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A qualitative study of the dating experiences and sex behaviors of young Black MSM who use dating phone apps

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A qualitative study of the dating experiences and sex behaviors of young Black MSM who use dating phone apps

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Abstract

A qualitative study of the dating experiences and sex behaviors of young Black MSM who use dating phone apps

By Danielle K. Gilliard

Background: HIV incidence is increasing among young Black men who have sex with men (YBMSM) despite relatively stable rates in the general United States population. Dating phone applications (apps) have become popular among YBMSM to find sexual partners; however, the impact of these apps on decision-making around sex behaviors is understudied in this group. The purpose of this study was to understand the dating and sex behaviors of a sample of YBMSM who regularly use dating phone apps

Methods: We conducted a qualitative interview study to explore the dating experiences and sex behaviors of both HIV- negative and -positive YBMSM who reported regular use of dating phone apps. We used the Integrated Behavior Model to frame our investigation of the potential influences of phone apps on condom use, HIV status disclosure, and HIV testing. Twenty YBMSM aged 18-24 were recruited from community organizations and HIV clinics in Atlanta, Georgia, to participate in in-depth, semi-structured interviews. A modified grounded theory approach was used to guide our inductive and deductive qualitative analysis.

Results: IBM was an appropriate theoretical framework to describe and contextualize the dating and sex behaviors of this sample of YBMSM. Perceived norms, attitudes, and self-agency were influential in participants' intentions of having casual sex with men met using dating phone apps, consistently using condoms, and disclosing and discussing HIV status. Perceived hook up cultural norms within the BMSM community and on dating phone apps influenced condom use and HIV stigma in this community affected participants' intentions of using the dating phone apps to openly disclose and discuss HIV status. Participants used serosorting based on dating app profiles and app-based communication to inform condom use behaviors.

Conclusions: Using dating phone apps to find partners does affect YBMSM's intentions to use consistently use condoms, disclose and discuss HIV status, and get tested for HIV. Understanding how perceived norms, HIV stigma, serosorting and personal-agency influence sex behaviors when YBMSM use dating phone apps is essential to developing future interventions. Future research should further explore the relationship between perceived norms and protective sex behaviors for YBMSM who use dating phone apps.

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Introduction

Blacks continue to experience increasing HIV incidence rates despite the overall relatively stable HIV incidence rates in the US (CDC, 2013). Among Blacks, men are at especially high risk for HIV infection. HIV rates among Black men are so high that unless the course of the HIV epidemic changes in the US, at some point in their lifetime, an estimated 1 in 16 Black men will be diagnosed with HIV infection (CDC, 2013).

Although Blacks represented approximately 12% of the U.S. population, they accounted for an estimated 44% of new HIV infections and 44% of people living with HIV infection as of 2009 (CDC, 2013). Within this demographic, the estimated number of new HIV infections, in 2010, was greatest among MSM in the youngest age group (ages 13-24) with young Black MSM, aged 13-24, experiencing the greatest number of HIV infections (CDC, 2013). By age, the largest percentage (38%) of new HIV infections among Black males occurred among this young age group. These infection rates are much higher than the proportion of new infections of young Hispanic (25%) and White (16%) males that occurred in the same age group in 2010 (CDC, 2012). Thus, young Black MSM (YBMSM) currently experience the heaviest burden of HIV infection and account for more than half (55%) of new infections among all young MSM (CDC, 2012; CDC, 2012(2)). Moreover, YBMSM currently account for more new infections than any other subgroup by race, ethnicity, age, sex, and risk behavior category (CDC, 2012).

Previous research has yet to provide definitive answers about why new HIV infections among young, Black MSM have increased (CDC, 2011). Still, the CDC postulates that the following factors may contribute to this increase in HIV transmission among young MSM: the high prevalence of HIV among YMSM leading to greater risk of HIV exposure with each sexual

encounter, the high proportion of young MSM of color who are unaware of their status and may unknowingly transmit the virus to others, and other individual factors (CDC, 2012). To address these HIV risk factors, the CDC recommends the following strategies to reduce HIV risk: consistently and correctly using male latex condoms, knowing HIV serostatus, disclosing HIV status to sexual partners, and regular testing (CDC, 2012; Coates, Richter, Caceres, 2008). However, many studies show that young MSM typically have difficulty engaging in these protective sex behaviors (Bauermeister et al., 2011; CDC, 2009; CDC, 2012b; CDC, 2012c; D'Angelo et al., 2001; Eisenberg et al, 2009). In regards to YBMSM, there are few studies that focus on the protective and risky sex behaviors of this specific at-risk population. The few existing studies of sexual risk behavior among YBMSM have conflicting results. While some studies found that YBMSM engage in regular condom use, HIV disclosure, and HIV testing with even less frequency than their white counterparts (Bird, et al., 2011; CDC, 2011; CDC, 2012c; Guzman, et al., 2005; Hart, et al., 2004), other studies show no significant differences in sex behaviors between racial groups (Millet, Floes, Peterson, Bakerman, 2007; Millet, Peterson, Wolitski, Stall, 2006). Thus, factors other than individual-level sexual risk behaviors may account for YBMSM's increased risk of acquiring HIV. Other socio-contextual determinants, such as stigma, discrimination, and access to healthcare may contribute to perceived personal HIV risk, health seeking behaviors, sexual risk behaviors, and other individual-level factors that increase the HIV risk within this marginalized population (CDC, 2012). The limited and conflicting research findings in regards to YBMSM and risk factors for HIV demonstrate a need for more research in this area to inform future prevention strategies.

Continual re-examination of prevention modalities and behavior change strategies are necessary to reduce the risk of HIV acquisition in this population (Grossman, Forsyth, Purcell, Allison,

Toledo, Gordon, 2011). In order to best address the risky and protective sex behaviors of YBMSM, further research also needs to be conducted to understand current methods of sex seeking which have been positively correlated with increased HIV risk (Bolding, Davis, Hart, Sherr and Elford, 2005). In recent years, internet dating has become popular for youth because of the accessibility and the availability of tailored venues catering to a wide variety of populations and their sex preferences (sexual orientation, fetishes, etc.) (Bolding et al., 2005). Smart phones, such as Android mobile phones or iPhones, have more advanced computing capability and connectivity than a feature phone due to technological features including wireless internet accessibility and global positioning system (GPS) functionality. These smart phones also have customizable programs called phone applications or "apps"; many phone apps are used as tools to socialize with others. Dating phone apps have now become a new method of searching for partners and developing relationships. Dating phone apps have potentially increased the ways in which people are able to meet and find new romantic partners (DeMers, 2013).

Dating apps have been tailored to fit a variety of social, dating, and sexual interests for different populations, such as MSM. Grindr, a gay dating phone app, launched in 2009 and continues to be one of the most popular apps for gay, bi, or curious men to find male partners (Grindr, 2009). Grindr is available for download on iOS (iPhones), Android, and Blackberry mobile devices. The app has more than 4 million users in 192 counties with approximately 10,000 more new users downloading the app daily (Grindr, 2009). The app uses the smart phone's location-based (GPS) services to show users available potential partners closest to them. Users download the app for free and make a profile; the user is able to decide what personal information he will share on his public profile. Most users share their weight, height, and race; some users include their sex preferences, HIV status, and last HIV test date. Profiles may also include information about

sexual preferences including preferred sex position of the user or the user's partner (top, bottom, versatile, oral, etc.) and condom use (listed as "safe sex only", "anything goes", or "raw"). Users may also disclose their HIV status, with the options to state their status as positive, negative, never tested, or to list their latest test date in conjunction with a negative status. While some gay dating phone apps, such as Grindr, do not have required and specific profile fields to list this information, other apps, such as A4Aradar do. Of note, although these apps provide these fields users may still choose to list N/A or provide false information. Additionally, phone apps vary in terms of the amount of space or characters users are allowed to use in writing personal descriptions about themselves or what they're looking for in a partner. One common feature of the dating phone apps is the ability to use the GPS functions of smartphones to find partners within the user's vicinity. While most gay dating phone applications have chat or messaging capabilities some apps also have unique features such as profile matching and the ability to "favorite" particular users. There are other gay dating phone apps tailored to specific subpopulations of MSM, based on sexual preferences including body type (e.g. Growlr, which focuses on Bears, hairy men), race (e.g. Jack'd, which focuses on Black MSM), and HIV status (e.g. Poz, which is designed specifically for people living with HIV).

Although these apps vary by their specific features and capabilities, they all have the potential to greatly influence sex decision making and risky sex behaviors. Mobile-based platforms may prove to be a promising behavioral change prevention opportunity given their appeal among youth and suitability for advancing research focused on contextualizing HIV/AIDS risk (Mustanski, 2001; Pequegnat, et al., 2007). The proposed connections between dating phone apps and behavioral risks among MSM have sparked a rising interest in research and interventions, with implications for both risk and protection (Stern, 2013; Handel et al., 2014;

Holloway et al., 2013; Quiroz, 2013; Rendina et al., 2014; White et al., 2013). While some sources believe that dating phone apps may serve as a virtual space for HIV prevention activities, others believe these dating apps facilitate risky sex behaviors (Stern, 2013; Sullivan, Grey, & Rosser, 2013).

Thus, while promising on the prevention front, (sexual) partner -seeking internet-mediated "communication platforms" (e.g. mobile dating apps) may also enable the development of sexual relationships. Consequently, dating phone apps may create opportunities for HIV transmission due to these platforms' accessibility, affordability, and anonymity when seeking sexual partners (Bauermeister, Lee-Santana, Johns, Pingel, Eisenberg, 2011). These apps potentially provide individuals with the ability to state their HIV status and/or condom use preferences in a safe and accepting space (i.e. the internet), and may remove or buffer some of the stress related to HIV status disclosure during in person situations. However, these GPS- capable dating phone applications also have the potential to facilitate casual and often anonymous sex. According to a recent study conducted with YMSM, the number one reason for using Grindr was to meet hook ups ((Holloway et al., 2014). As a potential facilitator of casual sex, dating phone apps might facilitate other risky sex behaviors such as unprotected anal sex (White et al., 2013). In sum, these apps have the potential to influence sex behaviors and decision making related to protective sex behaviors. Thus, an understanding of the exceptional or usual factors that might affect the decision making related to protective sex behaviors, such as condom negotiation, HIV testing and HIV status disclosure, among YBMSM who use phone apps is needed to inform future interventions which target this population.

Study Purpose

The purpose of this study was to gain understanding of the dating experiences and sex behaviors of a group of both HIV- positive and negative Black MSM. This exploratory qualitative study utilized the Integrated Behavioral Model (IBM) to frame qualitative domains and research findings. This theory was used due to previous applications of other intention-based theories (theory of reasoned action/theory of planned behavior) in studying HIV prevention (Albarracin, Durantini, Earl, 2006) as well as the lack of research utilizing the IBM to study intentions to perform protective sex behaviors among YBMSM. The primary aim was to explore the dating experiences of HIV positive and negative YBMSM who use phone apps. A secondary aim of the study was to explore the factors which influence their intentions to engage in protective sex behaviors. Qualitative methods were used because they can help to create in-depth understanding of the social dynamics and other factors that might drive sexual risk and protective behaviors among this population.

Research Questions

1. What are the dating and sex experiences of a sample of YBMSM who use smartphone-based apps on a regular basis?
2. What are YBMSM's app-related experiences around HIV status disclosure, condom use, and HIV testing?

Significance of the Study

The importance of these dating phone apps to YBMSM paired with the increasing rates of HIV for YBMSM, suggest a need for qualitative research that will give context to their dating and sex behaviors when using dating phone apps. There are studies on MSM attitudes towards sex behaviors, HIV risk, and internet dating websites (Mustanski et al., 2011; Liao et al., 2006;

Bolding et al., 2005). Other studies have examined YMSM and condom negotiation related to social networks (Peterson et al., 2009; Baeurmeister, Leslie-Santana, Johns, Pingel and Eisenberg, 2011) and internet and phone application interventions (Wohlfeiler et al., 2012; Niccolai et al., 1999). However, to our knowledge, there are no qualitative studies that investigate YBMSM intentions of HIV disclosure, condom usage, and HIV testing practices when using dating phone apps to seek partners. Qualitative research is appropriate in for this study because these issues call for real-life contextual understandings. There is a paucity of research addressing the emerging technological contexts in which YBMSM seek sexual partners and engage in protective or risky sex behaviors. This study's results could be useful in informing future phone app based interventions geared towards increasing safer sexual behaviors among YBMSM. Effective, developmentally and culturally appropriate interventions targeting young Black MSM are critically needed in today's HIV epidemic. The information gained from this research has the potential to lead to a better understanding of the context of these young men's dating and sex experiences and aid in the development of successful interventions aimed at helping this high-risk group.

Theoretical Framework

IBM is a social psychological theory, which primarily includes the constructs of the Theory of Reasoned Action/Planned Behavior (TRA/TPB) as well as constructs from other theories, and has been used to understand individual-level behavior (see Figure 1, Ajzen, 1991). As in TRA/TPB, the most important determinant of whether or not a person performs a behavior is his/her intention to do it (Mantano and Kasprzyk, 2008). According to IBM, behavioral intention is chiefly determined by attitudes, perceived norms, and perceived behavior control. Attitude is the person's overall evaluation of the behavior in terms of advantages and

disadvantages, subjective norms are determined by the perceived social pressure to perform the behavior, and perceived behavioral control is the person's perceived ability to perform the behavior given their control beliefs and perceived power. IBM also recognizes that while motivation is needed for a person to perform a recommended behavior other factor directly affect behavior; (1) knowledge and skills to perform the behavior, (2) environmental constraints that make performing the behavior challenging, and (3) salience of the behavior (or importance of the behavior to the individual). IBM posits that individuals are more likely to perform a certain health behavior if they believe that the behavior will lead to valuable outcomes, if they believe the people whose views they value think they should carry out the behavior and if they have the necessary resources and opportunities to perform the behavior (Mantano and Kasprzyk, 2008).

IBM has been used to understand behavior intention for many HIV prevention behaviors (e.g. condom use) and has been studied in diverse populations (Mantano and Kaspryzk, 2008). Therefore IBM is an appropriate theory to frame this study of the risky and protective sex behaviors of young Black MSM who use dating phone apps. As stated previously, IBM contextualizes intentions, and consequently, decisions to perform behaviors; IBM could potentially frame intentions to perform sex behaviors on dating phone apps. The context in which sexual decisions are made on these dating phone apps could be important in the development of future public health interventions. For instance, online dating practices can significantly deviate from traditional dating in that while traditional dating relationships might take months to develop in the "real world", virtual relationships can take weeks or even days online (Rosen, Cheever, Cummings, Felt, 2008). Furthermore, intimacy via phone apps might take even less time and thus require decisions regarding sex behaviors to be made fairly quickly. Therefore, the decision making process in relation to protective sex behaviors before (i.e. HIV

status disclosure, condom negotiation) and after (i.e. HIV testing) engaging in sex with men met within the context of dating phone apps needs to be researched. As public health researchers and practitioners work together to reduce HIV infection rates, it is essential that they understand how real-time GPS capable dating phone apps are influencing sexual negotiations, HIV disclosure behaviors, and HIV testing behaviors (Haltikis, 2010). Theory driven research is needed to better understand how these phone apps might influence these young men's intentions (and therefore behaviors) to use condoms, disclose HIV status, and get tested; this research will guide the development of future intervention programs geared towards increasing protective sex behaviors and thus reducing HIV prevalence in YBMSM.

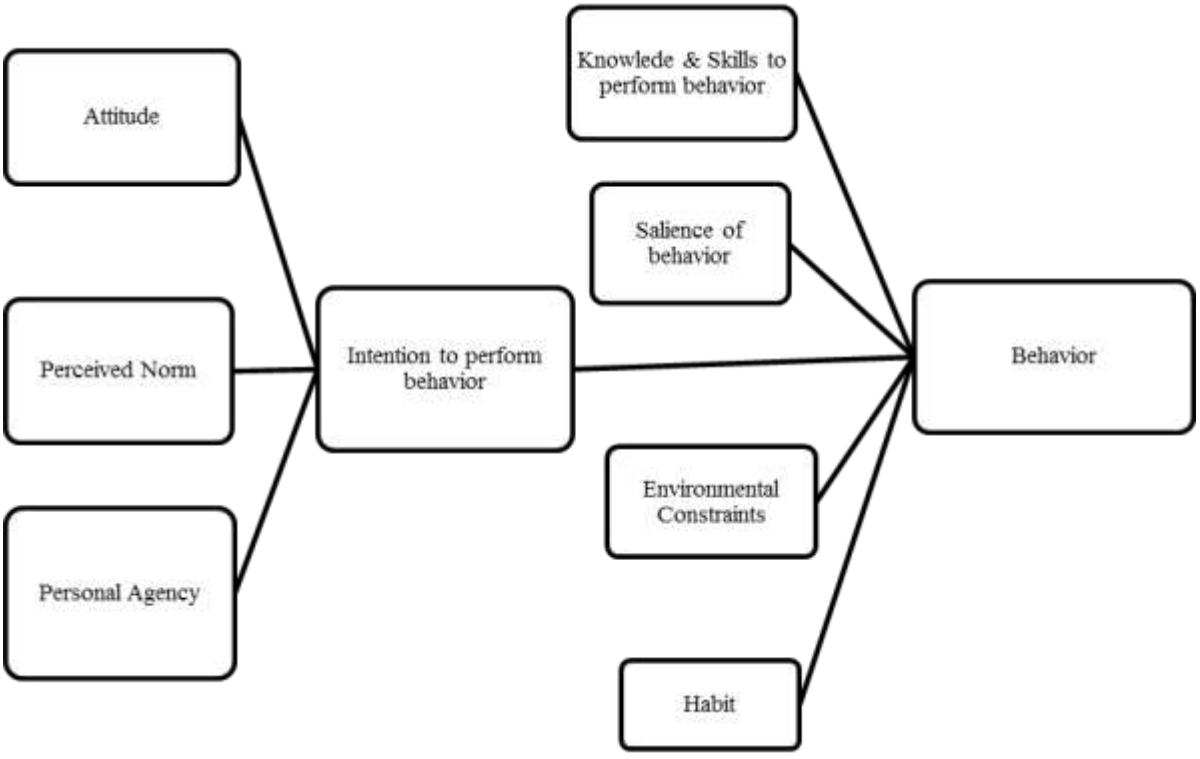


Figure 1: Integrated Behavior Model

Operationalization of Terms

YBMSM-- men who have sex with men that identify as Black/African American, between the ages of 18 and 24 years

Dating phone apps- any phone applications that YBMSM use to meet potential sex partners

HIV disclosure- the action of revealing one's HIV status in any form (online, in person, etc.)

Condom negotiation- the discussion of using condoms before engaging in sex (oral, anal, etc.)

HIV testing- the actual diagnostic procedure of testing for HIV infection

A more detailed list of other terms specific to this study can be found in Appendix A.

Literature Review

Introduction

As previously stated, the objectives of this study are to (1) explore the dating experiences of YBMSM who use dating phone apps, and (2) to explore the factors which influence their intentions to engage in protective sex behaviors. Previous literature has determined that (1) YBMSM are at an increased risk for HIV due to many factors including risky sex behaviors and (2) that internet facilitated sex seeking may influence risky sex behaviors and increased HIV risk. However, to our knowledge, no prior studies have examined the connection between this population, sex behaviors, and sex seeking via dating phone applications. This chapter will discuss the literature relevant to this issue and is organized into the following sections: YBMSM and the HIV Epidemic; Protective Sex Behaviors; Condoms; HIV Disclosure; HIV Testing; Sex Seeking Behaviors & Emerging Technologies; Theoretical Framework; and Summary.

YBMSM and the HIV epidemic. As of 2010, the estimated number of new infections among MSM had significantly increased by 12% since 2008 (CDC, 2013). Although MSM represented only about 4% of the male population in the United States, in 2010, they accounted for 78% of the new HIV infections among males and 63% of all new infections (CDC 2013; Purcell, D. et al., 2012). There is also a disparity of HIV prevalence by race and ethnicity. Blacks represent approximately 12% of the US population but account for 44% of new HIV infections (CDC, 2011; CDC, 2013).

In relation to age, between 2001 and 2006, young men who have sex with men (YMSM), 13 to 24 years of age, in the United States have had significantly higher rates of HIV infection than MSM in older groups. Between 2006 and 2009 HIV infections among YBMSM increased by 48% (CDC, 2011). This significant increase in new HIV infections among the YBMSM population has largely influenced the overall increase among MSM (CDC, 2011).Current data shows that YBMSM have the highest rates of new HIV infections among MSM. New infections continue to increase among this population (CDC, 2013; CDC, 2012).

Protective sex behaviors

These alarming statistics show the need for public health research into the risk behaviors and possible causes of these disparities. Reducing and maintaining the reduction of HIV risk taking, such as unprotected anal intercourse, not disclosing HIV status with sex partners, and not getting regularly tested for HIV among YBMSM is of great import HIV/AIDS prevention. Even relatively small increases in sexual risk-taking over time has the potential to result in a new wave of HIV infection in sexual networks of high risk groups, like YBMSM, even though such behavioral fluxes might not have equally detrimental consequences in lower risk populations (Ekstrand, Stall, Paul, Osmond, & Coates, J., 1999).

Condoms. Sexual risk behaviors account for most HIV infections in MSM (CDC, 2013). Unprotected anal sex significantly increases the risk of passing HIV during sex compared to protected anal sex (CDC, 2013). Although HIV transmission is significantly less likely to occur during oral sex; HIV infection is still possible. For sexually active MSM, one of the most effective ways to prevent HIV is to correctly and consistently use condoms (CDC, 2013).
A study about the high HIV prevalence and risk among young men, aged 15-22 years, (17% Black, 30% Hispanic, and 36% White) found that 41% of all men had had unprotected anal sex

during the past 6 months; also, 37% of the HIV infected men who did not know their positive status and 13% of the HIV infected men who did know their positive status reported unprotected anal sex (Valleroy, et al., 2000). Peterson, et al. (2009) conducted a study examining the perceived condom norms and HIV risks among social and sexual networks of YBMSM. This study found that men in the high-risk group, compared with those in the no-risk group, perceived significantly lower approval concerning condom use in their social and sexual networks. Within their dyads, men perceived that their friends and acquaintances approved for them to use condoms but that their friends and acquaintances did not use condoms themselves. A study on the risk and protective factors related to HIV-risk behaviors among HIV -positive and –negative YMSM found that HIV- positive YMSM were more likely than their uninfected peers to have unprotected anal intercourse with a greater number of partners (Forney, Miller, City Project Study Team, 2012). Among HIV negative MSM, being Black and having positive peer norms regarding safer sex predicted avoidance of unprotected anal intercourse (Forney, Miller, City Project Study Team, 2012).

Other studies found contradicting evidence in examining associations of race/ethnicity with HIV prevalence and HIV-related behaviors among YMSM. One study examined racial/ethnic differences in demographics, partner type, partner type-specific condom use, drug use, and HIV prevalence in 3316 US Black, multi-ethic Black, Latino, and White MSM aged 15 to 22 years (Harawa,, et al.,2004). In this study, risky sex behaviors were reported more frequently by Whites and less frequently by Blacks. This study found that factors such as older age, being out of school or work, sex while on crack cocaine and anal sex with another male regardless of reported condom use level were positively correlated with HIV. However, differences in these factors were unable to explain the racial disparities in HIV prevalence; Blacks experienced more

than nine times the fully adjusted odds of HIV infection compared with Whites (Harawa, et al., 2004). Another study proposed masculinity and partner selection as possible factors influencing condom use with a partner (Fields, Bogart, Smith, Malebranche, Ellen, Schuster, 2012). This study qualitatively explored how YBMSM assess risk, choose partners, and make decisions about condom use and found that perception of masculinity was the primary contextual factor influencing partner selection, risk assessment, and decision-making with regard to condom usage. One of the primary themes of this qualitative study was that during condom negotiation, the partner who was perceived as more masculine made condom-use decisions (Fields et al., 2012).

HIV status awareness. In 2009, the CDC estimated that the percentage of people who know their status has increased from 80.6%, in 2006, to 81.9% (CDC, 2012b). Although there was an increase (albeit a small increase) of 1.3% in people living with HIV that knew their status there were significant racial differences. Among racial and ethnic groups, a higher percentage (85%) of Whites living with HIV knew their serostatus compared to Blacks (81%) (CDC, 2012b). Additionally, awareness of serostatus was much lower for 13-24 year olds (41%) compared to older individuals aged 25-34 year olds (72%), and 35-44 year olds (85%) (CDC, 2012b). These figures are much lower among MSM; a more recent CDC study conducted as part of the National HIV Behavioral Surveillance System estimated that the overall percent of gay and bisexual men with HIV who were aware of their HIV infection increased from 56%, in 2008, to 66% in 2011 (CDC, 2013). Disparities across age and race exist among MSM as well. Among those infected, only 49% of young MSM aged 18 to 24 years knew of their HIV infection in

comparison to 76% of those aged 40+ who knew of their positive status (CDC, 2013). Only 54% of Black MSM knew of their HIV infection, compared to 86% of White MSM (CDC, 2013).

HIV disclosure. People living with HIV are challenged with disclosing their status (Sullivan, 2005). People living with HIV have many factors to consider when disclosing their status; some of these factors include the method of sharing their status and at what time they should share their status in a relationship. Previous research has identified factors that influence decisions about disclosure to sex partners including HIV related stigma, expectations of reactions, type and nature of the social relationship, and race/ethnicity (D'Angelo, Abdalian, Sarr, Hoffman, Belzer, 2001; Sullivan, 2005; Bird, Fingerhut, McKirnan, 2011; Hightow-Weidman et al., 2013). D'Angelo et al. (2001) conducted a study on HIV positive youth sharing HIV status with sex partners; they found that youth were significantly more likely to disclose their positive status to a main partner (62%) compared to more casual partners (27%). The study also found that youth were more likely to disclose to an HIV infected partner than to a partner who was not HIV infected or whose HIV serostatus was unknown (D'Angelo et al., 2001).
In relation to unknown and known HIV status among MSM, Crepaz and Marks (2002) conducted a study comparing HIV infected men who had anonymous sex with those who didn't; the study found that infected men who had anonymous sex had significantly higher rates of sex without protection and with people who had either an HIV negative status or an unknown status. A study examining the racial/ethnic differences in reported seroadapative and serodisclosure behaviors among partnerships of MSM found that there was no significant difference in seroadaptive behaviors across races/ethnicities among HIV negative and positive men; however, HIV positive Black men were found to be significantly more likely to report no preventive, seroadaptive strategy (i.e. unprotected insertive anal intercourse with partners of unknown or

serodiscordant statuses) (Wei et al.,, 2010). Another study on HIV status disclosure and young ethnic minority MSM found that participants who disclosed their HIV status to their sex partners were about twice as likely to have used condoms during the last episodes of both insertive and receptive anal sex when compared to those who did not disclose (Hightow-Weidman et al., 2013). Hightow-Weidman et al.'s (2013) findings suggest that HIV disclosure is important because not only because it facilitates the decision of whether or not to have sex with someone who is HIV positive, but also because it leads to higher rates of protected sex.

Sullivan (2005) conducted a literature review of self-disclosure among HIV positive males and concluded that intrapersonal factors, such as positive outcome expectations and perceived efficacy, and social and situational contextual factors, such as setting, community, and cultural attitudes were strongly associated with HIV disclosure. This review also found that interpersonal factors, such as social support and intimate communication, were related to self-disclosure (Sullivan, 2005). In both literature reviews conducted by Sullivan (2005) and Simoni & Pantalone (2004) on HIV disclosure, they discovered previous studies with conflicting evidence. These studies showed that knowing a partner's HIV status is not necessarily related to protected sex due to low perceived risk. In response to these contradictory results, Simoni & Pantolone (2004) conclude that although their study failed to demonstrate a consistent association between disclosure and safer sex does not necessarily mean that disclosure is irrelevant to the practice of safer sex. However, in Simoni and Pantalone's review, age was also found to be a risk factor for nondisclosure; HIV positive youth 25 years and younger are more likely to not disclose their status and engage in risky sex.

HIV testing. The CDC recommends that all MSM get tested for HIV at least once a year and that sexually active MSM get tested every three to six months (CDC, 2013). HIV testing is

important because it facilitates early diagnosis and access to treatment and prevention services, and the knowledge of serostatus can positively affect health behaviors, including reduced sexual risk-taking (Lauby, Millet, LaPollo, Bond, Murrill, Marks, 2008; MacKellar, Valleroy, Anderson, 2006). In 2006, the CDC collected data related to HIV risk, prevention, and testing behaviors with the national HIV behavioral surveillance system (CDC, 2011).Overall, HIV testing rates among all MSM in the report were high; still, about 40% of the men reported that they had not received an HIV test in the past 12 months and about 44% reported that they were unaware of their status (CDC, 2011). A recent CDC report on HIV testing and risk behaviors among youth in the United States found that, nationwide, the percentage of youths who had never been tested for HIV was high in comparison to other groups (CDC, 2012c). However, HIV testing was reported as higher among Blacks/African Americans, between the ages of 18-24, compared with Hispanics/Latinos (36.2%) or Whites (29.8%) (CDC, 2012c).

While Black MSM appear equally or more likely than other MSM to get tested for HIV in some studies (CDC, 2012c; Millett, Peterson, Wolitski, Stall, 2006; Oster, Johnson, Le, Balaji, Finlayson, Lansky, Mermin, Valleroy, MacKellar, Behel, Paz-Bailey, 2013), other studies contradict these findings of high HIV testing rates among the young Black MSM population. These contradicting studies suggest that compared to other MSM, high-risk Black MSM are tested less frequently, are less likely to be aware of their HIV infection, and are less likely to perceive their personal risk for HIV infection as an important decision in getting tested (Hussen et al., 2013; MacKellar et al., 2006; MacKellar et al.,2005). A study conducted in 2006, found that most young MSM had not tested annually and nearly half had not tested in the past year (MacKellar, et al., 2006). Of those who had never or last tested over one year ago, approximately one in nine were found to be HIV positive. This study also found that two thirds of recent male

and female sex partners who might have been exposed to HIV were partners of HIV infected unaware MSM who had tested in the past year (MacKellar, et al., 2006). Of those who tested in the past year, nearly one in four Black MSM acquired HIV (MacKellar, et al., 2006). Only about 50% of young MSM that tested did so because of specific risk behaviors. Young Black MSM, the highest at risk for HIV infection, were found to least likely have tested because of perceived HIV infection risk (MacKellar, et al., 2006). Mimiaga et al.'s (2009) study of decreased utilization of HIV testing services among at risk Black men found that low perceived risk also contributed to low testing rates in this population. Hussen et al. (2013) also suggested reasons for these discrepancies between unrecognized HIV infections and findings that suggest Black MSM are more likely to test than MSM of other racial groups (Lechuga et al., 2013; Lo et al., 2012); these reasons include (1) the frequency of HIV testing among Black MSM might be sub-optimal and (2) that the studies might be biased and somehow missing high-risk, low-frequency HIV testers. Hussen et al.'s (2013) qualitative study exploring the HIV testing behaviors of Black MSM found that there are four distinct HIV testing patterns: (1) Maintenance Testers, who tested regularly as part of routine self-care, (2) Risk-Based Testers, whose testing depended on relationship status or sexual behavior; (3) tested infrequently and/or failed to follow up on results. Both Maintenance Testers and Test Avoiders were young on average (20-30 years of age).

Numerous studies have attempted to explain the differences in rates of HIV testing among MSM. The likelihood of testing has been associated with the following sociodemographic and behavioral factors: younger age, sexual risk behavior, and partner types (Hussen et al., 2013; Miller, Simon, Miller, Long, Yu, Asch, 1999; MacKellar, et al., 2006; Sumartojo et al.,, 2008;

Sifakis et al., 2010). Sumartojo et al. (2008) found that rates of HIV testing were lowest among men engaging in risk behavior with casual partners.

Sex Seeking Behaviors & Emerging Technologies

Further research also needs to be conducted to understand current YBMSM methods of sex seeking which have been positively correlated with increased HIV risk in order to best address the risky and protective sex behaviors of YBMSM (Bolding, Davis, Hart, Sherr and Elford, 2005 Mutanski, 2001; Pequegnat, et al., 2007). In recent years, internet dating has shown to be popular for youth because of accessibility, affordability, anonymity, and tailoring for a variety of populations and their sex preferences (sexual orientation, fetishes, etc.) (Bolding et al., 2005). For instance, MSM are able to easily search for relationships on multiple free or subscription-based websites designed specifically for dating and finding sexual partners (Wohlfeiler, Hecht, Volk, Raymond, Kennedy and McFarland, 2012). The internet has grown exponentially as a venue in which MSM interact and seek sexual partnering; the internet has even been referred to as a "cyber-bathhouse" (Haltikis, 2010). In a systematic review on sexually transmitted diseases, Cielieski states "although bathhouses and gay bars remain popular venues for MSM to meet sex partners, in recent years, the Internet is increasingly being named as a forum for this purpose" (Cielieski, 2003, pp. 149).

Dating phone applications and online dating. Dating applications, or "apps", available on smartphones have the potential to become an even more popular method of sex seeking for this population. The connection between dating phone apps and behavioral health risks among MSM has sparked a rising interest in research and interventions, with implications for both risk and protection (Stern, 2013). While some sources believe that dating phone apps may serve as a space of prevention activities other believe these dating apps are one of the facilitating factors to

risky sex behaviors (Stern, 2013; Sullivan, Grey, & Rosser, 2013). Recently, the New York Health Department has cited dating phone apps or "hook up" apps in the recent meningitis outbreak among MSM citywide (Stern, 2013). On the other hand, current research is starting to explore the roles of emerging technologies, such as dating phone apps, for HIV prevention among MSM (Sullivan, Grey, & Rosser, 2013). This emerging research points to a range of potential functions for these new apps, which may include facilitation of sexual negotiation or serving as a platform for sexual health interventions. However, the relationship between phone app usage and HIV risk remains incompletely studied. Thus, future research needs to examine the possible correlation between using dating phone apps and risk behaviors.

Similarly, modern smart mobile phones (i.e. Android, I-Phone) have popularized social networking applications which allow users to find and meet other men online (Burrell et al., 2012; Quiroz, 2013). These applications have become especially popular among young men who have sex with men (YMSM) (Stern, 2013). MSM-specific phone applications such as Grindr, Jack'd, and Hornet are a few current dating phone apps (Grindr. 2013; Jack'd, 2012; Hornet Gay Social Network, 2012). Smart phones have global positioning system (GPS) capabilities which allow users to find locations and people easily and quickly; these GPS capabilities are accessible for most apps, including dating phone apps. Similar to dating websites, the smart phone applications allow users to share pictures, connect with others via chat rooms, and customize their profile. However, the GPS capabilities of smart phones also enable users to share their exact location to meet interested men quickly and casually (Burrell et al., 2012). This new smart phone based dating may provide a level of anonymity which may be appealing to YMSM (Mustanski, Lyons, & Garcia, 2011).

These apps not only provide a space of anonymity and privacy they can also facilitate a welcoming space for open communication about condom use and HIV status disclosure. Many MSM-tailored apps include options for users' personal profiles to openly disclose their HIV status and/or describe their condom use preferences. For example, Grindr launched in March 2009 and currently maintains over 1.5 million user profiles; Grindr reports estimated daily traffic of 250,000 users and approximately 3,000 new users each day (Landovitz et al., 2013). Grindr user profiles contain a photograph and demographic data, and are displayed in order of proximity to the user. Similarly, another dating phone app, Hornet is a new gay social networking app that also has GPS location capabilities, profile sharing, chatting, and anonymity similar to other apps (e.g. Grindr and JACK'd); but, it also includes a Know Your Status (KYS) option which allows the user to openly share HIV status if the user chooses to do so (Hornet Networks Limited, 2012; Hornet Gay Social Network, 2012).

A recent study on the use of Grindr among a predominantly White and Latino (71.8%) young MSM population, aged 18-24 years, found that 75.4% had sex with a partner met on Grinder (Rice et al., 2012). While most of these participants used Grindr for multiple reasons other than seeking sex partners (e.g. to kill time and to connect with the gay community) 65.1% still used Grindr to meet people to have sex/hook up with. Participants who met their last partner on Grindr reported that this partner was a casual sex partner and higher average number of recent sex partners met on Grindr compared to participants who did not meet their most recent partner on Grindr; however, a greater percentage of those who met their most recent sex partner on Grindr reported having anal sex with a condom during that sexual encounter. In this sample, most participants (N=104, 72%) reported no differences in unprotected anal intercourse behaviors regardless of how they met their two partners. Another recent study examined the

behavioral epidemiology of Grindr users in Los Angeles, (this sample was also predominantly non-Black (93.6%)) found that most (83.2%) of users reported an HIV test within the past 12 months, 56% reported meeting sexual partners on Grindr in the past 3 months, and 46.1% users reported unprotected anal sex in the past three months (Rice et al., 2012). Of those who reported engaging in unprotected anal sex, 70% reported believing that it was unlikely or very unlikely that they were ever going to acquire HIV infection. Of all participants, 52.8% did not always ask sex partners about their HIV status. In another research study conducted with YMSM who use Grindr, participants stated that their number one reason for using Grindr (29%) was to meet hook-ups (Holloway et al., 2013). In this same sample of participants, among those that used Grindr and other online dating sites, a statistically significant greater percentage online dating sites for "hook-ups" (42%) compared to Grindr (30%) (Holloway et al., 2013). A study conducted by Landovitz et al. (2012) found that approximately 60% of MSM who used Grindr reportedly used the app for sexual partnering; 70% of those users who also engaged in unprotected anal sex identified themselves as low-risk for contracting HIV (Landovitz et al., 2012).

Risks and online venues. With the increase in the use of internet/online dating (i.e. using dating websites) and also an increase in sexually transmitted diseases, researchers have sought to discover any possible correlations between unprotected sex, STI transmission and internet dating (Liao, Millett, & Marks, 2006; Klausner, Wolf, Fischer-Ponce, Zolt, and Katz, 2000; Rosser, Oakes, Horvath, Konstan, Danilenko and Peterson, 2009; Rosser et al., 2011). A meta-analysis (2006) reported that about 40% of MSM use the internet to search for sexual partners and found that unprotected anal intercourse was more prevalent among MSM who used the internet to find sexual partners (Liao et al., 2006). Also, higher risk for HIV transmission through casual sex

partners has shown to be more prevalent for MSM using internet dating as opposed to offline dating (Bolding et al., 2005). Higher frequency use of the internet to find sex partners has been correlated with more risky sex behaviors (unprotected anal sex) and higher risk for HIV transmission among MSM (Downing, 2012). Also, a recent cross sectional study found that the number of sexual partners met from online social networking technologies is associated with increased number of new partners (Young, Szekeres, & Coates, 2013). While research has not shown that online partner seeking is a direct correlate of HIV risk, findings suggest that men's motivations/intentions to seek partners online as well as the interactions that occur during these online exchanges (e.g. condom negotiation or HIV status disclosure) may better explain the relationships between mobile dating phone app use to seek partners and HIV risk (Mustanski, 2007; Winchester, Abel, Bauermeister, 2012).

The internet serves as a venue for MSM to not only seek sexual partners; this virtual venue can also serve as a place to disclose HIV status (Winter, Sullivan, Khosropour, Rosenberg, 2012, Haltikis, 2010). Horvath, Nygaard, and Rosser (2010) found that MSM may select sexual partners and inform their condom use based on the HIV status posted in a prospective partner's profile, regardless of whether the individual's profile information is accurate or current. A recent study on HIV status and partnership sexual risk among internet using MSM revealed that Black MSM, especially HIV positive Black MSM, discussed HIV status with unprotected anal intercourse partners significantly less than did white MSM who use the internet (Winter, Sullivan, Khosropour, & Rosenberg, 2012).

Grov et al. (2013) conducted a study exploring venue-based characteristics (e.g. bathhouses, anonymous chat online) impact on how MSM negotiate sex and HIV-associated risk behavior. This study found that HIV disclosure was actually higher among MSM who met their most

recent partner online and suggested that the impersonal nature of online chatting potentially facilitates an environment conducive to discussing sensitive topics (Grov et al., 2013). Other studies have also found that HIV disclosure was highest among men who reported meeting their most recent sex partner online (Grov, 2011; Horvath et al., 2008). However, researchers have found that although HIV disclosure among MSM using internet dating, high levels of inaccurate status disclosure has also occurred in online spaces (Horvath et al., 2008; Ross, Rosser, Coleman, & Mazin, 2006). Additionally, Redina et al. (2014) conducted a study examing the relationship between lifetime and recent HIV testing among MSM who use Grindr, a dating phone app. The findings of this research study show that overall rates of lifetime and recent testing among MSM who use Grindr were greater than the rates of the general population. Redina et al. (2014) found that among men who had been tested most recently, the proportion who had recently engaged in unprotected anal sex was also highest suggesting that either (1) risk leads to HIV testing or (2) unprotected anal sex and HIV testing exist simultaneously and that other factors may influence the association.

These HIV risk findings are especially interesting because of the potential influence internet dating via phone apps has on this protective sex behavior, HIV status disclosure, among YBMSM (Sullivan, et al., 2013). HIV transmission risk among YMSM has been found to be predominantly related to incorrectly assuming one's partner shares an HIV negative status (Zablotska et al., 2009; Dawn et al, 1994) or broken negotiated safety agreements (Guzman, Colfax, Wheeler, Mansergh, Marks, Rader, & Buchbinder, S., 2005). While status disclosure and condom use are also important factors in preventing HIV infection (Niccolai, Dorst, Myers & Kissinger, 1999), these protective sex behaviors may be especially difficult for youth populations and populations disproportionately affected by HIV (i.e. YBMSM) to perform.

As stated earlier, similar to dating websites, some dating phone apps provide a space for users to explicitly state their safer sex intentions within their profile. For example, the website, http://adam4adam.com, and the dating phone app, Adam4Adam Radar allows users the option to disclose their HIV status, using a drop down menu choices including 'don't know', 'negative', 'positive', as well as the option to share their sexual behaviors, using a similar drop down menu of options including 'safe sex only' and 'anything goes'. While these options can be perceived as empowering users to enact their sexual agency when using dating phone apps to seek partners, the "design decisions" could present unintended consequences with regard to HIV transmission, particularly if users rely on this profile information as the primary basis when making sexual decisions (e.g. withholding HIV status, not pursuing conversations about HIV status, and engaging in unprotected sex/raw sex) (Winchester, et al., 2012). For instance, given that many people do not know their HIV status (especially within the at risk groups young and Black MSM), dating phone app users who select their sexual partners by similar HIV status as a protective sex behavior, may be increasing their risk for HIV infection (Winchester, et al., 2012). Users who use phone apps (e.g. Hornet) that provide a field in the profile to list most recent test date face similar issues. The most recent test date does not intuitively account for "window period challenges"; 2-8 weeks is the time period for a newly HIV infected person to make detectable antibodies (Winchester, et al., 2012). Consequently, users may wrongly believe themselves to be negative, select 'negative' as the HIV status on their app profile, and then possibly engage in unprotected sex during the most infectious period of HIV transmission (Winchester et al., 2012).

These issues are possibly more detrimental for users of the dating phone apps that do not contain predetermined fields to express sexual behaviors, HIV status disclosure, and testing dates. These

dating apps leave profile content and content sharing completely up to the user, which may or may not include information about these protective sex behaviors. The presence of either the active sexual behavior prompts or the passive open concepts could facilitate an environment of language misinterpretation (Lombardo, 2009). Misinterpretation or misinformation on app profiles has the potential to affect the decision making related to sex behaviors; for example, if someone were to post HIV negative or not post their HIV status on their dating phone app profile another user viewing the profile might assume that because this individual posted either a negative status or no status at all that he is also negative which might thus influence discussion of HIV status. These sex behavior communication issues have implications for the way young MSM use dating phone apps to seek partners and communicate about sex behaviors. A recent qualitative study found that young MSM often reported miscommunication and assumptions as reasons leading to unsafe sexual practices with partners (Eisenberg, Bauermeister, Johns, Pingel, Santana, 2011). The increase in presence of and use of dating phone apps among YMSM presents a unique setting for YBSM to have their protective sex behaviors (i.e. condom use, HIV disclosure, and HIV testing) influenced.

Theoretical Framework

IBM has been used many times to understand behavioral intention, condom use and other HIV/STD-prevention behaviors (Montano and Kasprzyk, 2008). Albarracin, Johnson, Fishbein, and Muellerleile (2001) examined how well intention predicted condom use in 96 different data sets (N=22,594). They found that perceived behavior control, attitudes and norms were most related to condom use intentions and condom use. Other studies also support the use of IBM constructs to understand sexual risk behaviors among people living with HIV (Crepaz and

Marks, 2002), sexual risk behaviors among African America adolescents (Jemmott, Jemmott, Fong, and McCaffree,1999), condom use among MSM (Kasprzyk, Montano, & Fishbein, 1998), and sexual negotiation and HIV disclosure among MSM (Horvath, Oakes, and Rosser, 2008). Buhi and Goodson (2007) conducted a systematic literature review of IBM theoretical constructs' relevance and significance in adolescent protective and risky sexual behavior (including condom use) and found that intention, perceived norms, an environmental constraints were stable predictors of sexual behavior outcomes. Perceived peer and social norms on condom use and HIV sexual risk behaviors have shown to affect general community samples of young Black gay men (Peterson, Rothenberg, Kraft, Beeker & Trotter, 2009; Hart & Peterson, 2007). A study on condom use self-efficacy, a proxy to personal agency, and HIV risk practices among MSM who use the internet to find male partners for unprotected sex found that self-efficacy played a crucial role in HIV risk practices among high-risk MSM (Klein, 2013). Another study found that greater self-efficacy predicted less unprotected intercourse with at-risk partners among MSM (Widman, Golin, Grodensky, Suchindran, 2013). In a study on the predictors of HIV risk behavior among BMSM higher levels of unprotected sex were predicted by weaker perceived norms for condom use and weaker risk reduction behavioral intentions (Kelly, St. Lawrence, Amirkhanian, Difranceisco, Anderson-Lamb, Garcia, Nguyen, 2013). These studies show the relevance and importance of including IBM constructs, such as personal agency and perceived norms, in the context of BMSM protective and risky sex behaviors. However, no research has been conducted to understand how using dating phone apps might affect sexual risk or protective behaviors in the context of the IBM theoretical framework.

The importance of these new social networking tools to YBMSM paired with the increasing rates of HIV for YBMSM, unsafe sex practices and status disclosure challenges in the IBM context

suggest a need for research involving these factors in a qualitative research study. There have been many studies on MSM attitudes towards sex behaviors, HIV risk, and internet dating websites (Mustanski et al., 2011; Liao et al., 2006; Bolding et al., 2005). Other studies have examined YMSM and condom negotiation related to social networks (Peterson et al., 2009; Baeurmeister, Leslie-Santana, Johns, Pingel and Eisenberg, 2011) and internet and phone application interventions (Wohlfeiler et al., 2012; Niccolai et al., 1999). However, there are no existing qualitative studies which address YBMSM intentions of HIV disclosure, condom usage, and HIV testing practices when using dating phone apps to seek partners.

Summary

YBMSM are one of the few groups in whom rates of HIV are actually increasing while the overall HIV incidence is relatively stable in the United States (CDC, 2012). A closer examination of this young population's potential facilitators of protective or risky sex behaviors is needed. The use of dating phone apps in this demographic has the potential to influence their sexual behaviors. Research is needed to better understand how these phone apps might influence intentions to use condoms, disclose HIV status, and get tested. Higher risks for HIV transmission through casual sex partners and unprotected anal intercourse have shown to be more prevalent for MSM using internet dating. However the potential HIV risk associated with newer dating phone apps use among YBMSM has yet to be explored. Due to the lack of research addressing the emerging technological contexts in which YBMSM seek sexual partners and engage in protective or risky sex behaviors this research study will explore the dating experiences of YBMSM who use dating phone apps as well as the factors which influence their intentions to engage in protective sex behaviors.

Methodology

Introduction

This study was an exploratory qualitative interview study; it was conducted in a population of both HIV- positive and – negative YBMSM in Atlanta, Georgia. Males age 18-24 were screened for study entry until twenty eligible participants were recruited (10 HIV positive and 10 HIV negative). Following a screening evaluation to determine eligibility using the screening guide (Appendix B) informed consent (Appendices C, D) was obtained from eligible participants. Then semi-structured interviews were scheduled, conducted, and audio-recorded. Upon completion of each interview, the principal investigator transcribed each interview. Data analysis proceeded after the transcription of all interviews.

Participants

This study was conducted from August-December 2013 with YBMSM between the ages of 18 to 24 in Atlanta, Georgia. The eligibility requirements for the study included being between the ages of 18-24 years of age, being of male sex at birth, endorsing sex with men, regular use of dating phone apps at least once a week, ability and willingness of participant to provide written informed consent, ability and willingness to undergo a semi-structured interview, being willing to show the interviewer his dating phone app profile, and being fluent in English.

Participant Recruitment

Prior to implementation of this study, the protocol and written consent scripts were approved by the Emory University institutional review board (IRB) and the Grady Research

Oversight Committee (GROC). Potential candidates for participation were recruited via the following mechanisms: 1) Email distribution of flyers to a listserv of MSM who had previously expressed interest in research participation; 2) Participant self-referrals from flyers posted at local community based organizations; 3) Referrals from eligible participants; and 4) Healthcare provider referrals. Each of these procedures is described in detail below.

All recruitment methods provided a potential participant with a link to a web survey in which he can be screened for the study. As the screener included a question about HIV status, which is protected health information (PHI), potential participants were shown a short informed consent document online before filling out the screening questionnaire. The consent form was presented as the first page at the beginning of the link from the flyer/email (Appendix E). Potential participants who provided consent then started the screening questionnaire. The screener questionnaire, hosted on SurveyGizmo, took approximately five minutes to complete. Respondents were asked to indicate their age, sex, HIV status, race, frequency of dating phone app use, history of sex with male partners, fluency in English, and permission of the interviewer to view dating phone app profile. Eligible respondents were asked to provide their first name, email address and phone number. The screened respondent was contacted by the principal investigator, and a time and location was then scheduled for an interview.

Participant self-referrals from e-mail distribution of flyers. Electronic flyers were emailed as attachments and distributed to an established listserv that was used by Emory researchers to help with recruitment for MSM and HIV research. Those who self-identified as Black and were within the age range could then self-refer via the contact mechanisms described on the flyer. Approximately five of participants were recruited from this method of recruitment.

Participant self-referrals from posted flyers. Paper flyers (Appendix E) advertising the study were posted in gay friendly venues, including community spaces (e.g., cafes, clubs, restaurants, gyms), university buildings, and clinical spaces (e.g. HIV testing and treatment facilities). Interested individuals could write down contact information or scan it with a QR code (or whatever these things are called). They were screened for enrollment as described above. Approximately eight participants were recruited from this method of recruitment.

Participant referral/snowball method. The third recruitment strategy relied on participant referral. Respondents often share very personal information that they have never shared with anyone else before and feel a great sense of relief after having done so. With this positive research experience, many respondents are willing to tell friends and acquaintances about the study. Thus, each respondent was given two paper flyers to distribute to members of his social network who fit the eligibility criteria. Approximately two participants were recruited from this method of recruitment.

Health care provider referrals. One of the co-investigators, was a provider at the IDP clinic. This co-investigator was primarily responsible for meeting with health providers (including physicians, nurses, and social workers) and initially informing them about the study. Providers were asked to identify potential participants and obtain their permission to be contacted by the principal investigator for screening and enrollment. If patients were amenable, they were emailed the flyer and used the link to the web survey for screening or called directly and screened over the phone (see Appendix B for eligibility screening form). Additionally, one of the social workers at the IDP clinic allowed the principal investigator to visit the end of HIV positive teen support group sessions to distribute flyers. Approximately five participants were recruited from this method of recruitment.

Data Collection Methods

Interviews were conducted at a location that was both convenient and comfortable to the participant, as well as a consistent space that allowed for standardization of setting. Interviews were conducted primarily at a school of public health, with a secondary location being in a private office that was a community space for young MSM and which offered a reasonable level of privacy and was conducive for audio recording. Sensitivity with regards to privacy and comfort of participants was of the utmost importance for this project. The principal investigator served as the interviewer and conducted all of the semi-structured interviews. In order to ensure consistent review and training of qualitative techniques, two pilot interviews were conducted. At the end of pilot interviews, respondents were asked for feedback; however, none of the participants had any critiques on the structure or content of the interview.

Data Collection Process

Upon arriving at the interview site, respondents were given a brief introduction to the study and informed that the interview will be digitally recorded. After confirming eligibility and obtaining written consent (Appendix C), participants completed a brief demographic questionnaire before taking part in a semi-structured interview that lasted approximately 90 minutes. During the interview, the participant was asked to present his dating phone app. The interviewer then filled out the profile questionnaire using the information presented on the profile and using probing questions regarding that information. The respondent was notified of their right to terminate the interview at any point if they did not feel comfortable or decided to end early. After completion of the study, participants were given a $25 Visa gift card for their participation.

Semi-structured interviews. Semi-structured, in-depth interviews comprise a particular field research data-gathering process designed to generate narratives that focus on fairly specific research questions (Crabtree & Miller, 1999). The interview guide (Appendix F) included 5 major domains, with questions framed within an IBM theoretical framework, as well as a list of optional probes to facilitate more thoughtful discussion responses to the questions. The interview began with a broad question to get the respondent comfortable with talking and proceeded with a list of probing questions. The opening question was: "Tell me a little bit about yourself." Major domains that were addressed in the interview included: 1) Experiences using Apps, 2) Sex and Relationships, 3) HIV Status and Disclosure, 4) Condom Use, and 5) HIV Testing.

Recording of semi-structured interviews. All interviews were digitally recorded. In doing so, the interviewer relied on the use of a handheld digital audio recorder, which offered a way to store and organize files in a manner that offered better sound quality than traditional audio-cassettes.

Questionnaire. Before starting the interview, respondents were asked to respond to a brief questionnaire (Appendix G). Questionnaires were used to augment the rich textual data and capture the demographic characteristics of respondents. Additionally, the survey data was used to create meaningful categories of respondents with which to analyze the qualitative data. Responses to the surveys were used to further analyze codes and themes among the young men participating.

Profile Questionnaire. During the interview, respondents were asked to show one of their dating phone app profiles. The interviewer used the profile questionnaire (Appendix H) to abstract data regarding key characteristics of their profile (such as profile description, number of friends, and age). The interviewer also used the information to probe about the new information

that had not yet been discussed in the interview. Data from the profile questionnaires further augmented the textual data, and at times were used to create meaningful categories for comparisons during qualitative analysis.

Data Analysis

Data entry, coding, and analysis. One analyst (the principal investigator) transcribed the interviews verbatim and imported the transcripts into MAXQDA, a software used to manage large amounts of textual data (VERBi, 2013). Next, memos were also written during the interview and transcribing process. Memos were written in the margins of the profile questionnaire worksheet and also in a field journal during transcription to keep track of relevant, common, and emerging themes. The principal investigator then created a code book which included codes that highlighted themes that appeared across all interviews. These codes included themes such as community, sex, HIV status, and condom use (A detailed list of codes used in the study can be found in Appendix I). Transcripts were then coded; as each transcript was coded the principal investigator wrote summaries for each participant. These summaries were first divided into four categories: dating phone apps and dating experiences, condom use, HIV status disclosure, and HIV testing. These four categories were then framed around the IBM theoretical constructs (attitudes, perceived norms, personal agency, overall intentions, knowledge, skills, habits, salience of behaviors, and environmental constraints) so that each category included an IBM construct subheading. Each summary and transcript was labeled with a pseudonym chosen by the principal investigator along with the participants' HIV status and dating phone apps they used. Memos, summaries, and coded transcripts were compared across participants. Using this methodology, salient themes were identified in both a deductive (codes from transcripts and memos) and inductive (theoretically framed summaries) manner. Thus, the results reflect

relevant themes from the participants' interviews organized using a theoretical framework. The pseudonyms, age, and HIV status of each participant at the time of the interview are displayed with quotations in the results section.

Data Quality

Reliability and validity. For qualitative data, there are several ways in which we sought to improve reliability, which is generally interpreted as *replicability* in this context. First, we followed the interview guide with each respondent in a consistent manner. The flow of each interview dictated that topics were covered in a different order than what was presented in the interview guide, probes varied somewhat, and the question wording were modified for the purpose of clarity. Second, rigorous documentation of all phases of the research was an established method for ensuring replicability. Simply put, others could repeat this research process, step by step and obtain similar, but not identical results. The principal investigator, who conducted all of the interviews, maintained a field journal and recorded each detail involved with the research throughout the course of the project. Third, inter-rater reliability was computed during the coding process (expressed as a percentage of the time that the two coders used the same codes for a given passage of text), as the principal investigator and another study member served as independent coders.

In the context of internal validity, validity was enhanced by providing the interviewer with training and experience and pilot testing the instrument to ensure that the terminology was appropriate. The principal investigator completed coursework in qualitative methodology, underwent training in qualitative analysis. The interview instrument and questionnaire were pilot tested on the first two participants who were recruited into the study to address appropriateness and understandability of the instrument language, time duration of interview, and other logistical

concerns. Following these pilot interviews, respondents were asked about questions that were unclear or topics that should have been covered during the interview; however, none of the pilot tested participants experienced any problems with the interview protocol. Finally, the interview guide was slightly revised during the interviewing process in order to elaborate linkages that emerged from the analysis of previously collected data.

Results

The following section provides a summary and analysis of participant responses about their experience using dating phone apps, their dating experiences, and their sex behaviors in the context of condom use, HIV testing, and HIV disclosure. Participants discussed 1) Dating Phone Apps and Dating Experiences and 2) Protective Sex Behaviors (HIV disclosure, condom use, and HIV testing) within the context of IBM constructs: attitudes, perceived norms, self-efficacy, and intentions. Significant differences of opinions between HIV positive and negative participants were also described.

Participant Demographics

Of 109 respondents screened for this study, 25 were eligible, and 20 participants were enrolled in the study. The remaining five eligible participants were unable to be reached because of various reasons (e.g. phone disconnected). We enrolled 10 HIV-positive and 10 HIV-negative YBMSM aged 18 to 24 years of age. Table 1 provides basic demographic information about participants. Participants had an average age of 23.05. Most participants (17, 85.0%) reported having at least 'some college education'. Participants also reported having an average of 8.35 male sex partners in the past year. Most participants (11, 55%) reported having sex with more than one partner. Table 2 describes participants' dating phone app use. Most information regarding dating phone app use (such as average age, frequency of dating phone app use, etc.) was similar across both HIV positive and negative groups. Most participants (13, 65%) described using dating phone apps at least once a week.

Table 1. Demographic Characteristics of Participants (N=20)

Characteristic	n	%	M	SD	Range
Demographic variables					
Age			23.05	1.54	18-24
Highest level of education					
9^{th}-11^{th} grade	4	20.0			
High school	4	20.0			
diploma/GED	9	45.0			
Some college	1	5.0			
College degree	1	5.0			
Technical school	1	5.0			
Job training					
Number male partners in the past year			8.35	10.11	1-42
Currently having sex with more than one partner					
Yes	11	55.0			
No	8	40.0			
Refused to answer	1	5.0			

Table 2. Demographic Characteristics of Participants: Dating Phone App (DPA) Characteristics by Serostatus

	Serostatus											
	Seropositive (N=10*)				Seronegative (N=10)				Total (N=17)			
Characteristic	n	%	M	SD	n	%	M	SD	n	%	M	SD
Demographic variables												
Age at first DPA use	-	-	21.0	2.58	-	-	20.7	2.36	-	-	20.88	2.26
DPA use												
Once a week	4	40.0			3	30.0			7	35.0		
Almost every day/ Every day	6	60.0			7	70.0			13	65.0		
Log on in one week												
Very often	4	50.0			3	30.0			7	35.0		
Often	2	25.0			6	60.0			8	40.0		
Rarely	2	25.0			0	0			2	10.0		
Not very often	0	0.0			1	10.0			1	5.0		
Use DPA to search for men												
Very often	0	0.0			2	20.0			2	10.0		
Often	6	75.0			5	50.0			11	55.0		
Rarely	2	25.0			2	20.0			4	20.0		
Not very often	0	0			1	10.0			1	5.0		
Use DPA to meet men												
Very often	1	11.1			2	20.0			3	15.0		
Often	4	44.4			4	40.0			8	40.0		
Rarely	3	33.3			4	40.0			7	35.0		
Not very often	1	11.1			0	0.0			1	5.0		
Sex with men using DPAs												
Very often	0	0.0			3	30.0			3	15.0		
Often	3	30.0			4	40.0			7	35.0		
Rarely	5	50.0			2	20.0			7	35.0		

Not very often	2	20.0	1	10.0	7	15.0
Relationship from using DPA						
Very often	1	10.0	1	10.0	2	10.0
Often	0	0.0	2	20.0	2	10.0
Rarely	4	40.0	4	40.0	8	40.0
Not very often	5	50.0	3	30.0	8	40.0
HIV test in the past year						
Yes	-	-	10	100.0		
No	-	-	0	0.0		
Likelihood of getting HIV based on sex behavior in the past year	-	-	1	10.0		
Very Likely	-	-	1	10.0		
Likely	-	-	4	40.0		
Equally likely as unlikely	-	-	1	10.0		
Unlikely			3	30.0		
Very unlikely						
Likelihood of getting HIV based on sex behavior in the past 3 months	-	-	1	10.0		
Very Likely	-	-	1	10.0		
Likely	-	-	1	10.0		
Equally likely as unlikely	-	-	3	30.0		
Unlikely			4	40.0		
Very unlikely						

Dating Phone Apps & Dating Experiences

Participants described their experiences using the dating phone apps as well as their experiences using dating phone apps to meet and date men. In the following section includes participant descriptions of their experiences with app use in terms of: App Description; Use of the Apps; Information Disclosure; Communicating, Dating, & Hooking-Up. Subsequently, a summation of participants' attitudes, perceived norms, personal agency, and overall intention in regards to the dating apps is described in the context of IBM.

***App description*.** Most participants had more than one dating app downloaded on their phone at the time of the interview. Participants that currently only had one app on their phone reported previously having multiple dating apps. Table 3 describes the dating phone apps that participants reported using. Participants described several similarities and differences between the apps, their dating app preferences, and their motivations and expectations when using these apps. Participants' use of dating apps was based on the following four criteria: their perception of the apps: (1) usability, (2) target populations, (3) reputations in the "Black gay community", as well as (4) their success in meeting attractive men using the apps.

usability. All participants highlighted the importance of usability in determining their likelihood of using a particular app. Factors that contributed to an app's usability included being easily able to locate guys, accurate distance locations (i.e. using feet vs. miles to describe another user's distance from the participant), few updates and glitches, and simplicity of the apps' design and interface. If a dating app wasn't able to meet most or all of these usability requirements participants either used it less frequently or deleted the app after a trial period.

target population. Many participants strongly believed each app was tailored for a particular audience. Apps were tailored for users based on their sexuality, their HIV status, their

race, and their body type. For example, participants described Jackd as a Black gay app, Grindr as a white gay male app, and Growlr as an app for men that identify as Bears (hairy men, race is irrelevant). An app's target population was important to participants because it helped them to determine the types of users that would be on the app, if they would be perceived as attractive, and if they would able to find an attractive partner using the app. For example, some participants stated that they would use Jackd, for example, if they wanted to only talk to Black men in a certain area, if they felt desired by Black men more than other types of users on other apps (e.g. Grindr), and/or if they preferred Black men.

> *It's really not a big difference just as far as, like I said, race was concerned, most people are on Jackd. Like for A4A radar you got all for everybody, you'll find Black, White, Asians, Hispanics. I think Jackd is mostly...I think it was built for everybody but you'll see a lot of African Americans on there. I guess that's like the number one black app or [the] number one black app for gay men or bisexual men or however you wanna call it. And like Grindr is more like I said Caucasians, White. Every now and then you'll see a couple of Black people, like sprinkles. There's not many of them that you're going to see. (Christopher, 23, HIV negative)*

reputation. Perceived popularity and reputation of certain apps also played a large role for most participants. Participants found apps to be either appealing or unappealing based on their reputation in the "Black gay community". If an app was popular and they believed most of their peers had the app, participants described themselves as following the latest trends in dating within their community. Some participants used apps, such as Jackd, because of their popularity and trendiness as well as its reputation of being a "sex app" or a "hook-up app within the "Black gay community". Some participants preferred apps that were less popular and infamous in the "Black gay community" (Table 5 operationalizes terms such as "hook-up" in Appendix A). The participants who preferred an app because of the app's reputation as a trendy "hook-up" app reported wanting to use the app due to the sheer large population of eligible Black men on the app making it easier for them to meet new partners within the Black community. The participants

who preferred less popular apps reported wanting to meet different types of people outside of the "Black gay community" and also preferred not to be associated with the hook-up culture within parts of the "Black gay community".

success rates. The final criterion participants judged apps by was their success in meeting men on the apps. If during a trial period of using the app, participants were unable to engage men (within their desired partner preferences) into meeting, then the app would be either used less frequently or deleted. HIV positive participants reported having lower expectations than HIV negative participants about meeting men on apps and thus tended to keep apps regardless of having successful dates, sexual encounters, or relationships with men from the app.

As described in Table 3, Jackd, Grindr, and Adam 4 Adam are the most utilized apps among participants. Jackd was the most popular and most utilized app among participants; only one participant did not currently have Jackd downloaded on his phone. Participants described Jackd as a "poppin'" (or popular) "hook-up app", with adequate usability and a high successful date and hook-up potential. These criteria determined not only which apps participants used but also how they used the different apps (e.g. have sex).

Table 3. Participant Dating Phone Apps

Dating Phone Application	Number of Participants using this App
Jackd	19
Adam 4 Adam (A4A)	6
Grindr	6
Scout	1
Growlr	2
Scruff	1
Hornet	1
Tag	1
Badu	1
Plenty of Fish	1
Facebook App*	2

*Although Facebook is not widely considered a dating tool, some participants described experiences using the phone app as a method to meet young gay men.

Use of the apps. As stated previously, participants described differences between the different apps in regards to the criteria. The differences also indicated different uses of the apps and therefore facilitated different behaviors. For example, most participants described most of the apps (e.g. Grindr, Jackd, Adam 4 Adam) as a "hook up apps" or a "sex apps". Many participants thought dating phone apps weren't all necessarily "hook-up apps" but became whatever a user intended to use the app for (i.e. dating, hooking-up, relationships, friends, etc.). Generally, most participants described going through phases with their dating app usage which affected their subsequent expectations, motivations, and behaviors associated with the apps. Figure 2 illustrates these four phases by summarizing participants' motivations and expectations that led to their attitudes about dating phone apps. Participants described an initial phase (Initiation) of being excited about the apps and having expectations of meeting guys, having sex with a few guys, making new friends, and possibly starting a relationship with someone special. However, after a few weeks participants described being in a second phase (Hopeful Hook ups) involving fewer expectations of kindling a friendship with anyone on the apps, engaging in more "hook-ups", and possibly meeting a guy for sex that might lead to another date or a relationship in the future.

> *At first, because there were stages of this. At first, yeah I'm just going to go ahead and say it the best way to get over someone is to go ahead and get under someone else. So I got Jackd originally for sexual purposes. After a few months I realized why I am doing this to myself, I'm over him. I kept it and said ok maybe I can just find somebody to talk to and all this. And a few months after I kept it because I let go of the past and I'm trying to move forward. Now I have it to try to find somebody to know better and possibly start a relationship with. (Jimmy, 24, HIV positive)*

During the third phase (App Addiction), in between having the apps for a few weeks to a few months, participants described feeling obsessed with and addicted to using the apps to find men. Participants described being on the apps for several hours during the day, chatting with multiple

guys, and frequently meeting and having sex during the week. Participants seemed to be ashamed of this phase as they discussed engaging in random hook-ups and other risky sex behaviors (i.e. having sex without condoms and not knowing the HIV status of their partners). They described repeated deleting the apps and re-downloading them while trying to get over their bad habit and trying to wean themselves from using dating apps so frequently.

> *I re-downloaded them… And I used them all the time. Yeah and it kind of got really bad where I was like using them. I was on them every single day; [I was] always on them chatting with people. I'm curtailing myself now but there was a point like in the summer when I was trying to hook up with someone and I would just stay on the phone for like 5, 6 hours, all day long trying to talk to people. It was really bad. (Pablo, 24, HIV negative)*

The final phase (Fatigue and Indifference) was described as using the dating apps for entertainment, casual sex, and occasionally for meeting new and interesting people. In the final phase of using dating phone apps, participants describe rarely using the apps to meet anyone and don't expect to find any friends or relationships on the apps. Participants in the final phase do occasionally use the apps for casual sex; however, they don't take any of their sexual encounters "seriously", they expect nothing to come of them.

> *I don't want to say it's not appealing because otherwise I wouldn't have it on here; but it's not really something I put faith into as I used to, being younger or being exposed to it from the beginning. (Remy, 24, HIV negative)*

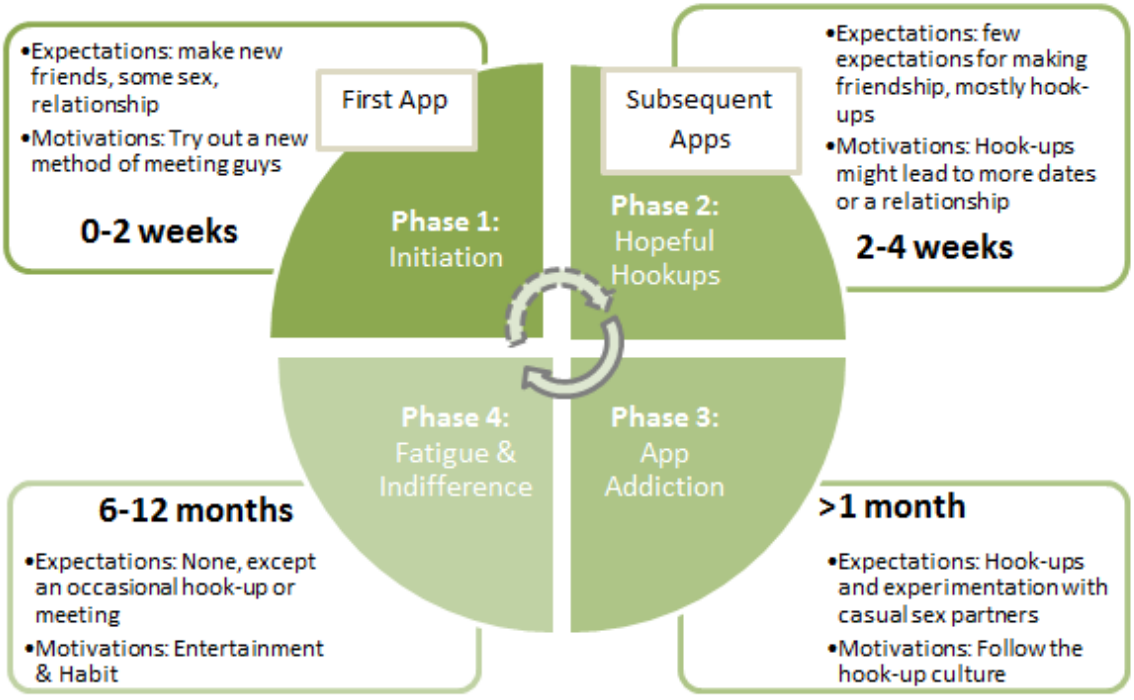
At the time of the interview, most HIV negative participants seemed to be in the third phase while most HIV positive participants described experiences indicative of phase four. Only a few HIV negative participants seemed to be transitioning from the first to second phase, while many many HIV positive participants cited their HIV diagnosis as a catalyst quickly moving them from the second and third phases to the fourth.

> *Frank: My expectations was to see what they were about because everyone else was on them. So I guess my intentions were to see who's, like cuz the guys I was talking to, were like oh yeah there's some really cool looking dudes on their and I looked at them I guess my expectations wasn't to say sex or I guess since I was in my own apartment I guess I*

was kind of a hoe for my first apartment. I guess to a certain extent it was both like sex and just to see who was on there but the sex part came late. The initial sign up was like ok this is a cool site let's see who's on here what type of people are on here so yeah.
Interviewer: Have your expectations changed?
Frank: Of course
Interviewer: Why?
Frank: Well, first, me, just being positive made me look at things like completely different in life… It makes [you] get to know a person. So I don't just jump into bed anymore. [I] can't be…free. (Frank, 21, HIV positive)

These phases seemed to be different for each app; so while a participant might describe his experience using Jackd as a phase 3, he might have recently downloaded Growlr and be in phase 2. Still, it seems once phase one has been surpassed using one dating app, participants never seem to have quite the same initial expectations about any subsequent dating phone app.

Figure 2. Dating Phone App Use Phases



Disclosure of information. When asked to show their dating phone app profiles, participants explained why they decided to disclose certain personal information in their profile.

All participants expressed the importance of confidentiality and what they considered private information when using the apps. Participants believed that protecting their identity and privacy was important when using phone apps so they took precautions, such as using a pseudonym instead of their real name or using body pictures as their profile pictures so they couldn't be identified.

> *You never really know what people's true intentions are so you don't want to get too personal and then you find out that what they say… and what they're doing is something totally different. (Robert, 24, HIV negative)*

Most participants expressed concerns about others recognizing them by their profile or connecting their dating app identity with their identity on their social media. Being recognized or identified outside of the app was a serious concern for most HIV positive participants because they feared "Black gay community"that others would find out about their HIV status and spread rumors about them. HIV negative participants were concerned because they feared their friends and enemies in the ""Black gay community"" would find out that they used dating phone apps and spread rumors about them being promiscuous. Participants agreed that while using dating phone apps is common and popular among young men in the "Black gay community", it's also a private activity. Friends typically don't share with others that they have certain apps, their profile information, or what they're doing with men they meet on the apps. They believe that since the apps are typically used for sex, and sex is a private, their dating phone app profiles are deemed private information as well.

The types of information provided on dating apps included the following: age, weight, race, and height (referred to as stats by participants); a short bio, interests (movies, books, etc.); what you're looking for; HIV status; condom use preferences; and sex position preferences (bottoms,

tops, versatile bottom, etc.). Participant information disclosure varied by app profile; while some participants displayed information related to their sexual interests (i.e. sex position, HIV test date, condom use preferences; HIV status) on apps they use for hooking up and having sex, other participants displayed their basic stats on apps they use to meet new people and make friends. Many participants, especially HIV positive participants, were sensitive about openly sharing sex-related information on their profile for the public to see. Other than for privacy, participants said they didn't post sex-related information because the apps didn't have a designated or specified place for it. Participants suggested that if the information was important for people to know, the creator of the app would have designed their app profile template to include the space for it.

> *I think of it as the person that created the app decided what was a necessity, so, you know, for that particular interaction. That's how I look at it. I don't look at it as my own personal, what I want you to know, it's what the apps deemed necessary for you to know. (Martin, 24, HIV positive)*

Still, participants said they did see other people sometimes display sex-related information (such as HIV status or condom use preferences) regardless of whether the app had a designated field for the information. A more in-depth summary and analysis of protective sex behaviors and profile disclosure of sex-related information is discussed in the Protective Sex Behaviors section. All participants agreed that the information displayed on the apps was up to the individual to share and thought the information would be shared later through messaging, texting, or conversing over the phone if the information was not displayed on the profile. The presence of sex-related information on a user's profile was deemed less important in comparison to the presence of the user's personal stats.

> *Well they call those stats. Just so the person talking to you knows or has an idea of what your build is because image is just like so important in the gay community, I don't know I think its straight or gay everyone wants to know what your body looks like. I think everybody just wants to know that. Normally if you don't have it listed they're going to*

ask that anyway. So I feel like, save that part of the conversation, you can just look at the profile to see. (Timothy, 24, HIV negative)

Participants claimed to be wary of all information posted on profiles because they believed all dating phone app users lie about the information; however, they trusted a user's personal stats more than sex-related information displayed on profiles because they were able to cross-reference stats against a profile picture. Even so, all participants believed that dating phone app users often lie about their personal stats and post either old photos of themselves or photos of others to misrepresent themselves as someone or something desirable by other dating phone app users. All participants talked about experiences of being "catfished", or being tricked into meeting someone from a dating phone app that completely misrepresented facets of his physical appearance, personality, age, etc. These "catfish" experiences are important factors in how participants used the phone apps to communicate with, meet, date, and hook-up with men and ultimately are another driving factor in moving participants through the four phases depicted in Figure 2.

Communicating, dating, and hooking-up. Participants were asked to describe their experiences using the apps to communicate with guys they were interested in as well as their typical dating rituals when using the apps. All participants talked about wanting to communicate with guys before meeting them in person; length of time (hours to months) and the method of communication (i.e. text, messaging, other messaging apps, telephone, video chat) varied by participant. HIV positive participants generally required a longer communication period with guys in comparison to HIV negative participants. While there was a progression between methods of communication for some participants (from messaging to texting to talking on the telephone) other participants preferred using one method or using multiple methods at one time to communicate. During this communication period, participants said they would talk about basic

commonalities and differences as well as disclosing sex-related information. Some participants still waited to disclose this sex-related information until they met other users in person. While most participants said they were comfortable meeting other users at either their homes or the users' homes a few said they preferred meeting them in public areas. After meeting users in person, participants used these opportunities to gauge if they would have sex based on attractiveness, comparing their perceptions online to in-person, conversation, and "vibe".

> *Interviewer: How do you decide whether or not to have sex with these guys?*
> *Dominique: The final say-so comes down to the face to face interaction. How turned on I am, how horny I am, if that clear understanding of what you and I want is there, the attraction to the other person, those play a factor but that doesn't happen until you're standing in my face. Because you can say anything, but until you're standing in my face that seals the deal.*
> *Interviewer: When you meet the guys that you want to, when y'all have like an agreement to have sex, and like what, at that point what made you decide to have sex?*
> *Dominique: He was what he said he was. Just the confirmation of like this is what we talked about. (Tristan, 24, HIV negative)*

Some participants discussed sex before meeting guys if that's all they wanted from the encounter and other participants discussed sex regardless of their actual intentions of having sex with these users. Participants that discussed having sex beforehand said they preferred doing it that way to make sure they established a mutual understanding of what to expect from their first in-person encounter. Other participants said they needed to have the in-person meeting before deciding if they wanted to discuss and have sex because they didn't want to give users an expectation of certain-sex. While many participants did report engaging in sex on their first in-person encounters, some participants preferred waiting until having a few more dates before engaging in sex. There were not many differences in decision making concerning whether to have sex or not between HIV positive or negative participants. However, participants in different dating phone app use phases reported responding differently about sex decisions. Participants in the first three phases seemed to engage in casual sex on the first in-person meeting more frequently than

participants in phase three. Decision making related to protective sex behaviors (i.e. condom use, HIV status disclosure, and HIV testing) is discussed in the Protective Sex Behaviors Section of the results section.

Dating phone app experiences in the IBM context. The following section will summarize participants' dating experiences using dating phone apps within the context of the integrated behavioral model. Participants' attitudes, perceived norms, personal agency, and overall intention when using dating phone apps are described in the following section. Figure 3 also summarizes this information.

Attitudes. Participants believe that most dating phone apps are promoted as sex apps or hook up apps and are therefore only mostly effective at facilitating casual sex between users. They believe that because dating phone apps aren't designed to facilitate relationships they believe users shouldn't expect anything but casual sex as a primary outcome of using the apps. HIV positive and HIV negative participants generally shared the similar attitudes about using dating phone apps to find partners.

Perceived norms. All participants believe that most people in the gay community use dating phone apps; they also believe participants that all Black MSM use dating phone apps. Participants believe that dating phone apps are especially popular among YBMSM and that their YBMSM peers use dating phone apps to have casual sex.

> *Jackd personally, I think every… I don't think any gay male in Atlanta cannot say they don't have this app. If they do have the app, they kind of are secretive about it they don't want anybody to know because that particular app it's not the best with trying to meet people for like just having conversations and building a friendship thing, just having relationships out of the sexual nature. This is just pretty much a sex app. (Kevin, 21, HIV positive)*

They believe that casual sex is common among the "Black gay community" and participants believe the high value placed on casual sex encounters explains why dating phone apps are popular among and frequently used among this population.

> *These gay people will have sex with anybody and I know that because everywhere I take some of my friends, they know somebody and it's either because they've had sex with them or they were in a gay family (Joseph, 23, HIV negative)*

Some participants report unconscious feelings of being pressured into the hook-up culture promoted on dating phone apps.

> *I just got into it that everyone just wanted to have sex. So I guess just went with the flow. (Joseph, 23, HIV negative)*

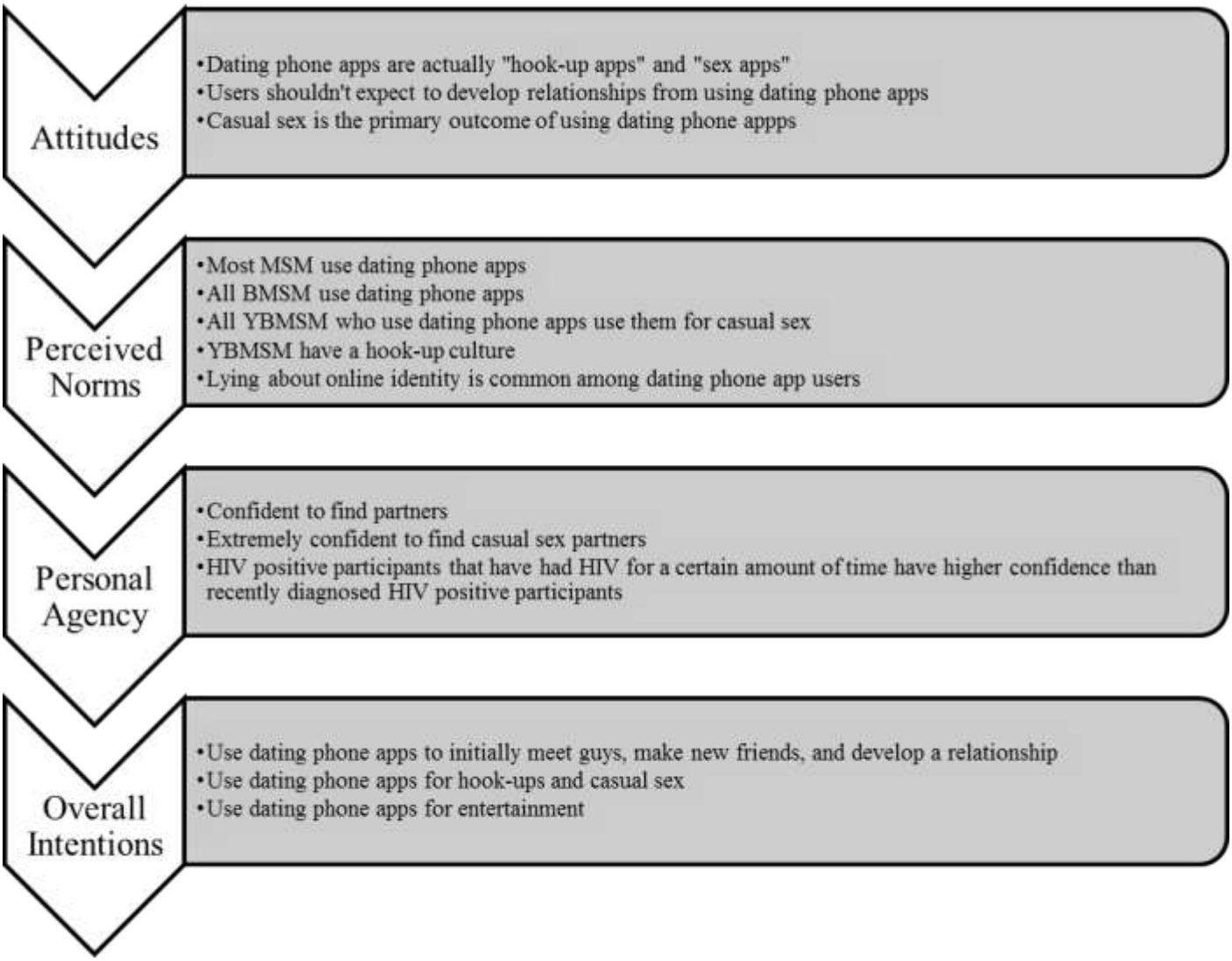
Participants also believe that dating phone app users constantly lie about their identity on the apps and suggest that low self- confidence among BMSM and the high standards of attractiveness and sex appeal within the gay Black community influence people to lie and distrust others on these apps. There were no drastically different perceived norms described between HIV positive and negative participants.

Personal agency. Most participants feel confident and capable to find casual partners on dating phone apps. All participants reported having high perceived control over finding casual sex partners using dating phone apps because of the hook-up culture that facilitates such behavior and normative behavioral expectations with regard to casual sex. HIV positive participants express lower confidence levels about finding a partner that will be accepting of their HIV status on the dating phone apps; however, the HIV positive participants that have had HIV longer seem to report higher levels of confidence.

Overall intention. Regardless of HIV status, all participants have similar intentions when using dating phone apps for the first time. As participants progress through the Four Phases of

Using Dating Phone Apps participants overall intention changes from genuinely wanting to meet men, make friends, and develop relationships to expecting to only use the apps either for entertainment or casual sex, hook-ups. HIV positive participants tend to reach phase four (Fatigue and Indifference) of the cycle faster than HIV negative participants (Figure 2).

Figure 3. Summary of Dating Phone App Experiences in the IBM Context



Protective Sex Behaviors

Participants were asked to describe their protective sex behaviors and the decision making factors related to engaging in protective sex behaviors. As stated earlier, within the context of this study, protective sex behaviors included HIV disclosure, condom use, and HIV testing. In the following section, participant responses are described within the context of IBM constructs: attitudes; perceived norms; personal agency; overall intention; and knowledge & skills, environment constraints, habits, salience behavior. The last section of the Protective Sex Behaviors section summarizes participants' opinions about how dating phone apps affective condom use, HIV disclosure, and HIV testing.

HIV disclosure. Figure 4 synthesizes participants' opinions about HIV disclosure within the context of IBM.

Attitudes. All participants believed that disclosing one's HIV status was important. Generally, HIV positive and negative participants had differing opinions about how HIV status should be disclosed. While most HIV positive participants believed HIV that HIV status should be disclosed with individuals they intend to have sex with, most HIV negative participants believed that HIV status should be openly disclosed upfront. Many HIV negative participants felt that HIV positive dating phone app users should display their HIV status on their profiles. Conversely, some HIV negative participants recognized the potential challenges HIV positive individuals might face disclosing their status on their profile. While HIV negative participants, as previously stated, expressed concerns about disclosing certain personal information on their dating app profiles, some believed HIV status was an exception to these issues of privacy and confidentiality; some HIV negative participants viewed dating phone apps as an open opportunity to disclose HIV status safely.

> *I think that it opens up a door especially for the people on Jackd to admit it to themselves and prevent it to others. Because there are some people that don't put their status up but you know for Jackd I think it more so it just opens that window because my friend, who just contracted the virus he went through a phase where he said it was a lot to say I'm HIV positive because he was you know he was a random user so he was a random face on the app but now there's this new part of your profile. (Tristan, 24, HIV negative)*

The HIV negative participants who empathize with HIV positive users who choose not to display their HIV status on their profiles explained that they didn't care how HIV positive individual disclosed their status as long as this disclosure occurred at some time before a sexual relationship developed. Most HIV negative participants did not display their HIV negative statuses on their dating app profiles; they explained that users who post their HIV negative status in their profiles could not be trusted because most people lie and misrepresent themselves on dating phone apps.

> *I mean it really just goes with that person's comfort ability level and just about if they respect themselves. Because I find that they don't. People say all the time, HIV negative, disease free, so you should be too. I have numerous friends who come to me crying [because they contracted HIV from someone they had casual sex]…I say who is it, they show me their profile and I said… you believed [they were] disease free and you went and had sex with them and you can't believe that… (Miguel, 18, HIV negative)*

Moreover, HIV positive participants insisted that dating app profiles were inappropriate settings for disclosure of personal and sensitive information, such as HIV status.

> *I mean I feel good about them [people that post their HIV status and test date]. They're extremely comfortable with their status. I'm not as comfortable with my status like that so I'm not going to say hey I'm HIV positive. I just feel like that's not the right time, not the right place. (Lewis, 23, HIV positive)*

> *Nobody wants to broadcast anything; so once you're in a private conversation with somebody then I can understand. Because that's like me, because I don't have my status up there. But I'm not going to broadcast just for anybody, if I'm not even going to talk to you, let alone meet you, and then, even further, have sex with you… no. But if we're having a private conversation and that type of stuff comes up then I don't mind. (Malcom, 24, HIV positive)*

Most HIV positive participants said that while they didn't feel negatively towards HIV positive men that did post their HIV statuses on their profiles they thought that doing so was "bold" and

unwise. They believed that disclosing such personal information that is also stigmatized leads to gossip, an increased risk of being targeted, and ruined reputations in the community.

> *If you actually put your status up there, some people are not going to respond to you no matter how cute you are; no matter if you have the fattest ass in the world and the biggest dick in the world. If you decide to not put it out there at first you can actually see the people that try to get to know you before anything else happens. And when you tell them you're HIV positive they actually have a tendency to run away from it because they don't understand it, they don't do research, they don't look at anything. (Jimmy, 24, HIV positive)*

> *You still have people who are still terrified because of how this particular city is. I think it's just the fear… What would a person think of you? What would a person do if they had information about you, especially if somebody, who has already met you and then they see you online, and then they see you as positive and they didn't know you was positive? Some of them, like I said, go run their mouth and go tell other people. So… basically you're damned if you do; you're damned if you don't. It's kind of sucky. That's why if you're not going to say anything in your profile at least try to say something in your conversations or something like that. (Kevin, 21, HIV positive)*

Additionally, both participant groups said that a person's HIV positive status or negative status didn't affect their interaction with people on the app. While some HIV negative participants talked about avoiding HIV positive dating phone app users in the past, they had more recently become educated on the issue they felt more prepared to handle a relationship (platonic and sexual) with an HIV positive man. Only a few HIV negative participants said they were still uncomfortable having anything more than a platonic relationship with HIV positive dating phone app users.

> *Tristan: Even with me knowing there are ways around…to be in a relationship [with someone] whose HIV positive, that's not a risk I'm willing to take. Not knowingly. That affects it whole heartedly.*
> *Interviewer: Tell me about how a person's HIV status affects your interaction with the app.*
> *Tristan: it makes me very, very hesitant to take it beyond the app. I'm sorry. (Tristan, 24, HIV positive)*

HIV positive participants, however, felt that HIV negative guys discriminated against them on apps; once they disclosed their status via app messaging, for example, HIV negative users often became disinterested. HIV positive participants also talked about positive experiences they had with disclosing their status on the apps. Many HIV positive participants said that in a few instances, once they shared their positive status with a guy on an app, the other user would also reveal that he too was positive. Still, not all experiences between HIV positive dating phone app users have been good ones; a few HIV positive participants described experiences where other HIV positive users shamed them for not disclosing their HIV status on their profiles.

> *They want you to be out too, I know people who, if they're positive, and you're positive they want your profile to say positive. You can't just have it and tell them that you're positive too or they want you to say positive all over the screen or something like that. And if you don't say positive then they won't talk to you. (Frank, 24, HIV positive)*

Both HIV negative and positive participants agreed that conversations about HIV status are necessary and should happen if not displayed on the profile, then through texting, talking over the phone, or in-person before engaging in sexual activity. Although the importance of comfort level was stressed more by HIV positive participants, participants from both groups stated that it was important to establish a high level of comfort and trust with an individual before HIV status disclosure should take place.

Perceived norms. Many participants stated that HIV disclosure was generally uncommon among BMSM and that even talking about HIV in the general "Black gay community" was stigmatized and unwelcome. Participants explained that the lack of knowledge and an abundance of fear surrounding the issue of HIV and HIV disclosure were leading explanations for why HIV disclosure was so uncommon in their community.

> *I think that's a personal thing, I think once you and a person decide you're going to have sex then you have that conversation. I don't think that's something that you just post out…*

> *I think that's really dangerous to expose people to things they're not educated about… I think it's better that you tell them one on one. I think a lot of people in Atlanta I think they have what I call stigma education when it comes to their parents who have [been] never educated about it they just hear it through the grapevine you know how black folks do and they'll pass their knowledge on to their grandchildren or their children and it will be false. I've heard people say that you can't drink after people with HIV. I've heard all types of ignorance. So you know you have to be really careful. And it's really sad…about the south. I just don't understand what it is. Why don't people want to be officially educated on things? (Martin, 24, HIV positive)*

Thus, HIV disclosure on dating phone apps is not expected, especially via profile. Some participants believed that YBMSM don't even care about HIV status or know their own status because of the pervasiveness of fear and HIV stigma. Other participants seem to believe that YBMSM know that they are at risk for HIV but continue to engage in risky behavior and refuse to talk about HIV status with partners because they think that HIV is inevitable. These participants described a belief that most people in the "Black gay community" were already infected with HIV, referencing their friends as examples.

Personal agency. Most participants said they felt confident and comfortable disclosing their HIV status with men before engaging in sex, although most participants did not disclose their status in their profile. Most participants claimed to be capable and comfortable talking about their HIV status or asking about the HIV status of their partner. However, some participants described multiple experiences where they assumed the status of their partners using perceived tell-tale signs of disease, where they didn't feel comfortable asking about their partner's status, and where they relied on the sex partner to initiate the conversation.

> *I don't talk about status with everybody that I talk with. There's even sometime when we have sex and we haven't even, we have raw sex and we haven't even talked about it and sometimes that kind of scares me because that kind of scares me when I go and get tested because I realize there's some people that I had, that I had sex with that I didn't even talk to about HIV. (Joseph, 23, HIV negative)*

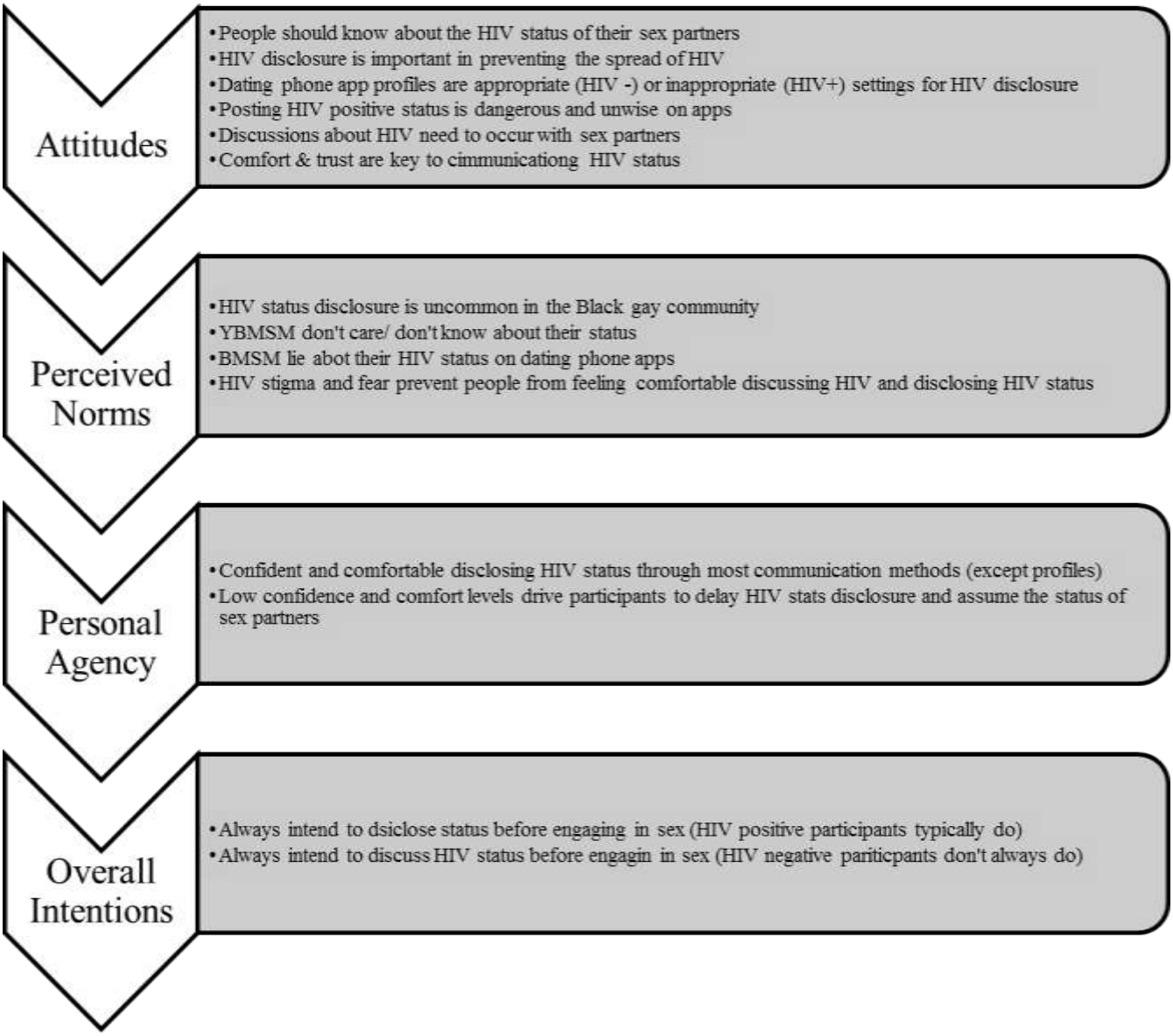
HIV positive participants' comfort and confidence levels disclosing their status and talking about HIV with potential sex partners were dependent on their comfort level with their HIV status. Participants who had become comfortable with their HIV status were now used to talking about their HIV status and had developed a routine or consistent method to talk about HIV status with potential sex partners, while more recently diagnosed HIV positive participants felt less confident talking about their HIV. HIV positive participants with lower confidence levels said they sometimes waited for their partner to ask or disclose their HIV status before disclosing status.

Additionally, HIV positive participants reported legal obligations and personal responsibilities that influenced their personal agency in disclosing HIV status.

> *Interviewer: What motivates you to use condoms regularly?*
> *Malcom: I don't have time for nothing else. I don't have time to not do it, for it not to be at the front of my mind. I don't have time because I'm not going to be in the front of nobody's newspaper or jail or courthouse. Have my name slandered as well or have on my conscience that somebody else has gotten something from me. I can't do it. (Malcom, 24, HIV positive)*

Overall intention. Most participants said that they always intend to disclose their HIV status before having sex. HIV positive participants expressed their strong intentions and described sexual experiences that always involved HIV disclosure prior to sex. HIV negative participants said although they always intend to talk about HIV status with their sex partners they meet using dating phone apps, they described multiple sexual encounters that didn't involve HIV disclosure.

Figure 4. HIV Disclosure within the IBM Context



Condom use. Figure 5 synthesizes participants' opinions about condom use within the context of IBM.

Attitudes. All participants expressed the importance of condoms in preventing the transmission of HIV and other STDs. Only one participant displayed his condom use preferences on his dating app profile; he stated that he participated in "safe sex" only. The other participants, HIV positive and negative, did not post their condom use preferences on their profiles because

they preferred to have conversations before sex about condom use. Although participants did not have "anything goes" or "raw sex only" posted on their profile pages some participants said they were still open to unprotected anal sex and did not want to deter other users who might prefer unprotected anal sex by displaying "safe sex only" on their profiles. Mostly HIV negative participants had this attitude.

> *Anything goes, whether its safe sex, unprotected sex, anything, you can do it's crazy. People have anything goes under their profile and it's just like wow like you know anything? You're willing to do anything? And then you got people who got safe sex, and then the contradicting thing for me is that you will have safe sex on your profile but if you come across someone who is appealing to you, sexy, and is drawn to you you're willing to have unprotected sex. (Remy, 24, HIV negative)*

HIV positive participants stressed that condoms were non-negotiable, and some described a belief that posting their "safe sex only" preference on their profile was unnecessary because they believed posting their preference would welcome users who would try to negotiate condom use.

Perceived norms. Participants believed that young MSM generally don't use condoms regularly. Most participants also believed that YBMSM, especially don't use condoms and don't care about using condoms because of their immaturity and their strong ties to the "hook-up culture" in the "Black gay community". Furthermore, participants said that MSM who use dating phone apps don't care about condoms either and don't think about using condoms when searching for men to hook-up and have casual sex with.

> *I don't think that they actually care [about using condoms] because the ones that use [apps] the majority are so young and they don't really see there's stuff out there. And they see that there's stuff out there. But minus the stuff you can get cured for, and really see HIV. (Frank, 21, HIV positive)*

> *I honestly think guys are less likely to use condoms on apps. And I say that because I feel like sometimes it doesn't pop up at all in conversations. I say that because there a lot of guys who I've talked to on apps and hook-up [with] and they didn't even ask me about my status. Same way I didn't ask them. So it lets me know it's not me that's not just me*

> *not asking. A lot of guys just hook-up without asking. And then a lot of guys just hook up without using a condom, they just have sex. (Timothy, 24, HIV negative)*

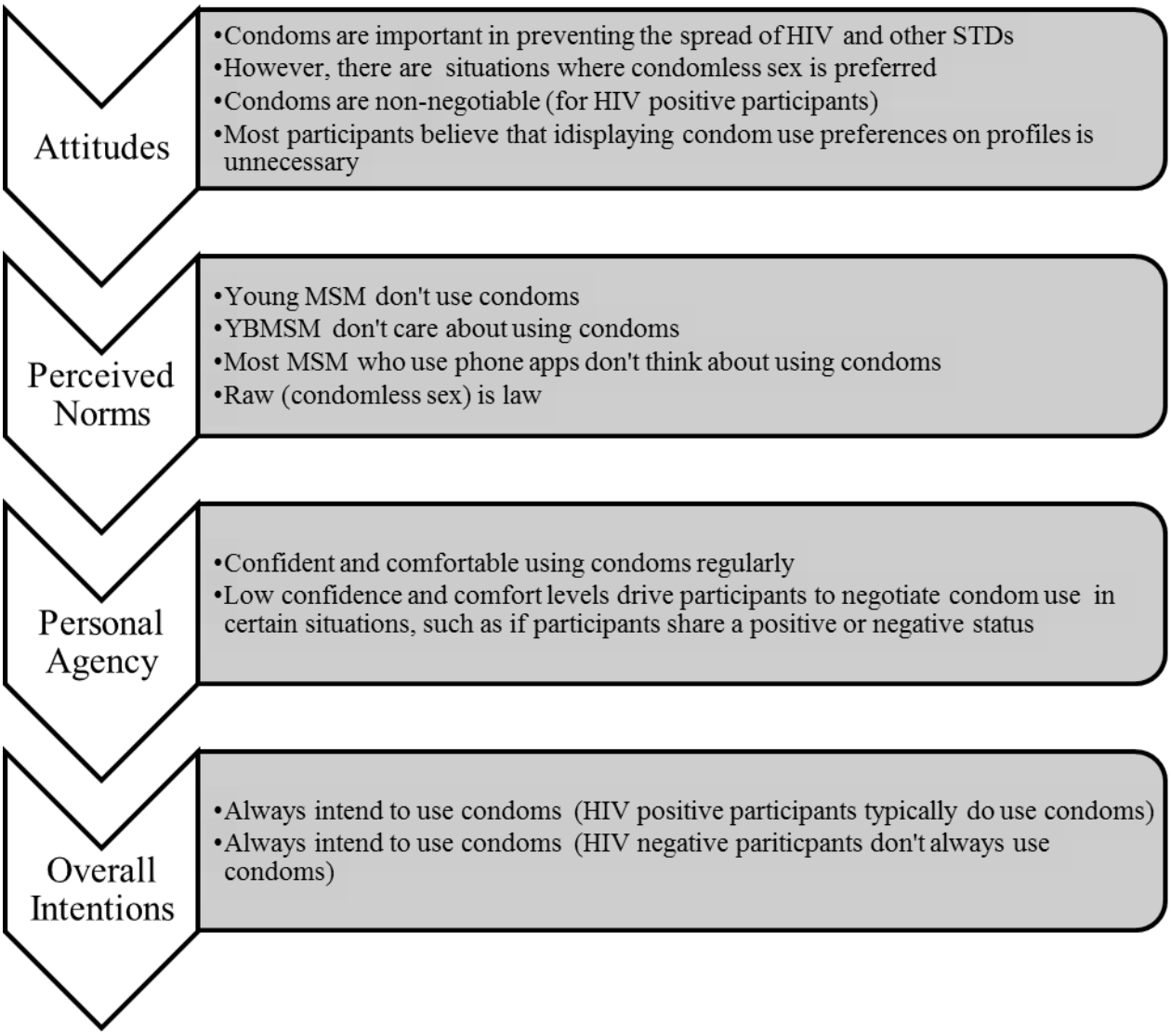
> *Abraham: I don't know why they won't, they're not comfortable discussing that or whatever. I notice, and I hate to put, I hate to categorize, I really do but I notice it a lot more with African American and Latino men, they will not, it's not a conversation they necessarily wish to have. Like I said I love my black men, all shades all day.*
> *Interviewer: Why do you think that is about black men and Latino men?*
> *Abraham: I don't know. I don't know if it's just the fact that you know most of us, we have this decision not to be a product of our environment… (Abraham, 24, HIV positive)*

Some participants reported instances of their friends and peers bargaining raw hook-up sex if their partners were extremely attractive or if they agreed to pay their bills. Both groups believed that people, regardless of HIV status, don't use condoms due to the large population of people who post that they're looking for unprotected sex only. In contrast with their descriptions of their own behavior, participants agree that "raw is law" among most dating phone app users, meaning that condomless or unprotected anal intercourse is the normative standard for MSM who use dating phone apps.

Personal Agency. Most participants felt confident about using condoms regularly with sex partners met from dating phone apps. However, some participants expressed feelings of apprehension about condom use because of "loss of feeling" and a preference for having unprotected sex. Most participants said they preferred unprotected sex over sex with condoms, however, most participants, reported that they still almost always used condoms because they either didn't want to transmit or become infected with HIV or other STDs. Some HIV positive participants expressed lower levels of confidence to use condoms if their partner was also HIV positive and preferred unprotected sex, or if their partner insisted on still having unprotected sex even after HIV disclosure.

Overall Intention. All participants said that they always intend to use condoms with men they meet using dating phone apps. However, some participants reported not always following through with their intentions because of getting "caught in the moment" or making a compromise with partners of either a known or unknown status. HIV positive participants seemed to have stronger intentions and a higher likelihood of following through on their intentions of using condoms because of their desire to take care of their bodies and prevent the spread of HIV to other individuals.

Figure 5. Condom Use within the IBM Context



HIV Testing. Figure 6 summarizes participants' opinions about condom use within the context of IBM.

Attitudes. All participants agree that regular HIV testing is important in preventing HIV transmission. However, participants have differing opinions about posting HIV test dates on dating app profiles. While some participants believed that posting one's status on his app profile was beneficial in raising awareness about getting tested, other participants stated that posting HIV test dates was silly and ineffective. A few HIV negative participants actually posted their HIV test dates regularly on either their dating phone app profiles or their other social media tools (e.g. Instagram).

> *I think that is so silly, HIV test date. I don't think that. I think that's something that you should just tell them, you know. I don't think something like that. I'm not saying you shouldn't be proud of it but I don't think it's necessary that you have to post it. (Martin, 24, HIV positive)*

Perceived norms. Most participants believe that other YBMSM do not get tested or know their HIV status; they believe that the "hook-up" culture and their immaturity influences YBMSM to follow these social norms within the "Black gay community". Participants who expressed negative opinions of displaying HIV test dates on app profiles supported this view by stating it was a bad idea because of how frequently dating phone app users lie about their profile information to seduce other users.

> *You should want to know your own status. Because if you're on that [meaning dating phone apps] then you meet people that lie about their status. Or you meet ones that are positive. (Quentin, 24, HIV positive)*

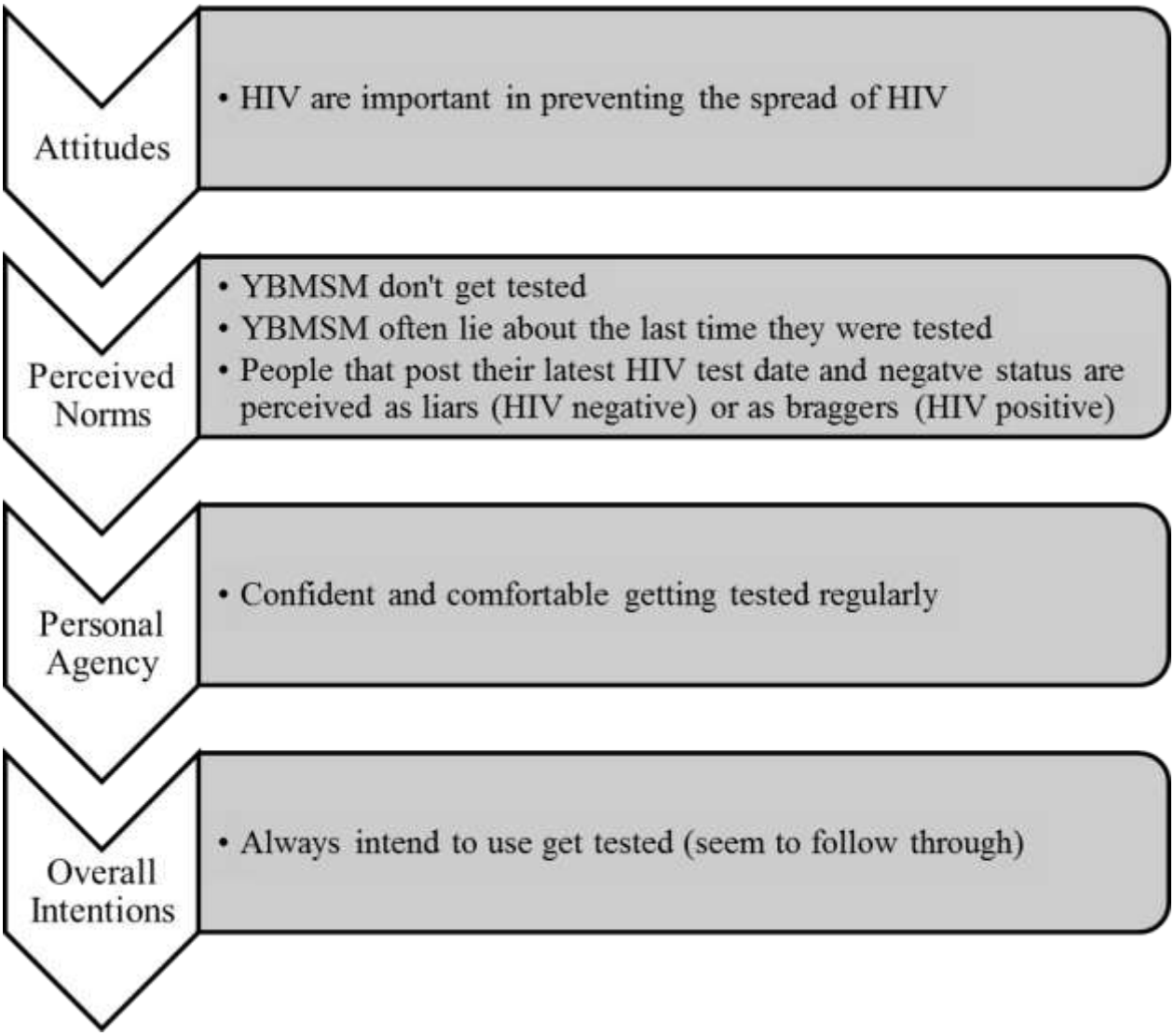
Some HIV positive participants believed that HIV negative users who post their test dates on their profiles are only bragging about being healthy and not promoting HIV testing at all.

Personal Agency. HIV negative participants reported feeling confident and comfortable with getting tested regularly. They reported no barriers or challenges that affect their self-

efficacy or perceived control over getting tested every 3-6months. Many of the participants stated they felt confident getting tested even more often than their physician suggests.

Overall Intention. HIV negative participants said that they always intend to get tested regularly. Participants described regular testing behaviors.

Figure 6. HIV Testing within the IBM Context



Knowledge & skills, environmental constraints, habits, and salience related to protective sex behaviors. All HIV positive and some HIV negative participants talked about

gaining HIV knowledge and skills from peers, peer education programs, community education forums, and clinic visits that influenced their desire disclose their HIV status and use condoms with men they meet on dating phone apps. These same factors influenced HIV negative participants to regularly get tested for HIV. However, many participants expressed that despite their knowledge of the HIV epidemic and their risk, they continue to compromise with some sex partners and act against their knowledge.

> *I have a close friend who works for… an outreach program for African Americans…The monthly positive that come[s] back is continuing to grow. So even though it's [HIV knowledge] out there somebody somewhere is not paying attention or somebody somewhere is having that Tristan and Michael moment with the wrong person. Michael could very well be my wrong person. But even with the knowledge that I have, I'm still not using a condom. (Tristan, 24, HIV negative)*

Participants did not discuss any common environmental constraints or habits that influenced HIV disclosure and discussion. However, participants who reported more casual sex through the phone apps actually reported more frequent HIV testing. While both groups of participants understood the value of HIV disclosure and condom use, HIV positive participants described these protective sex behaviors as more salient to them than the HIV negative participants.

Dating phone apps' effect on protective sex behaviors. Most participants believed that dating phone apps generally had no effect on users' protective sex behaviors. Participants from both groups agreed that dating phone apps only promoted "hook-ups" and casual sex. Most participants believed that it was not the purpose or the responsibility of the app, but the individual, to educate themselves and become motivated to regularly practice sex behaviors. Other participants believed that the apps should promote "safe sex".

> *Interviewer: How do you think using these apps might affect whether or not people use condoms?*

> *Quentin: It's a hook up site so a lot of people just hook up, spur of the moment. And don't think to put a condom on, might not be thinking of the future, just ready for the moment. (Quentin, 23, HIV negative)*

> *That's on the person; I don't think the app has anything to do with that, but I do think that they should promote safe sex. They don't say anything about safe sex. They just say dating app, hook up app. (Lewis, 23, HIV positive)*

Some participants did believe that some dating phone apps promote HIV testing, and might influence people to get tested due to two factors: (1) the hook-up culture of the apps might influence people to reflect on their own sexual behaviors and seek to get tested and (2) the presences of HIV testing advertising by *Ora-Quick* and the Department of Public Health on dating phone apps might serve as reminders for users to get tested.

> *Interviewer: How do the apps influence you to get tested?*
> *Christopher: I guess just to know that you really can't trust anybody, especially from apps anyway. So to know that some people are [positive], but don't have it out there; that encourages me to be mindful and it reminds me you need to go get tested. (Christopher, 23, HIV negative)*

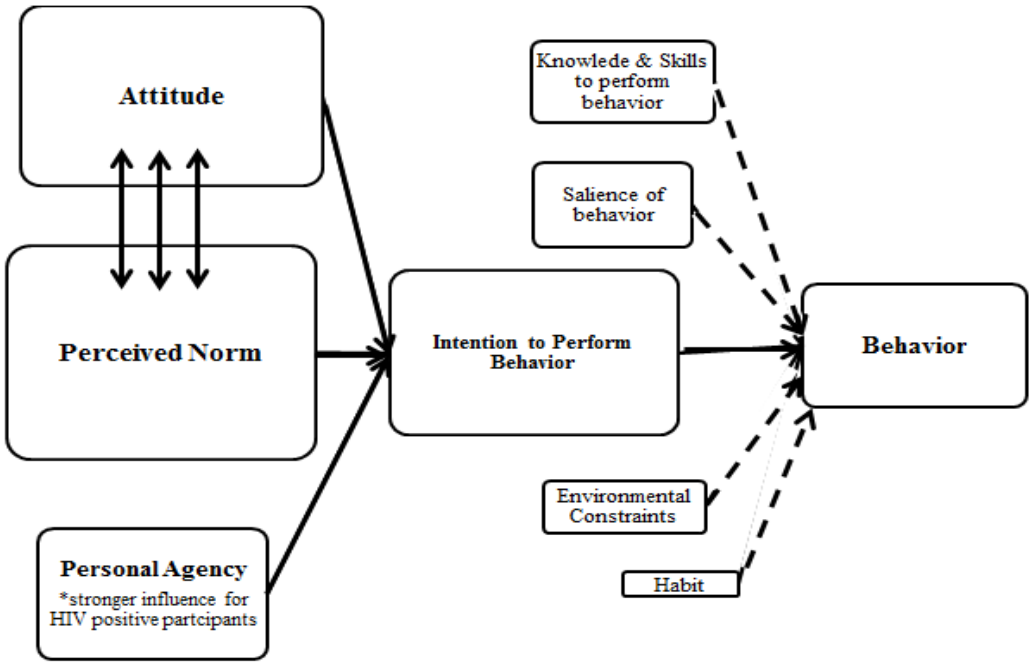
Discussion

The purpose of this study was to explore and understand the experiences of a sample of YBMSM who use dating phone apps within the context of the Integrated Behavior Model (IBM). We found that attitudes, perceived norms, and self-agency were especially important factors in participant decision making about using condoms, disclosing HIV status, and getting tested for HIV.

Integrated Behavioral Model: an appropriate model

These study results demonstrate the suitability of the IBM in contextualizing the dating experiences and sex behaviors of a sample of YBMSM. IBM aptly framed participants' described experiences into indirect (attitudes, perceived norms, and self-agency) and direct factors (intentions, behavior salience, knowledge & skills, environmental constraints, and habits) influencing their likelihood of performing certain protective sex behaviors (i.e. consistently using condoms with all sex partners; disclosing and sharing HIV status with all sex partners; and regularly getting tested for HIV). As expected, indirect and direct factors weighed slightly differently for each participant. However, in general, attitudes and perceived norms primarily influenced one another and ultimately affected most participants' intentions of performing protective sex behaviors. Figure 7 illustrates an altered IBM to reflect the participants' weight of importance and value.

Figure 7. Altered IBM: Participants' Perceptions



In sum, participants' dating phone app experiences and their intentions to perform protective sex behaviors were largely influenced by their perceptions of dating and sex behavior norms within the ""Black gay community"". Participants' attitudes and self-agency in relation to performing these protective sex behaviors also influenced their intentions to perform these protective sex behaviors (i.e. condom use, HIV disclosure/discussion, HIV testing). However, personal agency (primarily confidence level) seemed to influence HIV positive participants' intentions of performing these behaviors slightly more than HIV negative participants. Participants' breadth of knowledge and skills related to HIV and healthy sex behaviors, high salience of these healthy sex behaviors, habit of using dating phone apps to hook-up with men, and lack of environmental constraints inconsistently influenced their reported likelihood of performing protective sex behaviors. Although participants were most likely to discuss intentions (and the indirect factors driving intentions) as influences on protective sex behaviors, the other direct factors should not be discarded as they varied in importance among participants and thus might be more influential

in another population. Therefore, IBM is still an appropriate theoretical model in comparison to less comprehensive intention-driven models, such as the theory of Reasoned Action/ Theory of Planned Behavior (Franssens, Hospers, Kok, 2009; Kok et al., 2007). The following section will further explore the study's results and these theoretical constructs within the context of literature. This section will first address Dating Phone Apps & Dating Experiences and then Protective Sex Behaviors.

Dating Phone Apps & Dating Experiences

Participants largely discussed engaging in casual sex and hook-up culture on dating phone apps. Although they expressed their disapproval of individuals in their community engaging in such behavior, most participants found themselves admitting to similar risky sex behaviors in relating their stories of dating experiences using the phone apps.

Dating phone apps, casual sex, multiple sex partners. Participants described being surrounded by casual sex norms set by their peers and their community, especially within the context of the virtual community on dating phone apps. Community influences and perceived norms of having frequent sex with men met on dating phone apps, and in general, show the importance of perceived norms in relation to establishing attitudes and intentions for an individual's sex behaviors. Several studies have found that social support from partners and community members plays a role in shaping safe sex norms (McKenchnie, M., Bavinton, Zablotska, 2013; Miner et al., 2009; Hart, et al., 2004). Additionally, these social norms have the potential to cross over into virtual communities on dating phone apps and thus influence users' sex behaviors; a research study examining MSM and dating phone app use found that geographically localized norms from within virtual space (i.e. dating phone apps) influence behaviors (Blackwell et al., 2014). Among both HIV positive and HIV negative participants, the

hook-up culture of their physical and virtual (phone app) community seemed to pressure them to engage in the casual sex with multiple partners and to engage in other sex behaviors despite their own positive attitudes towards protective sex behaviors and negative attitudes towards this hook-up culture. Thus, although attitudes do have an effect on YBMSM intentions to not engage in frequent casual sex with multiple partners, their perceived community's lack of support for protective sex behaviors influences them to disregard personal convictions and beliefs.

Protective Sex Behaviors

HIV status disclosure & self-efficacy. Participants discussed in depth their feelings and opinions about general HIV disclosure as well as HIV disclosure on the dating apps. While participants valued discussing HIV and disclosing HIV status with sex partners, they still described experiences of assuming the status of their sex partners and HIV stigma that hindered their self-efficacy to discuss HIV with sex partners. Thus, HIV stigma and social norms of generally not discussing HIV status in the Black community has the potential to make avoidance of discussing HIV status normative. These normative beliefs about HIV disclosure and stigma seem to especially affect HIV positive YBMSM in feeling confident and comfortable disclosing their HIV status. Although these findings are operating within context of dating phone apps, these findings are still consistent with the literature, suggesting that perceived self-efficacy, or personal agency, of HIV positive MSM is associated with openly sharing and discussing HIV status (Sullivan, 2005). HIV stigma has previously been shown to be a significant barrier to HIV disclosure among people living with HIV in general (Stutterheim et al., 2011) and among BMSM specifically(Overstreet, et al., 2012). Additionally, studies investigating HIV disclosure in HIV positive men found that more recently diagnosed MSM adopted a policy of non-disclosure while MSM who were diagnosed a longer time ago consistently practiced HIV

disclosure and used disclosure as a mechanism for coping with the disease (Holt et al., 1998; Simon Rosser et al., 2008; Dowshen et al., 2009). One prior study also shows that perceived community ambivalence towards HIV status disclosure during casual sex especially plays a role in HIV negative MSM's decisions to avoid discussing HIV with sex partners (Sheon & Crosby, 2004).

In regards to online dating and MSM status disclosure behaviors, a prior study found that the most commonly reported strategies in ascertaining HIV status among MSM who use the internet to find partners were checking online profiles, talking before sex, talking after sex, and guessing (Horvath, Nygaard, Rosser, 2010). They also found that guessing the HIV status of sex partners, or seroguessing, was associated with greater unprotected anal sex. Similarly, a qualitative study found that a sample of MSM found the internet a convenient medium to facilitate discussions about HIV status (Grov et al., 2013). This literature supports the results of this study showing how self-efficacy, HIV disclosure, and serosorting play a significant role in the protective sex behavior intentions of a sample of YBMSM.

Condom use norms & serosorting. This study's findings show that while this sample of YBMSM demonstrated high levels of confidence and comfort in addition to positive attitudes towards using condoms with men met on dating apps; there were still challenges to consistently using condoms with all sex partners met on dating phone apps. Peer norms were once again largely influential in participant intentions to use condoms in exceptional situations that proved condom use to be difficult. Beliefs that the BMSM community is indifferent about condom use seemed to encourage unprotected sex when engaging in casual or "in the moment" sex with men from dating apps. Similarly, previous studies show that low peer support of condom use was associated with unprotected anal sex among Black MSM (Carlos et al., 2010; Kelly et al., 2013).

Low social support has been shown to be correlated with low self-efficacy to perform protective sex behaviors , such as consistently using condoms, among MSM who use the internet to find partners (Berg, 2008). In our analysis, HIV positive YBMSM seemed more confident in consistently using condoms and also intended to use condoms more than HIV negative YBMSM. These findings and the literature suggest that self-efficacy and social support of protective sex behaviors have influence in the sex behaviors of YMSM.

Other instances of compromising condom use intentions occurred when YBMSM shared, or assumed that they shared, the same HIV status; both HIV positive and HIV negative talked about not using condoms with sex partners with whom they shared the same serostatus. This is consistent with the literature; studies have found that MSM believe that serosorting and having sex with seroconcordant partners put them at relatively low risk for HIV transmission (Eaten et al., 2009; Zablotska et al., 2008; McFarland et al., 2012). One study found that unprotected anal sex was associated with seroguessing, serosorting based on the assumption of HIV seroconcordance; the likelihood of unprotected anal sex was higher when a partner's status was known and assumed seroconcordant because of seroguessing compared to unknown in both HIV positive and HIV negative MSM (Zablotska et al., 2008). Another study found that serosorting among HIV neagitve MSM and seropositioning (i.e. assuming the receptive position during unprotected anal sex) among HIV positive MSM were more common, more successfully adhered to, and more strongly associated with prior intentions of serosorting than consistent condom use (McFarland et al., 2012).

In light of these results and the supportive literature, the association between serosorting, seroguessing, and unprotected anal sex should be examined through the context of different methods of communication, such as the internet and dating phone apps. Consistent with our

participants' responses about using dating phone apps to communicate about HIV, a study found that compared with partners met in venues, serostatus communication with internet partners was more frequent and partners were more often presumed HIV seroconcordant (Marcus & Schmidt, 2013). While this study's sample of YBMSM weren't especially comfortable displaying their HIV status on their profiles, some did use the apps messaging options to eventually disclose HIV status and discuss condom use preferences. However, many HIV positive participants still preferred to talk about HIV and condom use only once they became more intimate with the other user and were sure they wanted to have sex with him. Thus, communication about HIV and condom use might occur differently among HIV positive and negative YBMSM according to their comfort level and confidence level.

The literature show the commonality of serosorting among HIV positive and negative MSM as a method of sexual risk management; our findings also suggest that seroguessing and consequent unprotected anal sex, among YBMSM who use dating phone apps might be increasing their risk of HIV and STD transmission.

HIV testing. All YBMSM in this sample thought getting tested was both important and necessary to prevent unknowingly spreading HIV. However, only a few participants found value in posting HIV test dates on dating phone app profiles; most participants (HIV positive and negative) had negative reactions to posting HIV test dates on their profile. While few thought posting HIV test dates on profiles might raise awareness, most believed that posting HIV test dates was pointless, as phone app users could not be trusted to provide accurate information. Most participants agreed that their peers did not get tested and that getting regularly tested and knowing one's status was not a social norm in the YBMSM community. Regardless, all HIV negative participants remained adamant about their intentions to be regularly tested. The

literature suggests that low perceived risk, structural barriers, and fear of testing positive were main reasons among MSM for not testing for HIV; fear of testing positive was associated with BMSM (MacKellar et al., 2011). While the dating phone app study's sample of YBMSM cited these factors as possible reasons for their peers for not testing for HIV, they believed their dating phone app use, casual and risky sex behaviors (both occasional and frequent) motivated them to get tested regularly. A qualitative study conducted by Hussen et al. (2013) found that a sample of BMSM could be categorized in four groups based on their testing intentions and behaviors: (1) Maintenance Testers, who tested regularly as part of routine self-care, (2) Risk-Based Testers, whose testing depended on relationship status or sexual behavior; (3) tested infrequently and/or failed to follow up on results. Maintenance Testers were young on average (20-30 years of age). Consistent with Hussen et al.'s (2013) the findings, most of these YBMSM fit into the Maintenance Tester category; Risk-Based Testing was also mentioned by participants in regards to their hook-up sex behaviors when using dating phone apps. Thus, while perceived norms seemed to affect perceived risk and intentions to perform other protective sex behaviors, these YBMSM's intentions to get tested for HIV were largely unaffected by perceived norms.

Limitations

This study has several limitations. One individual conducted, transcribed, and analyzed all 20 interviews. There was some collaboration between study advisors to mitigate some of this bias. One major limitation of this study was social desirability bias; participants may have reported their experiences in order to appeal to the interviewer. Also, while all participants were within the age range of young adults (18-24 years) most of the participants were aged 23 and 24 years. Therefore, the dating experiences and protective sex behaviors of younger BMSM (18-22 years) were not able to be as fully captured. Additionally, although a variety of recruitment methods

were utilized; many participants found out about the study through their community organizations that promote protective sex behaviors and provide sexual health education and services. Thus, participants had a relatively high level of exposure to knowledge and skills related to protective sex behaviors and HIV education, which possibly biased the sample. Additionally, while this study addressed several factors related to protective sex behaviors and dating experiences of YBMSM there were still other methods of sexual risk management that could have been further explored (e.g. seroconcordance). Despite these limitations, this study is an important contribution to the literature exploring YBMSM sex behaviors and risk management methods when using technology and the internet (i.e. dating phone apps) as they relate to the domestic HIV epidemic.

Future Directions & Conclusions

The disproportionate and rising rates of HIV among YBMSM are not a result of any one cause, but of a complex array of interpersonal, situational, and intrapersonal factors. This study's findings suggest that perceived norms, attitudes, and personal agency play an integral role in the intentions of YBMSM to engage in casual sex and perform protective sex behaviors when using dating phone apps. Specifically, perceived lack of support of protective sex behaviors in their community as well as the promotion of casual sex and "hook-up culture" on the apps influenced YBMSM intentions to consistently use condoms, discuss HIV, and disclose HIV status in difficult situations (despite having positive attitudes towards protective sex behaviors). Acquiring other methods of sexual risk management, such as serosorting and engaging in unprotected sex with only seroconcordant partners was also influential in decision making around discussion of HIV status and condom use when using dating phone apps.

Understanding YBMSM's intentions of disclosure, protected sex and HIV testing when using dating phone apps to seek partners is essential to reaching this vulnerable population. Drawing on the theoretical framework presented by the Integrated Behavior Model (IBM) is helpful in determining the ways in which these intentions influence HIV risk behaviors. Now that this study has given context to the sex behaviors and dating experiences of some YBMSM who use dating phone apps, the next steps of this research study would be to conduct both qualitative and quantitative studies. Qualitative studies should further contextualize the social norms of sex and protective sex behaviors when using dating phone apps either through focus group discussions or in-depth interviews with younger BMSM, older BMSM, and BMSM at different lapses of time since their HIV diagnoses. Moreover, future qualitative studies should further explore themes of attraction, masculinity, and sexual position preferences that were raised during this project but went beyond the scope of this analysis. Future quantitative studies should examine the relationship between IBM constructs and social norms around sex culture within the BMSM community, and its potential effect on sex practices on BMSM-tailored dating phone apps. Moreover, serosorting and HIV disclosure should be studied within the context of using dating phone apps to find sex partners. To facilitate the prevention of further HIV transmission for YBMSM, public health practitioners need to implement theory-based interventions that focus on strengthening positive attitudes and navigating negative social norms around HIV disclosure and condom negotiation through dating phone apps. In the future, programs and interventions should educate YBMSM how to consistently and confidently communicate their safe-sex preferences and intentions when engaging in relationships with partners via various media, including dating phone apps. Finally, as suggested by most participants public health professionals should

collaborate with existing dating phone apps to promote protective sex behaviors and change the negative norms and culture about using protection, discussing HIV, and getting tested for HIV.

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Appendix A

Term	Definition
Hook-up	Casual sex encounter
Catfish	A person who creates a fake online identity in order to fraudulently seduce someone
Bottoms	Men who prefer to be sexually penetrated by other men
Tops	Men who prefer to sexually penetrate other men
Verse-	Men who have both penetrative and receptive sex with men
Vibe	Feelings of mutual interest and attraction between to individuals
Raw sex	Condomless or unprotected anal sex
Serosorting	Choosing partners based on similar HIV serostatus
Seroguessing	Assuming the HIV serostatus of one's partner
Seroconcordant	Sex partner with the same HIV serostatus

Appendix B

ELIGIBILITY SCREENING FORM

Date:_____/_____/_____	Screener Initials _____		
1. What is your race? (Check all that apply) † White/Caucasian Black/African American † Caribbean † Hispanic † Other:_____	2. What is your age? _____ **Is the participant between 18-24** **Yes No** 2.a What is your sex? Male	3. What is your HIV status? † Positive † Negative/Don't Know † Never tested	4. Do you use dating phone apps at least once a week? **† Yes † No**
5. Do you speak fluent English **Yes No**			
6. Have you had sex (anal, and/or oral) with a man in the past 12 months? **Yes † No**			
8. Do I have your permission to view your dating app profile during the interview? **Yes No**			

9. Contact information for participant:
10. Interview date/time/place:

Appendix C

EMORY UNIVERSITY, ROLLINS SCHOOL OF PUBLIC HEALTH

Consent Form I
Flesch-Kincaid Reading Score: 7.9

Dating Phone Apps and Relationships

Eric Nehl, PhD
Danielle Gilliard
Sophia Hussen, MD, MPH
Frank Wong, PhD

Introduction

You are being invited to take a quick survey to determine your eligibility for taking part in a research study. This form is designed to tell you everything you need to think about before you decide to consent (agree) to take this survey. It is entirely your choice. Please read this form carefully.

Taking this survey does not mean you must join the research study. If you are eligible and choose to join, you can still change your mind later. You can withdraw from the study (quit) at any time.

You can skip any question(s) that you do not wish to answer. You can print and keep a copy of this consent form. Take your time to think about whether or not you would like to participate. By checking the box below you will not give up any legal rights.

Study Overview

The purpose of this study is to understand the dating and sexual experiences of young Black men who are between the ages of 18 and 24 years, endorse sex with men, and regularly use dating phone apps to seek partners. We plan to recruit 30 males into this study, half (15) HIV positive and the other half (15) with a negative, unknown, or never tested status. This survey will determine if you are eligible to participate in the study. If you are, we will provide contact you to set an interview date.

Procedures

If you agree to take this survey, it will take you about five minutes. You will be asked about your age, race, and sex. We will also ask about your HIV status. We will also ask

about your frequency of dating phone app use, sex experience with men, fluency in English language, and history of mental illness. We will also ask you for your permission to allow the interviewer to view your dating phone app profile during the interview.

After your survey is reviewed, you will be informed whether or not you are eligible. If you are not eligible you can close the window. If you are eligible to join the study, you can provide your contact information. You do not have to provide your contact information. If you do, we will contact you later and give you more information about the study.

Risks

All study activities are private. You can be certain that what you share will be kept confidential.

There is a risk of discomfort due to the nature of the questions. However, you can decide to not answer any question. You can stop participating in the research at any time by closing your internet browser.

If you choose to continue with the research study, we will collect your phone number, email address, and first name. This information will only be viewed by study staff.

Benefits

This study does not benefit you directly. We may learn new things that will help young Black men who have sex with men. This may include services to help same-sex male couples receive treatment if one or both individuals in the couple are living with HIV.

Compensation

You will not receive any compensation for completing this screening survey. However, if you are eligible for the study, you consent to join the study, and you participate in the interview you will receive $25 in the form of a gift card. This is to compensate you for your time and travel.

Grady Health System Disclaimer

We will give you emergency care if you are injured by this research. However, Grady Health System has not set aside funds to pay for this care or to compensate you if a mishap occurs. If you believe you have been injured by this research, you should contact Dr. Sophia Hussen (Phone 404-686-1000). We will give you emergency care if you are injured by this research.

Confidentiality

All research data will be kept in a secure location. If you provide contact information, this will be kept in a password-protected document on a secure computer at the study site or on a secure internet server.

Certain offices and people may look at study records. Government agencies may look at your study records. Emory employees overseeing proper study conduct may look at your study records. These include the Office for Human Research Protections, the Institutional Review Board, and the Office of Research Compliance. We will keep all records private to the extent we are required to do so by law. This is the case even if you admit to illegal activity. We will use a study number instead of your name on study records.

We will do everything we can to keep others from learning about your participation in the research.

Authorization to Use and Disclose Health Information

If you check the box below, you are giving permission to researchers who work on this study to use your identifying health information. This includes all information collected during the research study described here. The information may be used by all investigators involved with the study. People and committees at Emory who oversee study conduct will have access to this information. This is so they can make sure the study is being conducted properly. Emory University is required by the HIPAA Privacy Rule to protect your health information. Some people who receive your health information may not be required by this Rule to protect it. They may share your information with others without your permission, if permitted by laws governing them.

You may change your mind and revoke (take back) this Authorization at any time. However, Emory University may have already acted based on the Authorization. This cannot be undone. To revoke this Authorization, you must write to Dr. Eric Nehl at enehl@emory.edu. If you revoke this Authorization, you may no longer be allowed to participate in this research. Even if you revoke this Authorization, the researchers may still use your health information. They may still disclose your health information. Your health information is being collected into a database. This Authorization will expire at the end of the research study.

Voluntary Participation and Withdrawal from the Study

Your participation is completely voluntary. You have the right to refuse to take this survey. You have the right to refuse to join this study. You can stop at any time after

giving your consent. You can withdraw your consent at any time. You can skip any questions that make you uncomfortable. Your decision to join or not join the study will not affect any other benefits or services available to you.

You do not have to agree to participate in this research. Even if you do, at any time later on you may revoke (take back) your permission. If you want to do this, you must write to:

Eric Nehl, PhD
Assistant Research Professor
Department of Behavioral Sciences and Health Education
Emory University Rollins School of Public Health
1518 Clifton Road, NE
Room 522
Atlanta, GA 30322

At that point, the researchers would not collect any more of your PHI. But they may use or pass along the information you already gave them so they can follow the law, protect your safety, or make sure the research was done properly.

Contact Persons

If you have any questions about this study, please contact a member of the research team.

If you feel you have been harmed in this study, please contact a member of the research team.

Dr. Eric Nehl: (404) 727-9445 or enehl@emory.edu
Danielle Gilliard: (910) 583-2377 or dkgilli@emory.edu
Dr. Sophia Hussen: (404) 686-1000 or shussen@emory.edu
Dr. Frank Wong: (404) 727-9568 or fwong3@emory.edu

If you have any questions about your rights as a participant in this study, you can contact the Emory University Institutional Review Board.

If you wish to make a complaint, you can contact the Emory University Institutional Review Board.

Emory University Institutional Review Board:
Emory IRB

1599 Clifton Road
5th Floor East
Atlanta, GA 30322, USA
Tel: (404) 712-0720 or toll free at 877-503-9797
Email: irb@emory.edu

If you are a patient receiving care from the Grady Health System, and you have a question about your rights, you may contact Dr. Curtis Lewis, Senior Vice President for Medical Affairs at (404) 616-4261.

You may print a copy of this form to keep. If you would like a copy of this form, but are unable to print it, you may contact Dr. Eric Nehl at enehl@emory.edu or Danielle Gilliard at dkgilli@emory.edu.

☐ **Check this box if you're willing to volunteer for this research.**

If you do not want to volunteer for this research, you may simply close this window.

Appendix D

EMORY UNIVERSITY, ROLLINS SCHOOL OF PUBLIC HEALTH

Consent Form II
Flesch-Kincaid Reading Level: 8.0

Dating Phone Apps & Relationships

Eric Nehl, PhD
Danielle Gilliard
Sophia Hussen, MD, MPH
Frank Wong, PhD

Introduction

You are being invited to take part in a research study because you are a Black man, between the ages of 18 and 24 years, who endorses sex with men, and uses dating phone apps at least once a week. This form is designed to tell you everything you need to think about before you decide to consent (agree) to take this survey. It is entirely your choice. Please read this form carefully. It is entirely your choice. If you decide to join, you can change your mind later on. You can withdraw from the study at any time. You can skip any questions that you do not wish to answer. You can take and keep a copy of this consent form. By agreeing to join this study you will not give up any legal rights.

Study Overview

The purpose of this study is to understand the dating and sexual experiences of young Black men who are between the ages of 18 and 24 years, endorse sex with men, and regularly use dating phone apps to seek partners. We plan to recruit 30 males into this study. This survey will determine if you are eligible to participate in the study. If you are, we will provide contact you to set an interview date. Half of the participants (15) will be HIV positive and the other half (15) will be HIV negative, never tested, or don't know their status.

Procedures

If you agree to take part in this project, we will do a 90 minute face-to-face interview. I will ask you about your dating experiences, dating phone apps, relationships, HIV testing and condom use. During the interview we will ask you about some sensitive topics, such as your sex life. You may feel uncomfortable being asked these things. You

do not have to answer any questions you do not want to answer. You can withdraw from the study at any time.

After the interview, you will be given a demographic questionnaire that asks you basic information and information about your sex life, dating phone app use, condom use and HIV testing. The questionnaire will take about 5 minutes to complete. The questionnaire is printed out, so you fill it out yourself. The questionnaire asks about some sensitive topics, such as your sex life. You may feel uncomfortable being asked these things. You do not have to answer any question you do not want to answer. You can leave it blank.

Risks

The risks of participating in this study are very minimal. We will discuss some risks involved in participating in this study. You should consider these risks carefully before deciding to participate.

The questions asked by the questionnaire and by the interviewer may make you feel uncomfortable. You do not have to answer any question you do not want to answer. You are also free to stop the interview at any time. Another potential risk of your participation in this interview is a breach of confidentiality. You do not have to agree to participate in this research.

Benefits

This study does not benefit you directly. This study is designed to learn more about the dating experiences and relationships of young Black men who have sex with men (MSM) who use dating phone apps. The study results may be used to inform further research and public health interventions for young Black MSM.

Compensation

If you take part in this study, you will receive a $25 gift card to compensate you for today's visit. This is to compensate you for your time and travel.

Grady Health System Disclaimer

We will give you emergency care if you are injured by this research. However, Grady Health System has not set aside funds to pay for this care or to compensate you if a mishap occurs. If you believe you have been injured by this research, you should contact Dr. Sophia Hussen (Phone (404) 686-1000). We will give you emergency care if you are injured by this research.

Confidentiality

All research data will be kept in a secure location. All of your study data will be linked by a study ID number. The file that links your name to your ID number will be kept in a secure location. All persons who have access to your name and other identifying information are required by federal laws to not reveal this information to persons outside the study.

Certain offices and people may look at study records. Government agencies may look at your study records. Emory employees overseeing proper study conduct may look at your study records. These include the Office for Human Research Protections, the Institutional Review Board, and the Office of Research Compliance. We will keep all records private to the extent we are required to do so by law. This is the case even if you admit to illegal activity. We will use a study number instead of your name on study records. If you express an interest in participating in future research opportunities, we will request your e-mail address, phone number, and first name. None of the results we publish from this study will identify you or anything identifying about you.

We will do everything we can to keep others from learning about your participation in the research. You do not have to agree to participate in the research.

Authorization to Use and Disclose Health Information

If you give permission to be in this study, you are authorizing all researchers who are associated with the research project at Emory University to use or disclose (release) health information that identifies you for the research study described above. The health information that the investigators may use or disclose (release) for this research includes all information collected during the research study described in this informed consent form. The health information listed above may be used and/or disclosed (released) to all investigators and team members involved with the research described above. In addition, people and committees at Emory who are responsible for making sure that research is conducted correctly will have access to your health information to provide oversight for this study. Emory University is required by the HIPAA Privacy Rule to protect your health information, but some people who receive health information may not be required by the Privacy Rule to protect it and may share your information with others without your permission, if permitted by laws governing them.

You may change your mind and revoke (take back) this Authorization at any time, except to the extent that Emory University has already acted based on this Authorization. To revoke this Authorization, you must write to Dr. Eric Nehl at enehl@emory.edu. If you revoke this Authorization, you may no longer be allowed to participate in this research. Furthermore, even if you revoke this Authorization, the

researchers may still use and disclose health information they already have obtained as necessary to maintain the reliability of the research.

Voluntary Participation and Withdrawal from the Study

Your participation is completely voluntary. You have the right to refuse to be in this study. You can stop the interview at any time after giving your consent. You do not need to give a reason for not consenting. Your decision to be or not to be in the study will not affect any other benefits or services available to you.

You do not have to agree to participate in this research. Even if you do, at any time later on you may revoke (take back) your permission. If you want to do this, you must write to:

Eric Nehl, PhD
Assistant Research Professor
Department of Behavioral Sciences and Health Education
Emory University Rollins School of Public Health
1518 Clifton Road, NE
Room 522
Atlanta, GA 30322

At that point, the researchers would not collect any more of your PHI. But they may use or pass along the information you already gave them so they can follow the law, protect your safety, or make sure the research was done properly.

Contact Persons

If you have any questions, comments, complaints or concerns, about this study, please contact a member of the research team:

Dr. Eric Nehl: (404) 727-9445 or enehl@emory.edu
Danielle Gilliard: (910) 583-2377 or dkgilli@emory.edu
Dr. Sophia Hussen: (404) 686-1000 or shussen@emory.edu
Dr. Frank Wong: (404) 727-9568 or fwong3@emory.edu

If you have any questions about your rights as a participant in this study or wish to make a complaint, you can contact the Emory University Institutional Review Board.

Emory University Institutional Review Board:
Emory IRB
1599 Clifton Road

5th Floor East
Atlanta, GA 30322, USA
Tel: (404) 712-0720 or toll free at 877-503-9797
Email: irb@emory.edu

If you are a patient receiving care from the Grady Health System, and you have a question about your rights, you may contact Dr. Curtis Lewis, Senior Vice President for Medical Affairs at (404) 616-4261.

We will give you a copy of this consent form to keep. If you're willing to volunteer for this research, please provide your name and sign below.

_____

Volunteer name (print)

_____

Volunteer signature **Date** **Time**

_____

Staff Consenter name (print)

_____

Staff Consenter signature **Date** **Time**

Appendix E

Volunteers Needed for Dating Phone App Research Study

We need participants for a research study: "How do dating phone apps influence protective sex behaviors of HIV -positive and -negative young black men?"

Description of Project: We are researching the dating and sexual experiences of young Black men that regularly use dating phone apps. Dating phone apps include, but are not limited to, GRINDR, Jack'd, Hornet, and Man Hunt. Your participation will take about 90 minutes. We will ask you to participate in a face-to-face interview.

Participants will be compensated with a $25 gift card.

To see if you are eligible to participate follow this link:

http://www.emorysurvey.org/s3/Dating-Phone-Apps-and-Relationships

OR

Scan the QR code at the top right corner.

To learn more, contact Danielle Gilliard at 910-583-2377 or dkgilli@emory.edu

Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**	Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**	Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**	Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**	Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**	Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**	Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**	Danielle Gilliard dkgilli@emory.edu **Dating Phone App Research Study**

Appendix F

Interview Guide

This interview is part of a research project to learn more about young men who use dating phone apps to find partners. We want to hear from you about your experiences using these apps. You are the expert and we want to understand your feelings, opinions and experiences. During this interview I will be asking some personal questions about your feelings, I am going to record the discussion and also take some notes to help me remember what is said. That being said, I want to stress to you that everything that is said, recorded, or written down during our conversation will be kept strictly confidential. If I do use any of your words, your name will never be linked to them. Do you have any questions before we start?

Part I: Introduction

The first set of questions is general, just to give me a sense of who you are and what your life is like.

1. Tell me a little bit about yourself.
    a. Where did you grow up?
    b. Are you working? In school?
    c. How do you spend your time?
    d. Who do you spend time with?

Part II: Experiences using Phone Apps

Now I want to ask you some questions relating the phone apps that you use. Some of these questions may get personal, so just tell me as much as you feel comfortable with.

2. Which apps do you use?
3. How would you describe each of these phone apps to someone who's never seen these before?
    a. What are the apps? Is there any difference between the apps?
    b. What is good or bad about each of them?
    c. How popular do you believe these apps are among your friends?
4. Tell me about when you started using dating phone apps?
    a. When did you first start using these apps?

   b. How did you first learn about these apps?
   c. What were your expectations?
   d. Have your expectations changed? Why?
   e. Have your motivations or expectations changed?
   f. Why do you use these apps now?
   g. Have your reasons for using these apps changed?
5. Can I see your profile? [use the questionnaire]
   a. What do you have displayed on your profile?
   b. How do you believe guys perceive you when they read your profile?
   c. Why do you have the info you have listed?
6. What do you look for in a guy when you use these phone apps?
   a. Does a person's HIV status affect your interest in him? Why or why not?
   b. Tell me about how a person's HIV status affects your interaction with this app.
   c. What type of guys do you avoid on these apps?
7. Do you typically approach others, or do others approach you? Why do you think that is? After you find someone that you like on these apps, what happens next?
   a. If you use the chat option, what do you chat about?
   b. If you talk on the phone, what do you talk about?
   c. What's usually going through your mind before you meet these guys?
   d. What usually happens when you meet these guys?
   e. How do you decide whether or not to have sex with these guys?
8. Please tell me about the last three people you met using [app name].
   a. What has been a good sexual experience when using these apps? Why was it good?
   b. What has been a bad sexual experience when using these apps? Why was it bad?
9. What are the similarities or differences between people you meet using the phone apps and people you meet in other ways?
10. Tell me how your friends use these phone apps.
   a. Is it different from how you use them?

Part III: Condom Negotiation, HIV Status Disclosure & Subsequent HIV Testing

Now I want to shift directions a little bit and talk specifically about how condoms and HIV status are discussed

11. At what point do you typically talk about condoms with a guy you meet via phone apps?
    a. How do you decide when to use condoms with these guys you meet using the phone apps?
    b. How do comfortable do you feel about talking about condoms with these guys?
    c. What motivates you to use condoms regularly?
    d. What makes it difficult to use condoms?
    e. How do believe other people who you use phone apps deal with using condoms?
12. How do you feel about HIV disclosure on phone apps?
    a. What are your experiences with HIV disclosure on phone apps?
    b. Do you present your status on you profile? Why or why not?
13. How does the HIV status of your partner influence how you decide to use condoms?
14. [HIV NEGATIVE] How do you decide when to get tested for HIV?
    a. How do these apps influence you to get tested?
15. How do you think using these apps might affect whether or not people
    a. use condoms,
    b. disclose their status
    c. or get tested for HIV?
16. <u>If you could design a dating app that would influence people to use condoms and get tested, what would that app look like?</u>

Those are all the questions I have for you. Do you have any other questions or comments about anything we've talked about? Thank you so much for your time and your participation in this project.

Appendix G

Demographic Questions

The following questions are meant to find out more about who you are and what you believe. There are no right answers to these questions. Please answer them as honestly as you can. Do not put your name or any other identifying information on this survey!!!!!

***General**: Questions in the first section asks general questions about you.*

1. How old are you? _____
2. Where were you born? (city) _____(country) _____
3. What word **best** describes your sexual orientation? (Please circle one)
   a) Heterosexual
   b) Straight
   c) Homosexual
   d) Gay
   e) Bisexual
   f) Same gender-loving
   g) Two-spirited
   h) Other (Please describe) _____
4. What is your race/ethnicity? (Circle all that apply)
   a. Black/African-American
   b. Caribbean
   c. African
   d. Biracial/multiracial
   e. Other _____

Education/Work: *The following questions ask about your education, job training, and work experience.*

5. What is the highest level of education you have completed? (Please circle one)

   a) Less than 9th Grade
   b) 9th – 11th Grade
   c) High school diploma/GED
   d) Some college
   e) College degree (BA, BS)
   f) Graduate Degree (Masters, PhD, MD, JD)
   g) Technical school
   h) Job training
   i) Other (Please describe) _____

6. Do you have a job right now? ____ Yes ____ No

If yes: Job title _____

We are interested in learning about you sexual behavior and condom use with your sexual partners.

1. How many male sexual partners have you had in the past 12 months? _____

2. Are you **currently** having sex with more than one man?

   a. Yes 1
   b. No 2
   c. Refuse to Answer 99

3. Are you **currently** in a committed (primary) relationship with a man (like a boyfriend or partner)? (Choose one) **(IF "NO," SKIP TO QUESTION 16)**

   a. Yes 1
   b. No 2
   c. Refuse to Answer 99

4. How long have you been in this relationship? (Choose one)
   a. Less than 6 months 1
   b. 6-11 months 2
   c. 1-2 years 3
   d. 3-4 years 4
   e. 5 or more years 5
   f. Refuse to Answer 99

5. In the past 12 months, how often have you used condoms with this man (primary sexual partner) when you put your penis in his butt? (Choose one)

   a. Always 1
   b. Most of the time 2
   c. Half of the time 3
   d. Sometimes 4
   e. Never 5
   f. We haven't had anal sex where I penetrate him in that time 99

6. In the past 12 months, how often have you used condoms with this man (primary sexual partner) when he puts his penis in your butt? (Choose one)

   a. Always 1
   b. Most of the time 2
   c. Half of the time 3
   d. Sometimes 4
   e. Never 5
   f. We haven't had anal sex where he penetrates me in that time 99

7. In the past 12 months, how often have you used condoms when you put your penis in a man's butt who was not your boyfriend or partner? (Choose one)

   a. Always 1
   b. Most of the time 2
   c. Half of the time 3
   d. Sometimes 4
   e. Never 5
   f. I haven't had insertive anal sex with any men in that time 99

8. In the past 12 months, how often have you used condoms when a man puts his penis in your butt who was not your boyfriend or partner? (Choose one)

   a. Always 1
   b. Most of the time 2
   c. Half of the time 3
   d. Sometimes 4
   e. Never 5
   f. I haven't had receptive anal sex with any men in that time 99

9. In the past 12 months, have you had anal sex without a condom with any man that you knew was HIV positive?

   a. Yes 1
   b. No 2
   c. Unsure 3
   d. Refuse to Answer 99

10. How many transgendered (male to female) sexual partners have you had in the past year? _____

11. How many female sexual partners have you had in the past year? _____

Dating Phone Apps

12. How old were you when you first started using dating phone apps? _____

13. How often do you log on to your dating phone app in one week?
    a. Not very often
    b. Rarely
    c. Often
    d. Very Often
    e. Don't know

14. How often do you use your dating phone app to search for men?
    a. Not very often
    b. Rarely
    c. Often
    d. Very Often

15. How often do you use your dating phone app to meet with men?
    a. Not very often
    b. Rarely
    c. Often
    d. Very often

16. How often has a relationship developed with a man you met using a dating phone app?
    a. Not very often
    b. Rarely
    c. Often
    d. Very often

17. How likely are you to engage in sex with men you met using dating phone apps?
    a. Very unlikely
    b. Unlikely
    c. Likely
    d. Very likely

HIV Testing Practices

We are interested in learning about your past HIV testing experiences. We understand that some of these questions are quite sensitive but your honesty is needed and greatly appreciated.

18. Have you been tested for HIV in the past year? **(If "No," skip to question 22)**
    a. Yes 1
    b. No 2
    c. Don't know 77
    d. Refused 99

19. Did you return for the results?
    a. Yes 1
    b. No 2
    c. Don't know 77
    d. Refused 99

20. What did you think your chances are of getting HIV based on your sexual behavior in the past year?
    a. Very likely 1
    b. Likely 2
    c. Equally as likely as unlikely 3
    d. Unlikely 4
    e. Very unlikely 5
    f. Don't know/ Not sure 77
    g. Refused 99

21. What did you think your chances are of getting HIV based on your sexual behavior in the past 3 months?
    a. Very likely 1
    b. Likely 2
    c. Equally as likely as unlikely 3
    d. Unlikely 4
    e. Very unlikely 5
    f. Don't know/ Not sure 77
    g. Refused 99

Appendix H

PROFILE QUESTIONNAIRE

PID:	**Phone App Name:**	**Date:**
Profile Components	**Checklist**	**Notes**
Profile Picture	Yes No	
Name Listed	Yes No	
Last Online	Yes No	
Age	Yes No	
Height	Yes No	
Race/Ethnicity	Yes No	
Description	Yes No	
Relationship Status	Yes No	
Sexual Position Preference	Yes No	
HIV Status	Yes No	
Partner Preferences	Yes No	
Condom Use	Yes No	
HIV Test date	Yes No	

Appendix I

Code	Definition	Keywords
Profile	Mentions of profile on dating phone application including pictures, interests, about me	Profile, my page
Community	References to the gay community, homosexual community, gay families, Atlanta's guys, cultural climate, general gay community outside of Atlanta, "Black gay community", young black gay guys, young guys, differences between Southern gay community and the gay community in other places.	Gay community, gays,
Sex	All forms of sexual intimacy including anal, oral, masturbating, vaginal, fisting, group sex, fetishes, etc.	Sex, hooking up, fetishes
HIV Status	Referring to HIV in general, testing, status, etc.	Positive, negative, poz
Attractiveness/Attraction	References to physical appearance, attractiveness, personal partner preferences, includes what's unattractive and unappealing, all feelings about looks, appealing personal qualities, in addition to inner qualities (personality, values, interests)	Attracted, attractive, looks, preferences, appealing, captivating
Femininity/Masculinity/Gender Roles	Mentions of feminine and masculine appearance, gender roles, acting feminine, acting masculine, definitions, opinions about what these roles mean to people, and how these roles/labels affect individuals and the gay community	Categories, Feminine, Fems, Masculinity, discreet, Down Low, DL
Age/Maturity	References to age groups, maturity, experience or maturity independent of age,	Older guys, young guys, Old dudes, Silver bears, Big Daddies
Catfish/False Identity	Experiences about being	Catfish, fooled, tricked,

	catifshed, fooled, tricked, or lied to about someone's true identity. Identity refers to the participant's perception of another person's physical appearance or personality.	lied, liar, identity, steal,
DDF/Drugs	Reference to drugs of any kind, including alcohol, marijuana, cocaine, etc.	Party and play, P&P, Disease & Drug Free, DDF, smoke, weed, trees
Discernment/Judgment	Reference to having a perceived ability to judge someone's personality, health (HIV status), or appearance despite limited information.	Discerning spirit, discernment, discern, "I can just tell"
Stigma	Reference to any kind of stigma; feelings of being judged	
Gayness/Straightness	Definitions of being gay or being straight; intersects with being masculine or feminine qualities	
Sexual Position	Refers to sexual position preferences and opinions about what those positions mean	Tops, Verse, Verse Bottom, Verse Top, Bottom, Versatile
Apps	Any mention of the apps in general, opinions about the apps, differences, similarities, the types of people on the apps, etc. Different from the personal profile.	Jackd, Plenty of Fish, Grindr, A4A, A4ARadar, Men4Now
Communication	Communication via app, telephone, text, or in person	
Dating Experiences	Describes experiences dating people met via the app	
Other Dating	Dating and meeting people in other ways outside of phone apps	In person, face to face, website dating