phone App Users Only**** **2) How does at-home app use impact sex-seeking activity versus app use in public spaces?**
3) Describe any adverse mood changes related to method used for sex-seeking activity (depression, anxiety, or low self-esteem).
4) Describe how the method used for sex-seeking activity has become addictive/problematic, (relationships/work).
Sexual Health and Behavior
5) Why do you feel [at risk/not at risk] for HIV/STDs?
6) Why do you choose to [disclose/do not disclose] HIV/STD status to potential sex partners?
7) Why do you choose to [ask/ not ask] about potential sex partner's HIV/STD status?
8) Why do you choose to [use/not use] condoms during [anal sex and/or oral sex]?
9) What are your beliefs about PrEP efficacy to reduce risk of HIV transmission?
10) What are your beliefs about antibiotic efficacy to treat STDs?
11) How can digital technology be used to improve HIV/STD prevention, education, and treatment?
Alcohol and Substance Use
12) Explain how alcohol/drug use impacts your sexual behavior?
Impact of COVID-19 Pandemic
13) Explain why you feel at risk (or not) for COVID-19?
14) Do you feel the pandemic has impacted your sexual behavior in any way, please explain?
15) Do you feel the use of dating apps has an influenced your sexual behavior during the pandemic?

APPENDIX F: RECRUITMENT MATERIALS: FLYER/POSTER

HOW DO YOU MEET DATES FOR CASUAL SEXUAL ENCOUNTERS? STUDY PARTICIPANTS WANTED

Requirements:

- **Gay/Bisexual Males (Ages: 18 – 60) who reside in NYC**
- **Prefer one of these three methods to connect seek partners:**

  1) Phone Dating Applications OR

  2) Dating Websites OR

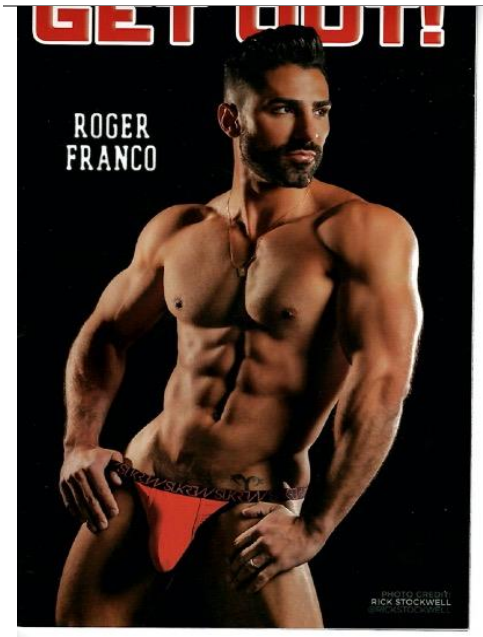
  3) Public Venues

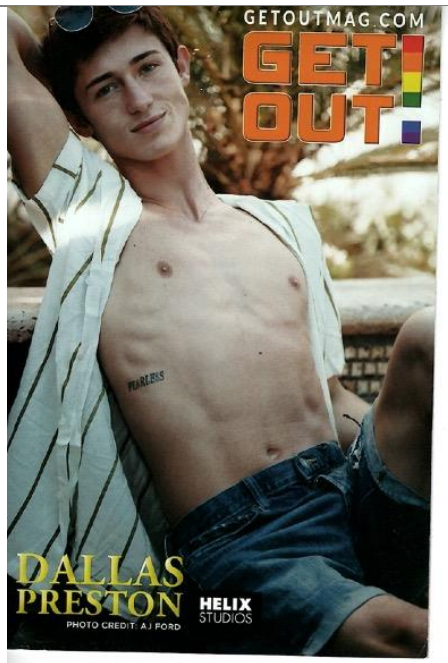
- **Partcipants will take part in a two-part study: 1) online survey and if selected, 2) engage in a Zoom or telephone interview. All responses kept confidential!**

Participants will be compensated with $25 gift card for each phase of the study.

If interested, please contact: msmphoneappstudy@gmail.com

Appendix G
Recruitment Sources: Magazine Ads
Feb-March 2021





APPENDIX H - Participant Consent Form

Yeshiva University
Wurzweiler School of Social Work
Consent to Participate in a Behavioral Research Study
Adult Participants

TITLE:	The Relationship Between the Use of Phone Dating Applications Among Men Who Have Sex with Men and Risk-Taking Behaviors
PROTOCOL NO.:	None IRB Protocol #20204600
SPONSOR:	Yeshiva University, Wurzweiler School of Social Work
PRINCIPAL INVESTIGATOR:	Gary Stein, JD, MSW Yeshiva University Wurzweiler School of Social Work 2495 Amsterdam Avenue New York, NY 10033 Phone: (646) 592-6808 Email: GLStein@yu.edu
STUDY COORDINATOR:	Nancy Eichengreen, LMSW Yeshiva University Wurzweiler School of Social Work 2495 Amsterdam Avenue New York, NY 10033 Participant Contact Line: (646) 484-1407 Study Email: msmphoneappstudy@gmail.com
STUDY-RELATED PHONE NUMBER(S):	(646) 454-1407
CONSENT FORM VERSION DATE:	_____

What are some of the general things you should know about this research study? You have expressed interest in joining this research study about how the dating method used to connect with casual partners (phone apps, Internet or in-person cruising) may influence risk-taking behaviors among gay and bisexual men who live in New York City between the ages of 18-60 years old.

To safeguard everyone's personal health and safety during the COVID-19 pandemic, all interviews will take place by phone. Each participant will have to opportunity to choose a convenient appointment date/time for the telephone interview(s).

Participation in this two-part study is strictly voluntary. Your alternative is not to participate. You can refuse to participate in the research or change your mind at any time. No matter what your decision is, you will not be penalized or lose any benefits to which you are otherwise entitled. During Part I, all participants will be asked to complete a survey about sexual healthcare, HIV-STD risk perceptions and safe-sex practice and two standard instruments to evaluate depressed mood and impulse control. During Part II, a small group of 10-15 men will be

invited to take part in a follow-up telephone interview to answer open-ended questions about the prior responses given in Part I. Your participation in the study will end either at the end of Part I or Part II.

All telephone interviews will be conducted by Nancy Eichengreen, Study Coordinator from Yeshiva University, Wurzweiler School of Social Work. The information gathered during this study will help us understand how the dating method used to connect with casual partners influences sexual behavior and intimate decision-making.

Will you receive compensation for your participation? A $25 electronic gift card will be given to all participants upon completion of Part I. Should you decide during the course of the study to drop out, for any reason, you will still receive a $25 electronic gift card for your time and effort. Those who are invited to participate in Part II will receive an extra $25 gift card upon completion.

What are the risks or costs associated with participation in this study? Due to the sensitive topics explored in this study, participants will be asked to answer questions about personal sexual behavior. Should any participant feel distressed or uncomfortable, please call the Study Coordinator Nancy Eichengreen, LCSW at (646) 4, 84-1407 for further assistance. No financial costs will be imposed upon any participant involved in this study. Although we take measures to safeguard your privacy, loss of confidentiality is a risk of the research.

What are the benefits associated with participation in this study? Although you will not personally benefit from this study, the information gathered from this research study will be used to enhance social work knowledge /practice and will help contribute towards the creation of better mental healthcare interventions, HIV/STD prevention and, hopefully, reduce the risk of HIV/STDs among the LGBT community. This research study will advance the positive use of digital technology to educate and provide access to free/low-cost sexual healthcare and HIV/STD testing and treatment.

How will your privacy be protected? Participants' identity will not appear in any report or publication related to this study and no identifying information will be collected. All participants will receive a numerical identifier code, no names or addresses will be collected. All contact with study coordinator will take place over a secure, private email address and/or phone line reserved for the sole use of this study.

What if you have questions about this study? You have the right to ask and have answered, any questions about this research study. If you have any questions, complaints, or concerns, or think that you have been harmed by the research, you have a right to contact the Study Coordinator, Nancy Eichengreen, LCSW or the Principal Investigator, Dr. Gary Stein at Yeshiva University, School of Social Work at contact numbers list above.

What if you have questions about your rights as a research participant? You have the right to skip any questions that cause discomfort and stop/opt out of the study at any point. Please note all responses are anonymous and none of the information provided can be personally linked to you. At no time, will you be asked to disclose your name or address. All research on volunteers is reviewed by a committee to protect your rights and welfare. If you have any questions concerning your rights as a research participant, you may contact, anonymously if you wish, the Yeshiva University Institutional Review Board.

This research is being overseen by WCG IRB. An IRB is a group of people who perform independent review of research studies. You may talk to them at 855-818-2289 or researchquestions@wcgirb.com if:

- You have questions, concerns, or complaints that are not being answered by the research team.
- You are not getting answers from the research team.
- You cannot reach the research team.
- You want to talk to someone else about the research.
- You have questions about your rights as a research subject.

I agree to be a voluntary participant in the above research study and have received a copy of this signed consent.

_____ Date: _____

Signature

Identifier No: _____

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