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‘It’s a very gray, very messy area’: Factors influencing undetectable gay men’s HIV status disclosure decisions to sexual partners

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New York University
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An abstract of
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Rollins School of Public Health, Emory University
in partial fulfillment of the requirements for the degree of
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Abstract

Objective: HIV disclosure to sexual partners is a multifaceted yet stigmatized process. Previous qualitative literature has examined this process, but few studies have focused specifically on gay-identified men, a group disproportionately affected by the HIV epidemic in the United States. Additionally, the concept of ‘undetectable equals untransmittable’ (U=U) has raised discussions around the ethics and morals of disclosure, but few studies have broached this topic during a period of wider knowledge and acceptance of U=U. Similarly, few studies have examined how HIV criminalization laws impact undetectable persons’ disclosure patterns. Thus, this study explores the factors that impact undetectable gay men’s HIV status disclosure decisions to sexual partners.

Methods: Using a model presented by Bird and Voisin (2010) as a framework, semi-structured interviews were conducted with 20 self-identified undetectable gay men about topics related to the cognitive, contextual, and interpersonal factors impacting their decisions to disclose to sexual partners. Interviews were coded and analyzed using thematic analysis.

Results: Three themes emerged from the data: ‘sense of obligation,’ ‘situational disclosure,’ and ‘partners’ responsibility in the disclosure process.’ All themes covered the cognitive, contextual, and inter-personal factors contributing to status disclosure decisions, respectively and mostly aligned with the Bird and Voisin model. These factors were nuanced and, at times, contradictory to one another. Being undetectable modified how some participants felt about disclosure but there was not one consistent pattern across all participants.

Conclusions: This study examined the cognitive, contextual, interpersonal, and structural factors that influence undetectable gay men’s HIV status disclosure decisions to sexual partners. These factors were related to feeling obligated to disclose; how disclosure is situational; and sexual partners’ responsibilities in the disclosure process. Findings demonstrated the complexities of this process and had implications for the modernization or repeal of HIV criminalization laws as a way to mitigate structural HIV stigma.

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Chapter 1: Introduction

A note on terminology: throughout this thesis, the term used to describe specific populations of male-identified individuals who have sex with other male-identified individuals changes based on the context in which it is being used. For example, "men who have sex with men" (MSM) is used while describing epidemiological data and results from some previous studies where that was the described population, while "gay men" is used in other locations when discussing topics as they specifically relate to the gay community. This was intentional in order to "commit to… the use of terminology that accurately reflects the complexities of sexual orientation and identity" (Baker & Harris, 2020).

HIV in Cisgender Men Who Have Sex with Men

Men who have sex with men (MSM) are disproportionately affected by HIV in the United States: despite comprising only approximately 2% of the overall population (Purcell et al., 2012), they make up an estimated 55% of all HIV infections in the country (Centers for Disease Control and Prevention, 2019). While the number of new HIV diagnoses in this population are decreasing (Jeffries et al., 2020), MSM still make up the largest proportion of new cases (Centers for Disease Control and Prevention, 2020a). Fortunately, there have been recent improvements in linkage to HIV care within a month of diagnosis and viral suppression within six months of diagnosis (Jeffries et al., 2020). In 2018, it was estimated that 67.3% of all newly diagnosed MSM were virally suppressed within six months of diagnosis, an increase from 51.1% in 2014 (Centers for Disease Control and Prevention, 2020d).

Viral suppression is defined as when one's viral load (VL), or the amount of HIV in the blood, is below 200 copies per milliliter of blood (Centers for Disease Control and Prevention, 2020c). This is achieved through consistent, generally daily use of HIV medications, known as antiretroviral therapy (ART) (Centers for Disease Control and Prevention, 2020c). Viral suppression offers a number of benefits, including prevention of HIV progression to acquired immunodeficiency syndrome (AIDS), decreased mortality, reduced inflammation, and reduced cancer incidence (Borges et al., 2014; Centers for Disease Control and Prevention, 2020c; Mocroft et al., 2012; Rutstein et al., 2017).

It is possible to reduce one's VL to levels lower than the 200 copies/ml threshold for viral suppression. Once a VL is low enough to be undetected by standard tests, a VL is "undetectable" (Centers for Disease Control and Prevention, 2020c). Once undetectable, it is not possible to sexually transmit HIV (Bavinton et al., 2018; Centers for Disease Control and Prevention, 2020c; Eisinger et al., 2019; Rodger et al., 2019; Vernazza et al., 2008). This concept is commonly referred to as "undetectable equals untransmittable," or "U=U" (Prevention Access Campaign, 2020). Because of the inability to sexually transmit HIV, U=U is a central concept in efforts to end the HIV epidemic nationally and around the world (Eisinger et al., 2019; Prevention Access Campaign, 2020).

HIV Disclosure to Sexual Partners

HIV transmission risk is reduced through methods other than biomedical ones (e.g., ART), such as through discussing partner serostatus. When sexual partners have accurate information about their partners' HIV statuses, they can better assess and navigate potential transmission risks (Sullivan, 2005). Explicit serostatus disclosure among MSM is negatively associated with HIV infection risk, while assuming partners' negative HIV statuses is associated with increased HIV infection risk (Santos-Hövener et al., 2014). Serostatus discussions only happen in a minority of MSM, however, depending on feasibility (Prestage et al., 2001; Santos-

Hövener et al., 2014). Other factors impacting whether or not disclosure occurs are knowing one's own HIV status, emotional connection to sexual partners, number of sexual partners, and safer sex practices (Marcus et al., 2017). The use of dating or hookup-focused websites and applications impact explicit HIV status disclosure frequency in ways that both facilitate it (e.g., normalizing HIV statuses in profiles) or hinder it (e.g., relying on profiles for status disclosure) (Davis et al., 2006; Grov et al., 2013; Liang et al., 2020; Race, 2010).

When serostatus discussions do not occur, MSM may make assumptions about their sexual partners' HIV statuses. Relying on assumptions may increase the risk for HIV transmission because of a related reduction in perceived HIV risk (Eaton et al., 2009; Jin et al., 2007; Klitzman, 1999; Murphy et al., 2015; Race, 2010; Suarez et al., 2001; Sullivan, 2005). These assumptions can either be that partners are living with HIV or not, depending on normative expectations of HIV status prevalence, perceived sensitivity of discussing HIV, or the thought that all partners living with HIV would disclose (Grov et al., 2013; Murphy et al., 2015; Race, 2010). It is estimated that anywhere between 39% to 91% of men who have sex with men living with HIV (MSMLWH) disclose to sexual partners (Bingman et al., 2001; Durham et al., 2013; Okafor et al., 2020; Serovich et al., 2018; Sullivan, 2005) and that approximately 57% of MSMLWH tend to or strongly expect to disclose before having sex with a new sexual partner (Daskalopoulou et al., 2020).

HIV Stigma

HIV disclosure is circumstantial but may be driven by stigma avoidance, no matter the context (Bird & Voisin, 2010). Stigma occurs when one holds a “tainted” attribute that is labeled as different and undesirable, resulting in between-group differences and status loss (Goffman, 1963; Link & Phelan, 2001). HIV is stigmatized because the it is perceived as contagious, voluntarily contracted/avoidable, fatal (if untreated), and associated with taboo behaviors such as sex and drug use (Bird & Voisin, 2010; Herek, 1999). For these reasons, HIV is seen as not only undesirable but threatening (Bird & Voisin, 2010; Tsarenko & Polonsky, 2011).

HIV stigma has been seen as a dividing factor within the gay community, creating a schism between those living with HIV and those not (Courtenay–Quirk et al., 2006). HIV stigma within the community may be born out of ignorance, outdated ideas of HIV (e.g., a “death sentence”), physical changes related to living with HIV and/or taking ART, and racial/ethnic group cultural beliefs, among other reasons (Courtenay–Quirk et al., 2006; Dong et al., 2020; Smit et al., 2012). Stigma may manifest itself online through using “clean” or “drug/disease free” (DDF) to refer to mean “HIV-negative,” implying that someone with HIV is “dirty” or “diseased” (Grov et al., 2013).

HIV Disclosure Conceptual Model

Based in stigma theory, Bird and Voisin (2010) propose a model that describes how stigma affects MSMLWH’s decisions to disclose their HIV statuses to casual sexual partners. They define “casual” sexual partnerships as those that are shorter-term and sex-focused with limited, superficial communication and expectations (Bird & Voisin, 2010). According to the model, MSMLWH’s decisions to disclose their serostatuses are based on both cognitive and contextual factors that mediate the pathway between stigma and disclosure decisions (Bird & Voisin, 2010). These factors are: 1. Beliefs about disclosure risks, 2. Beliefs about privacy and responsibility, 3. Partner characteristics and HIV status assessments and assumptions, 4. Sexual setting, and 5. Sexual risk behavior (Bird & Voisin, 2010). While the authors describe these five mediating factors separately, they state that they cannot be considered independent of one another given how closely they are intertwined (Bird & Voisin, 2010).

Beliefs About Disclosure Risks

The first cognitive mediating construct is beliefs about disclosure risks, defined as the costs believed to be associated with disclosure and the desire to avoid them (Bird & Voisin, 2010). Costs such as rejection, humiliation, stereotyping, abuse, and violence generally lead to feelings of stigmatization and loss of sexual opportunities, which may increase the desire to withhold disclosure (Arnold et al., 2014; Bird et al., 2017; Courtenay–Quirk et al., 2006; Gorbach et al., 2004; Race, 2010; Shrestha et al., 2019; Sullivan, 2005; Tan et al., 2020; Warner et al., 2018, 2019; Zea et al., 2003). Conversely, the desire to avoid risks associated with non-disclosure such as psychological and emotional distress and guilt, by sexual partners may lead MSMLWH to disclose up front (Davis et al., 2006; Klitzman, 1999; Sullivan, 2005; Warner et al., 2018, 2019).

Beliefs About Privacy and Responsibility

The second cognitive mediating factor, beliefs about privacy and responsibility, refers to the degree to which MSMLWH believe their HIV status should be shared with casual sexual partners (Bird & Voisin, 2010). A number of MSMLWH believe their serostatuses are private medical information and therefore do not need to be shared (Gorbach et al., 2004). In order to keep control over who has access to this part of their identities, MSMLWH may use tacit methods of disclosure such as visual hints (e.g., visible ART bottles for sexual partners to see), verbal cues (e.g., mentioning a doctor’s appointment), and omission of HIV status on websites and mobile applications (Galletly & Pinkerton, 2006; Gorbach et al., 2004; Klitzman, 1999; Race, 2010; Warner et al., 2018, 2019). Such methods may allow MSMLWH to feel disclosure is happening, with partners understanding the implied message as secondary (Galletly & Pinkerton, 2006).

Despite a perceived desire to keep their statuses private, MSMLWH may disclose anyway because of a sense of responsibility or morality, driven by desires to be honest with sexual partners or to give them the option to engage in a potential risk activity (Bayer, 1996; Bird & Voisin, 2010; Davis et al., 2006; Gorbach et al., 2004; Klitzman, 1999; O'Leary et al., 2013; Race, 2010; Sullivan, 2005). However, responsibility is complicated by the view, held by some MSM, that all sexual partners assume an inherent level of HIV transmission risk when engaging in sexual intercourse, or that safer sex practices and being undetectable are sufficient enough to protect partners so that disclosure is not necessary (Gorbach et al., 2004; Klitzman, 1999; Race, 2012; Tan et al., 2020).

Partner Characteristics and HIV Status Assessments and Assumptions

The first of the contextual mediating constructs between stigma and disclosure decisions for MSMLWH is partner characteristics and HIV status assessments and assumptions. This is defined by Bird and Voisin (2010) as the perceived HIV status of sexual partners. MSMLWH may use their partners' appearances, HIV risk behavior patterns, places of socialization, HIV-related knowledge, and online profile content to assess status when explicit disclosure does not occur. (Bird et al., 2017; Bird & Voisin, 2010; Elwood, 1999; Gold et al., 1999; Gorbach et al., 2004; Hong et al., 2006; Klitzman, 1999; Parsons et al., 2006; Santos-Hövener et al., 2014; Sullivan, 2005; Warner et al., 2019). Whether their partners are perceived to be living with HIV or not may determine whether or not MSMLWH disclose (Bird & Voisin, 2010).

Sexual Settings

The settings in which sex occurs impact how and if HIV status disclosure occurs (Bird & Voisin, 2010; O'Leary et al., 2013; Prestage et al., 2001; Santos-Hövener et al., 2014; Sullivan, 2005). Sex-on-premise venues (e.g., bathhouses) are primarily used for casual and anonymous encounters in which information-sharing—including HIV status—is not expected, if not discouraged, because of a normative expectation of silence (Bird & Voisin, 2010; Elwood, 1999; Elwood et al., 2003; Gorbach et al., 2004). This expectation, combined with the lack of trust in anonymous partners, may make MSMLWH feel as if they are not responsible for sharing their serostatuses with sexual partners (Bird et al., 2017; Gorbach et al., 2004; Klitzman, 1999). Juxtaposed to casual and/or anonymous encounters, sexual relationships between more intimate partners may facilitate serostatus disclosure because of the emotional bond and desires for support and trust, therefore increasing the perceived level of responsibility (Bird et al., 2017; Gorbach et al., 2004; Klitzman, 1999; Marcus et al., 2017; O'Leary et al., 2013; Serovich et al., 2018; Sullivan, 2005).

Websites and mobile applications used for arranging sexual encounters may also be seen as sexual "settings" in how they affect disclosure patterns (Davis et al., 2006; Giles, 2020; Grov et al., 2013; Liang et al., 2020; Warner et al., 2018, 2019). The ability to identify as living with HIV, or "poz," on profiles may make MSMLWH feel as if explicit HIV status disclosure through chats is not warranted (Davis et al., 2006; Grov et al., 2013). Further, through the use of filters, websites and applications can facilitate finding other "poz" or "poz-friendly" sexual partners in an effort to reduce stigma experiences (Liang et al., 2020; Race, 2010; Warner et al., 2018, 2019); on the other hand, filtering may be used by HIV-negative MSM to intentionally exclude potential sexual partners living with HIV (Liang et al., 2020).

Sexual Risk Behavior

In their model, Bird and Voisin (2010) describe sexual risk behavior as a discrete mediating construct. While sexual risk behavior is an important consideration in MSMLWH's disclosure decisions to casual sexual partners, it is intertwined with other mediating constructs, such as privacy and responsibility and partner assessments and assumptions. This is due to MSMLWH's evaluations as to whether or not their sexual behaviors put their partners at risk for HIV acquisition, thus creating a sense of responsibility to disclose (Bird et al., 2017; Bird & Voisin, 2010; Gorbach et al., 2004; Klitzman et al., 2007; Klitzman, 1999). Sexual risk behavior factors that can affect disclosure decisions include condom use, strategic positioning (i.e., the partner living with HIV as the receptive partner), the use of ART for viral suppression/being undetectable, and partners' actual HIV statuses (Daskalopoulou et al., 2020; Gorbach et al., 2004; Klitzman, 1999; Okafor et al., 2020; Race, 2010; Rosser et al., 2008; Shrestha et al., 2019; Sullivan, 2005; Van De Ven et al., 2002; Wilson et al., 2016). One thought is that lowered or negligible risk of HIV transmission (including if a partner is also living with HIV) diminishes the level of responsibility to disclose (Gorbach et al., 2004; Race, 2010; Tan et al., 2020). On the other hand, safer sex practices may offer greater comfort for MSMLWH to disclose their statuses (Dong et al., 2020; Golden et al., 2004; Grace et al., 2015; Klitzman et al., 2007).

Structural HIV Stigma, HIV Criminalization Laws, and Responsibility

Bird and Voisin's model, while useful, focuses on HIV stigma at individual and interpersonal levels. HIV stigma operates beyond these levels, including at the structural level where interpersonal differences are used "by concrete and identifiable social actors seeking to legitimize their own dominant status within existing structures of social inequality" (Parker & Aggleton, 2003). In other words, societal frameworks can be taken advantage of to maintain differences in power (Parker & Aggleton, 2003).

An example of this is the United States' HIV criminalization laws. They were first enacted in 1986 to prevent new HIV infections and as of 2020, 37 states have official HIV criminalization laws (Blankenship et al., 2006; Centers for Disease Control and Prevention, 2020b; Lehman et al., 2014). These laws fall under HIV-specific statutes, sexually transmitted infection (STI)-specific statutes, or non-specific statutes (Centers for Disease Control and Prevention, 2020b). Largely, they apply to sexual conduct, sex work, and exposure to bodily fluids while not always requiring transmission, proof of transmission, status disclosure, or intent to transmit (Galletly & Pinkerton, 2006; The Center for HIV Law & Policy, 2020). Most states' HIV criminalization laws criminalize behaviors that carry a low or non-existent risk of HIV transmission and/or do not take into account safer sex measures (including condom use, partner pre-exposure prophylaxis use, and viral suppression) (Centers for Disease Control and Prevention, 2020b; Galletly & Pinkerton, 2006; Lehman et al., 2014).

HIV criminalization laws reinforce HIV stigma by criminalizing PLWH for behavior that would otherwise be legal (in the case of consensual sex) for HIV-negative people, therefore constructing PLWH as dangerous threats. (Burris, 2002; Galletly & Pinkerton, 2006; Link & Phelan, 2001; Sobo, 1997). This (re)produces between-group differences between those living with HIV and those not (Galletly & Pinkerton, 2006; Parker & Aggleton, 2003). Sexual partners without HIV are not seen as legally culpable if they seroconvert, which places a disproportionate burden on PLWH for others' serostatuses (Galletly & Pinkerton, 2006; Race, 2012). Additionally, these laws stigmatize gay men because of the disproportionate prevalence of HIV in this population (Murillo, 2016). Structural interventions, including legal policies, have the potential to reduce HIV stigma, but only if they are not reproducers of that same stigma (Parker & Aggleton, 2003).

U=U and Reduction of Social HIV Stigma

Reducing widespread HIV stigma at social and structural levels may be possible through awareness campaigns such as the U=U campaign (Prevention Access Campaign, 2020; Rendina, Cienfuegos-Szalay, et al., 2020). Although knowledge and acceptance of U=U among MSM was low initially, its perceived acceptability and accuracy have grown over time (Rendina, Cienfuegos-Szalay, et al., 2020; Santos-Hövener et al., 2014). U=U reframes living with HIV through a lens of empowerment and control over one's health which also creates the opportunity to educate others (Dong et al., 2020; Tan et al., 2020). The perception of "harming" sexual partners is removed and the concept of shared responsibility is reinforced (Dong et al., 2020; Eisinger et al., 2019; Prevention Access Campaign, 2020; Rendina, Cienfuegos-Szalay, et al., 2020; Tan et al., 2020), a concept that has been integral to how sexual health is framed since the early years of the HIV epidemic (Berkowitz & Callen, 1983).

Research Gaps and Study Purpose

Even in the era of U=U, gay men living with HIV (GMLWH) are still labored with disclosing their statuses and managing sexual partners' reactions (Dong et al., 2020). Numerous qualitative studies have explored GMLWH's HIV status disclosure to sexual partners, but most have not focused on strictly those who are virally suppressed (Arnold et al., 2014; Bird et al., 2017; Courtenay–Quirk et al., 2006; Gorbach et al., 2004; Klitzman, 1999; Zea et al., 2003); those that have were conducted outside of the United States (Tan et al., 2020) or before current levels of U=U knowledge (Dong et al., 2020). Further, even though HIV criminalization laws apply to those who are virally suppressed in most states with these laws, it is not known how, if at all, these laws impact status disclosure decisions to casual sexual partners among GMLWH.

Study Purpose

Given these research gaps, this study seeks to answer the question, "What are the factors influencing undetectable gay men's HIV status disclosure decisions to sexual partners?" The purpose of this study is to provide a greater understanding into the decision(s) to disclose; the factors that contribute to that decision; partners' reactions; and GMLWH's ethical concerns on this topic, guided by the conceptual model presented by Bird and Voisin (2010). In doing so, a more nuanced understanding of this topic will emerge with implications for individual, interpersonal, and structural HIV prevention and stigma reduction interventions.

Chapter 2: Literature Review

HIV in Men Who Have Sex with Men

In 2018, there were an estimated 1.2 million people living with HIV (PLWH) in the United States (Centers for Disease Control and Prevention, 2020a). Among all PLWH in the United States, men who have sex with men (MSM) make up an estimated 55% of this population despite being only about 2% of the overall population, representing a larger, disproportionate burden of infection than any other group (Centers for Disease Control and Prevention, 2019; Purcell et al., 2012). In 2018 alone, MSM accounted for 69% of new diagnoses, although new diagnoses decreased 2.3% per year from 2014 to 2018 (Centers for Disease Control and Prevention, 2020a; Jeffries et al., 2020). Within this same time period, linkage to HIV care among MSM within one month of diagnosis increased 2.9% per year and viral suppression within six months increased by 6.8% per year, on average (Jeffries et al., 2020). In 2018, it was estimated that 67.3% of all newly diagnosed MSM were virally suppressed within six months of diagnosis, an increase from 51.1% in 2014 (Centers for Disease Control and Prevention, 2020d).

Viral suppression refers to when the amount of HIV in the body, known as a viral load (VL), is reduced to below 200 copies per milliliter of blood through the use of antiretroviral therapy (ART) (Centers for Disease Control and Prevention, 2020c). There are many benefits to viral suppression including the prevention of HIV progression to AIDS and decreased mortality (Mocroft et al., 2012; Rutstein et al., 2017). Other physical benefits of viral suppression include reduced inflammation and reduced cancer incidence (Borges et al., 2014; Centers for Disease Control and Prevention, 2020c; Park et al., 2018).

Through the use of ART, it is possible for one’s VL to drop below the 200 copies/ml threshold for viral suppression, down to levels undetected by standard VL tests. This is known as being “undetectable” (Centers for Disease Control and Prevention, 2020c). Depending on the VL testing technology, undetectable can be as low as fewer than 20 copies per milliliter (Charpentier et al., 2012). Getting all PLWH to undetectable is seen as critical to ending the HIV epidemic in the United States (Eisinger et al., 2019). This is partially because once someone is undetectable, they cannot transmit HIV to sexual partners (Bavinton et al., 2018; Centers for Disease Control and Prevention, 2020c; Eisinger et al., 2019; Rodger et al., 2019; Vernazza et al., 2008). This concept is known as “undetectable equals untransmittable” or “U=U” (Prevention Access Campaign, 2020). It has been confirmed through numerous studies, some of which focused exclusively on serodiscordant MSM couples in which there were no linked HIV transmissions from the partner living with HIV to the HIV-negative partner (Bavinton et al., 2018; Eisinger et al., 2019; Rodger et al., 2019). These studies have led to the determination that there is “effectively no risk” of HIV transmission through condomless sex in the absence of pre-exposure prophylaxis (PrEP) (Rodger et al., 2019), therefore solidifying U=U within the larger toolbox of HIV prevention strategies (Grace et al., 2015).

In addition to the physical benefits viral suppression provides, there are many socio-emotional benefits to being undetectable specifically. Because of its demonstrated ability to prevent HIV transmission and its measurability, being undetectable is a way for gay men to have a sense of control over their sexual health and their partners’ (Grace et al., 2015; Souleymanov et al., 2019). In this sense, it can be seen as an aspirational goal or an important milestone for gay men diagnosed with HIV (Giles, 2020; Grace et al., 2015). Additionally, an undetectable status can provide comfort in sexual situations (including resuming sex post-HIV diagnosis), sexual freedom, and a sense of “normalcy” (Grace et al., 2015).

There have been widespread campaigns to increase awareness of U=U at national and international levels (Prevention Access Campaign, 2020). Among MSM, knowledge, acceptance, and perceived accuracy of U=U was initially very low, although all have increased in recent years (Rendina, Cienfuegos-Szalay, et al., 2020; Santos-Hövener et al., 2014). For example, among a large sample of sexual minority men in the United States, there was a 1-2% increase in accuracy rating of U=U per month from November 2017 to September 2018 (Rendina, Cienfuegos-Szalay, et al., 2020). Eighty-four percent of all respondents living with HIV and approximately half of HIV-negative or -unknown respondents considered the message to be somewhat or completely accurate (Rendina, Cienfuegos-Szalay, et al., 2020). This perceived accuracy was higher among sexual minority men living with HIV who had undetectable viral loads (UVLs) than those without UVLs and was strongly linked to the perceived risk of HIV transmission during condomless anal intercourse (CAI) with an undetectable partner (Rendina, Cienfuegos-Szalay, et al., 2020).

Serostatus Conversations and HIV Status Disclosure

Beyond relying on UVLs to decrease HIV transmission risk, transmission risk can be mitigated through serostatus conversations between sexual partners, a practice that has been outlined as a harm reduction strategy since the early years of the HIV epidemic (Berkowitz & Callen, 1983). As Santos-Hövener et al. (2014) have shown, there is a negative association between explicit serostatus discussions prior to sexual intercourse and HIV infection risk among MSM, while the assumption a partner is negative (and therefore, no discussion) is associated with an increased risk. However, there is not a strong association between status disclosure and safer sex practice adoption, nor does disclosure eliminate HIV risk completely (Marcus et al., 2017; Sullivan, 2005). One of the most effective ways to decrease HIV risk, then, is to have accurate information on partners’ serostatuses in order to make an informed choice as to whether or not to engage in sexual intercourse (Sullivan, 2005). One simple way to obtain this information is by asking about serostatus directly (Zea et al., 2003).

Serostatus discussions do not always happen though, and disclosure occurs in only a minority of MSM because it might not always be feasible or possible (Prestage et al., 2001; Santos-Hövener et al., 2014). Across a range of studies on MSM and serostatus disclosure, the percentage of participants asking their partners’ statuses or mutually disclosing ranges from 15.6% to 35% (Marcus et al., 2017; Prestage et al., 2001). Factors associated with disclosure are knowledge of one’s own HIV status, a recent negative HIV antibody test result, and the use of a non-condom HIV risk management strategy with one’s most recent anal intercourse sexual partner (Marcus et al., 2017). Conversely, serostatus disclosure may decrease with an increase in overall number of sexual partners, an undiagnosed HIV infection, sex with a non-steady partner (Marcus et al., 2017).

The advent of the internet and geo-centered dating and hookup mobile applications has also influenced disclosure patterns. Profiles on websites and applications may remove the perceived need for safer sex discussions or preempt them because information about one’s status is in users’ profiles (Davis et al., 2006; Grov et al., 2013). On the other hand, it is possible that serostatus disclosure and conversations have increased and become normalized as using the internet to find sexual partners has become more common (Grov et al., 2013; Liang et al., 2020; Race, 2010). There are two broadly applicable approaches to HIV status information sharing on websites and applications: drop-down menu options for HIV status disclosure and drop-down menus for safer-sex practice preference disclosure (e.g., condoms, PrEP, ART use) (Warner et al., 2019).

In the absence of serostatus conversations, HIV-negative MSM may make assumptions about their partners' statuses. Assuming partner HIV status may inadvertently increase HIV transmission risk (Eaton et al., 2009; Jin et al., 2007; R. L. Klitzman, 1999; Murphy et al., 2015; Race, 2010; Sullivan, 2005). One reason is that there may be a reduction in perceived HIV risk with higher-risk sexual activities (e.g., CAI) if disclosure does not occur (Eaton et al., 2009; Suarez et al., 2001). Another reason may be what Race (2010) calls "seronormativity," or the presumption that a partner is HIV-negative until told otherwise. In other words, being HIV-negative is seen as the "norm," at least more recently (Murphy et al., 2015; Race, 2010).

Similarly, HIV-negative MSM may assume that any partner living with HIV would disclose their status (Murphy et al., 2015; Race, 2010). One study by Murphy et al. (2015) demonstrated that 76% of HIV-negative or untested MSM expected any partner living with HIV to disclose, compared with 46% expecting any HIV-negative partner to disclose. Related to the concept of seronormativity, this disparity illustrates a "disclosure double standard" (Murphy et al., 2015) wherein there is a high expectation that MSMLWH to disclose without that same expectation for HIV-negative MSM. This is perhaps because HIV-negative MSM do not perceive HIV status disclosure to be as sensitive subject of a subject as men who have sex with men living with HIV (MSMLWH) do, so they expect and are comfortable with serostatus conversations (Grov et al., 2013).

Despite these disclosure expectations, the estimates of actual serostatus (non-)disclosure among MSMLWH vary across studies and contexts. The percentage of nondisclosure among MSMLWH ranges from 9.2% to 61% (Bingman et al., 2001; Durham et al., 2013; Okafor et al., 2020; Serovich et al., 2018; Sullivan, 2005), even though it has been estimated that 56.3% of this population tends to or strongly agrees that they expect to disclose their status before having sex with a new partner (Daskalopoulou et al., 2020). Generally, there is an inverse relationship between number of sexual partners and number of partners disclosed to among MSMLWH (Daskalopoulou et al., 2020; Sullivan, 2005). Further, disclosure occurs more frequently as the number of years since diagnosis increases, suggesting that time allows for adjustment to living with HIV (Klitzman et al., 2007; Rosser et al., 2008). The varying rates of expected and actual disclosure illustrate the way in which disclosure patterns are not consistent (Gorbach et al., 2004).

HIV Stigma

One of the fundamental factors—if not *the* fundamental factor—affecting whether or not status disclosure to sexual partners occurs among MSMLWH is stigma and the desire to avoid it (Bird & Voisin, 2010). For instance, PLWH experiencing HIV-related stigma are 2.37 times likelier not to disclose their status to sexual partners (Shrestha et al., 2019). As described by Goffman (1963), stigmatization is a relational process in which someone holds an attribute that is “tainted” or discredits them from being a whole person. Link and Phelan (2001) expanded on this definition by describing how stigma is what happens when human differences are labeled and cultural beliefs attach “undesirable characteristics” to those who are labeled. This labeled difference creates an “us vs. them” mentality resulting in status loss and unequal outcomes; in other words, stigma is contingent on power through difference (Link & Phelan, 2001).

HIV specifically is stigmatized because it is perceived as contracted via “deviant” and “immoral” behaviors that are both voluntary and avoidable, contagious, and ultimately degenerative and fatal if untreated, on top of its association with “taboo” behaviors such as sex and drug use (Bird & Voisin, 2010; Herek, 1999). For these reasons, it is not only seen as undesirable but a health threat (Bird & Voisin, 2010; Tsarenko & Polonsky, 2011). HIV stigma has a variety of effects, including reluctance to get tested for HIV, seek HIV treatment, or adhere to ART (Arnold et al., 2014; Smit et al., 2012). Additionally, it may lead to feelings of rejection, isolation, judgment, and discrimination and lead those experiencing it to cope with substance use and CAI (Courtenay–Quirk et al., 2006; Smit et al., 2012).

HIV stigma is found within the gay community specifically. Courtenay-Quirk et al. (2006) have described how HIV stigma creates a division between HIV-negative gay men and gay men living with HIV (GMLWH) in that the former group stigmatizes and discriminates against the latter. This stigma may result from ignorance or archaic perceptions of HIV (e.g., viewing it as a “death sentence”) (Dong et al., 2020) and/or age and physical changes that are associated with HIV and ART use (Smit et al., 2012). HIV stigma may manifest itself in fears of partners living with HIV lying about their statuses and of infection, which lead many HIV-negative MSM to avoid the topic with sex partners (Courtenay–Quirk et al., 2006). Online, stigma may materialize itself in the use of language such as “drug/disease free” (DDF) or “clean” to refer to a negative serostatus, implying PLWH are “diseased” or “dirty” (Grov et al., 2013). Paradoxically, websites and applications can also humanize PLWH and decrease stigma through the incorporation of HIV status in profiles and HIV-related health information throughout the application itself (Liang et al., 2020).

HIV Disclosure Conceptual Model

To describe how stigma impacts HIV status disclosure to casual partners among MSMLWH, Bird and Voisin (2010) propose a conceptual model rooted in the work of Goffman (1963) (see **Figure 1**). The base of the model is stigma with the rationale that fear of experiencing HIV stigma is what is at the basis for status disclosure decisions (Bird & Voisin, 2010). As they describe, disclosure is “embedded within an interpersonal context rather than… a primarily individual, cognitive process," meaning there are both internal and external factors that influence MSMLWH's decisions to disclose (Bird & Voisin, 2010).

The model illustrates how five factors mediate the relationship between stigma and disclosure decisions: 1. beliefs about disclosure risks, 2. beliefs about privacy and responsibility, 3. partner characteristics and HIV status assessments and assumptions, 4. sexual setting, and 5. sexual risk behavior (Bird & Voisin, 2010). The first two are cognitive while the last three are contextual. For purposes of this model, "casual" partnerships are defined as a shorter-term sexual relations and/or those focused mostly on sexual activity encapsulated in anonymous encounters, one-night stands, and sex-only relationships (Bird & Voisin, 2010). Within these partnerships, expectations and communication are superficial and limited (Bird & Voisin, 2010). While described individually, each mediating construct is interrelated with the others and disclosure decisions cannot occur independently of any mediating construct (Bird & Voisin, 2010).

Beliefs About Disclosure Risks

The first of two cognitive mediators of HIV disclosure is beliefs about disclosure risks, defined as the costs associated with disclosing one's HIV status and the desire to avoid them (Bird & Voisin, 2010). These costs include: rejection and humiliation (Arnold et al., 2014; Gorbach et al., 2004; Race, 2010; Sullivan, 2005; Warner et al., 2018, 2019); stereotyping (Warner et al., 2018); verbal abuse or anger of a sex partner (Arnold et al., 2014; Sullivan, 2005; Warner et al., 2019); isolation (Zea et al., 2003); and general feelings of stigmatization (Bird et al., 2017; Courtenay–Quirk et al., 2006; Race, 2010; Shrestha et al., 2019; Tan et al., 2020; Warner et al., 2018, 2019). These costs may lead to a loss of sexual opportunities, which is exemplary of how living with HIV is seen as a spoiled or undesirable trait, making disclosure counterproductive to finding potential sexual partners (Goffman, 1963; Warner et al., 2019).

When disclosure does occur, MSMLWH may be met with ignorance resulting in them having to do the labor of educating potential sexual partners about HIV (Dong et al., 2020; Warner et al., 2018, 2019). Some enjoy the opportunity to educate others about HIV and even curate educational information on online profiles; however, this process may also kill the sexual mood and deter from finding sexual partners (Warner et al., 2019).

The desire to avoid these costs may result in non-disclosure to sexual partners; paradoxically, it may actually lead to disclosure, as a way to preempt these costs (Davis et al., 2006). For example, disclosure on application profile fields can be a passive way to filter out potentially discriminatory sexual partners in that they see the positive status indication and do not initiate a conversation (Warner et al., 2018, 2019). Disclosure may also be a way to reduce or avoid psychological and emotional distress and guilt from not disclosing (Klitzman, 1999; Sullivan, 2005).

Beliefs About Privacy and Responsibility

Some MSMLWH may feel as if their HIV diagnosis is no one else's business and that that is reason to not disclose (Gorbach et al., 2004). This may stem from fear about who has access to this aspect of their identity (including fears about secondary disclosure by sexual partners to their social network members) (Bird et al., 2017; Dong et al., 2020; Race, 2010; Sullivan, 2005; Warner et al., 2019). Disclosure conversations can feel exposing (Grov et al., 2013; Race, 2010); therefore, a certain level of trust may need to be established before disclosure occurs (Bird et al., 2017; Klitzman, 1999).

In order to keep control over who has knowledge of their HIV statuses, MSMLWH may use a variety of hints to suggest their positive serostatus without explicitly saying it (Warner et al., 2019). These hints can include leaving HIV-related items (e.g., medication bottles, magazines) around the house for sexual partners to see or verbal cues and coded language (e.g., mention of seeing a doctor) (Galletly & Pinkerton, 2006; Gorbach et al., 2004; Klitzman, 1999). MSMLWH may signal their positive serostatuses online as well through safer sex option indications (e.g., using “always” or “discuss” options to signal a potential inherent risk involved having sex with them), omitting HIV status altogether (with the thought that most seronegative users would indicate their statuses on their profiles), and/or waiting to disclose in chats on a person-by-person basis (Race, 2010; Warner et al., 2018, 2019).

For some MSMLWH, the desire to keep their HIV statuses private must be balanced with feelings of responsibility to disclose their statuses to sexual partners (Gorbach et al., 2004; O’Leary et al., 2013; Sullivan, 2005). These feelings of responsibility may be driven by the perceived expectation of disclosing (Warner et al., 2018); the thought that non-disclosure is “not fair” to sexual partners (Gorbach et al., 2004); or a sense of honesty (Race, 2010). Although responsibility to disclose may depend on relationship status, some MSMLWH may feel a “moral obligation” to disclose to (potential) primary partners (Gorbach et al., 2004; Klitzman, 1999) and give them “the opportunity to decide whether to take the risk, however small, entailed by engaging in […] sex” with them (Bayer, 1996). For many MSMLWH, disclosure may be a way for them to feel like they are protecting themselves and their partners (Davis et al., 2006; Gorbach et al., 2004; Race, 2010).

Not all MSMLWH may feel this sense of moral obligation or responsibility to disclose. One reason is the concept shared responsibility (Berkowitz & Callen, 1983) and that sexual partners always assume some level of risk when they decide to have sex with someone living with HIV, regardless of whether or not disclosure occurred (Klitzman, 1999; Race, 2012). As discussed later, having a low VL may decrease perceived HIV transmission risk, which also leads to non-disclosure (Gorbach et al., 2004; Race, 2010; Tan et al., 2020). Not disclosing but being undetectable may offer MSMLWH a feeling of being responsible in the sense of not transmitting HIV to sexual partners but not being responsible to actually disclose (Tan et al., 2020).

Partner Characteristics and HIV Status Assessments and Assumptions

Beyond the two cognitive factors impacting HIV status disclosure, there are three contextual factors. For Bird and Voisin (2010), partner characteristics and HIV status assessments and assumptions relate to what MSMLWH perceive their partners' HIV statuses to be. In casual sexual partnerships, MSMLWH are more likely to disclose with partners perceived to be living with HIV (Klitzman et al., 2007). Perception of partners' HIV serostatuses may rely on appearances, such as looking "healthy" versus "sick" (Hong et al., 2006; Parsons et al., 2006), or if they engage in "safe" or "unsafe" behaviors (e.g., drug use, condom use, discussion of safer sex options) (Gorbach et al., 2004; Klitzman, 1999; Parsons et al., 2006; Sullivan, 2005). Additional factors include knowledge of partners' lives (e.g., where they live, who their other partners are) and sexual behaviors (e.g., attendance of sex-on-premise venues) (Elwood, 1999; Gold et al., 1999; Parsons et al., 2006); normative assumptions (e.g., "all gay men are HIV-positive," "most people are negative") (Parsons et al., 2006); partners' HIV knowledge (Parsons et al., 2006); and/or partners' HIV disclosure patterns (Gorbach et al., 2004). Online, profile content (or lack thereof) may be used by some MSMLWH to discern users' HIV statuses when not explicitly indicated (Bird et al., 2017; Bird & Voisin, 2010; Santos-Hövener et al., 2014; Warner et al., 2019).

Sexual Settings

Sexual settings facilitate sexual partner communication and partnership types which, in turn, affect feasibility and possibility of disclosure (Bird & Voisin, 2010; O’Leary et al., 2013; Prestage et al., 2001; Santos-Hövener et al., 2014; Sullivan, 2005). Casual or anonymous partnerships may occur in settings such as bathhouses or other sex-on-premise venues, where there is a normative expectation of silence and that little, if any, personal or private information (including HIV status) is shared (Bird & Voisin, 2010; Elwood, 1999; Gorbach et al., 2004). The goals in these locations are to be efficient and anonymous (Elwood et al., 2003), so it is not necessarily feasible to negotiate safer sex practices and/or discuss serostatus (Elwood, 1999; Race, 2010). Attendance of settings used for anonymous sex may also be a way for some MSMLWH to rid themselves of expectations of status disclosure and emotional entanglement with sexual partners (Courtenay–Quirk et al., 2006). In other words, they do not feel responsible to disclose, given the setting (O’Leary et al., 2013). Further, some casual sex venues do not lend themselves to disclosure, given lack of privacy (including bathhouses, but also parks and bars) (Gorbach et al., 2004).

In anonymous or casual encounters (e.g., one-night stand), trust has not yet been built up between partners which could also lead to MSMLWH to not disclose their positive serostatus (Gorbach et al., 2004; Klitzman, 1999). Or, it could be that there is less of a feeling of obligation to disclose, given that level of casualness (Bird et al., 2017; Gorbach et al., 2004). These casual encounters can be juxtaposed with more intimate, personal connections in which emotional bonds, desires for intimacy and support, trust, and responsibility factor into the decision to disclose (Bird et al., 2017; Gorbach et al., 2004; Klitzman, 1999; Marcus et al., 2017; O’Leary et al., 2013; Serovich et al., 2018; Sullivan, 2005).

The internet and mobile applications also may or may not lend themselves to HIV status disclosure among MSMLWH. Offline, serostatus discussions can be more conversational, dynamic, and multifaceted while online, discussions are more indirect, standardized, and constricted by website/application design (Giles, 2020). As previously stated, websites and applications allow for self-disclosure of HIV status, and profile information can thus facilitate serostatus discussions (Grov et al., 2013; Liang et al., 2020; Warner et al., 2018, 2019). Some MSMLWH may feel it is not necessary to disclose their statuses in chats because it is already on their profiles (Davis et al., 2006; Grov et al., 2013).

The functionality of identifying as living with HIV, or “poz,” on websites or applications, when used in conjunction with filter options, may allow MSMLWH to find other “poz” or “poz-friendly” partners (Davis et al., 2006; Liang et al., 2020; Race, 2010; Warner et al., 2019). As aforementioned, openly identifying as living with HIV online may preempt potentially discriminating interactions (Liang et al., 2020; Race, 2010; Warner et al., 2018, 2019). Conversely, the ability to filter by HIV status may discourage open identification because of the potential to be excluded via filters from other users’ sexual partner selection (Liang et al., 2020). Additionally, the level of casualness with which online sexual partner seeking is treated and a general distrust of partners met online can discourage MSMLWH from disclosing their statuses, at least until they are sure that sex will occur (Grov et al., 2013).

Sexual Risk Behavior

Bird and Voisin (2010) consider sexual risk behavior as its own mediating construct, even though it affects other constructs such as privacy and responsibility and partner assessments and assumptions. Assessment of sexual risk is important in MSMLWH’s assessment of whether to disclose their positive serostatuses in that they evaluate whether or not they are putting their partners at risk for contracting HIV (Bird & Voisin, 2010). There are conflicting study results as to whether or not sexual practice risk level—excluding safer-sex practices—actually increases or decreases disclosure (Daskalopoulou et al., 2020; Dong et al., 2020; Gorbach et al., 2004; Klitzman et al., 2007; Serovich et al., 2018).

In the context of safer sex practices, it has been demonstrated that there is generally less of a perceived need to disclose because of the decreased or low risk of HIV transmission (Bird et al., 2017; Gorbach et al., 2004; Klitzman et al., 2007; Klitzman, 1999), although this relationship may not be statistically significant (Marks & Crepaz, 2001). For example, some MSMLWH may think condom use and/or strategic positioning (i.e., partner living with HIV as the receptive partner) adequately protect HIV-negative sexual partners, therefore negating the need to disclose (Gorbach et al., 2004; Klitzman, 1999; Van De Ven et al., 2002).

Having a UVL may be considered a safer sex practice (Race, 2010). HIV disclosure among MSMLWH is higher among those without UVLs on or off ART than those on ART with UVLs (Daskalopoulou et al., 2020; Rosser et al., 2008). This may demonstrate how having a UVL may make disclosure unnecessary, although results are conflicting as to whether or not being virally suppressed is significantly associated with (non-)disclosure (Okafor et al., 2020; Shrestha et al., 2019; Wilson et al., 2016). The thought may be that if there is no possibility of transmission, there is no need to disclose (Gorbach et al., 2004; Race, 2010; Tan et al., 2020), although UVLs may offer greater comfort and empowerment in disclosing (Dong et al., 2020; Grace et al., 2015).

The construct of sexual risk behavior also involves partners' actual (not perceived) HIV status. Knowledge or discussion of MSMLWH's partners' statuses facilitate disclosure of their own (Sullivan, 2005). Serostatus discussions may occur within larger safer sex negotiations

(Klitzman et al., 2007) in that disclosure leads to safer sex practices or disclosure informs the need and use of safer sex practices (e.g., condoms, strategic positioning) (Golden et al., 2004). In the context of CAI, disclosure is higher to positive partners than negative partners, with as many as 90% of MSMLWH disclosing their positive serostatus to other positive partners (Daskalopoulou et al., 2020; Serovich et al., 2018; Sullivan, 2005). This may be because there is less stigma perceived/experienced and better outcome expectations of what will happen upon disclosure (Sullivan, 2005).

Structural HIV Stigma, HIV Criminalization Laws, and Responsibility

With this discussion of Bird and Voisin's model, it is easy to see what factors play into the relationship between stigma and HIV status disclosure to casual sexual partners among MSMLWH. However, the authors focus on stigma primarily at individual and interpersonal levels. Focusing HIV stigma at these levels (i.e., through the lenses of Goffman (1963) and Link and Phelan (2001)) is useful but does not adequately examine how stigma is embedded within larger sociocultural, political, and economic structures (Parker & Aggleton, 2003). As noted by Parker and Aggleton (2003), stigma and discrimination operate "in relation to social and structural inequalities," not just through a reading of interpersonal difference, and are used "by concrete and identifiable social actors seeking to legitimize their own dominant status within existing structures of social inequality" (Parker & Aggleton, 2003). Therefore, there are ways in which HIV stigma is melded into societal structural frameworks, and these frameworks are thus leveraged to maintain power differentials through markers of stigma, creating a positive feedback loop (Parker & Aggleton, 2003).

One of the clearest examples of structural HIV stigma is HIV criminalization laws in the United States. First enacted in 1986 when knowledge about HIV was limited, these laws aim to directly regulate HIV risk behavior to prevent new infections (Blankenship et al., 2006; Centers for Disease Control and Prevention, 2020b; Lehman et al., 2014). Thirty-seven states have these laws on the books as of 2020 (Centers for Disease Control and Prevention, 2020b). Specifics of the laws vary state-by-state and in severity (misdemeanor versus felony) but in general, they fall into five broad categories outlined by the Centers for Disease Control and Prevention (2020b): 1. Laws specific to HIV intended to criminalize or control exposure behavior; 2. The same, but for sexually transmitted infections (STIs) including HIV; 3. Sentence enhancements specific to HIV which do not criminalize behaviors but increase the lengths of sentences; 4. The same as 3, but for STIs including HIV; and 5. Non-specific criminalization laws. Many of these laws apply to sexual conduct, sex work, and exposure to bodily fluids (e.g., spit) without requiring (proof of) transmission, disclosure, or intent to transmit (Galletly & Pinkerton, 2006; The Center for HIV Law & Policy, 2020).

One central issue with these laws is that consensual sexual intercourse is otherwise legal (The Center for HIV Law & Policy, 2020). Others issues are that many laws fail to account for safer sex interventions and criminalize behaviors demonstrated to have low/negligible risk of HIV transmission, such as biting (Galletly & Pinkerton, 2006; Lehman et al., 2014). Since 2014, at least five states have modernized their HIV criminalization laws to include defenses for those taking preventative measures (e.g., condom use, partner PrEP use, viral suppression) or to require transmission or intent to transmit, but most states have not modernized their laws from the time they were first enacted (Centers for Disease Control and Prevention, 2020b).

Directly regulating sexual HIV transmission behaviors is difficult because most behaviors these laws regulate are private, illegal, or both and therefore they cannot be implemented effectively (Blankenship et al., 2006). The existence of these laws also assumes widespread knowledge of them, but it is unknown just how many United States citizens, including PLWH, are aware of them, further limiting effectiveness (Lehman et al., 2014). Indeed, various studies have demonstrated how these laws are not effective, deter HIV testing, lower diagnosis rates, and exacerbate HIV transmission, all of which are counterproductive and contradict public health efforts (Blankenship et al., 2006; Galletly & Pinkerton, 2006; Sah et al., 2017; Sweeney et al., 2017).

Beyond their limited effectiveness, HIV criminalization laws reinforce structural level HIV stigma (Galletly & Pinkerton, 2006). PLWH having consensual sex is criminalized, while those without HIV (or believed to be negative) face no legal repercussions for the same act (Galletly & Pinkerton, 2006). This disparity constructs PLWH as dangerous and deviant, versus HIV-negative individuals who are seen as needing protection (Burris, 2002; Sobo, 1997). The effect of this is a moral assignment on those living with HIV and the construction of PLWH as a social threat, which establishes and maintains between-group differences (Burris, 2002; Galletly & Pinkerton, 2006; Link & Phelan, 2001; Sobo, 1997).

Because of the disclosure-based norm created by HIV criminalization laws, a disproportionate responsibility is placed on PLWH to keep HIV-negative individuals negative (Galletly & Pinkerton, 2006; Race, 2012). Such a responsibility extricates those without HIV from culpability regarding their own potential seroconversions and provides a sense of false security in what would normally be a shared risk activity (in the case of consensual sex) (Galletly & Pinkerton, 2006; Race, 2012). In this way, as outlined by Race (2012), HIV criminalization laws are performative: they accomplish their ostensible purpose of making PLWH responsible for HIV transmission but they do not actually prevent transmission and new infections. Framing disclosure as imperative also individualizes HIV prevention while failing to consider the social determinants of HIV transmission (Giles, 2020). Policy and legal interventions can be effective in ameliorating levels of HIV transmission and even HIV stigma, but they cannot be (re)producers of HIV stigma itself (Parker & Aggleton, 2003).

U=U and Reduction of Social HIV Stigma

Beyond relying on novel policy and legal interventions, there are other ways to decrease social HIV stigma, such as through increasing knowledge of the U=U concept (Rendina, Cienfuegos-Szalay, et al., 2020). A recent study by Rendina et al. (2020) demonstrated that sexual minority men living with HIV believe widespread knowledge of the campaign could decrease overall levels of social-level HIV stigma. Being undetectable is a symbolic counternarrative to the traditional focus on illness in HIV discourse (Tan et al., 2020). U=U has the capacity to change how living with HIV is framed, from being burdened by a disease to feeling empowered to take control over one's own sexual health and to educate others (Dong et al., 2020; Tan et al., 2020). Among other psychosocial benefits, being undetectable removes feelings of external (and internal) HIV stigma which, in serodiscordant relationships, can create a sense of equity and avoid the perception of "harming" sexual partners through shared responsibility (Dong et al., 2020; Eisinger et al., 2019; Prevention Access Campaign, 2020; Rendina, Cienfuegos-Szalay, et al., 2020; Tan et al., 2020).

Research Gap and Study Purpose

Even in the context of U=U, GMLWH continue to perform the labor of disclosing their HIV statuses to sexual partners, negotiating potential harms, and managing others' reactions to their disclosure (Dong et al., 2020), demonstrating how reducing HIV stigma-related inequities are potential (Rendina, Cienfuegos-Szalay, et al., 2020) but not yet a reality. Previous studies have examined HIV disclosure decisions among GMLWH qualitatively, some of which included a mix of virally suppressed and virally un-suppressed participants (Arnold et al., 2014; Bird et al., 2017; Courtenay–Quirk et al., 2006; Gorbach et al., 2004; Grace et al., 2015; Klitzman, 1999; Zea et al., 2003). Qualitative studies that have focused on disclosure specifically among undetectable gay men were either conducted before widespread knowledge of U=U (Dong et al., 2020) or outside of the United States (Tan et al., 2020), whose HIV criminalization laws differ from other countries'.

Additionally, there is a dearth of information on how HIV criminalization laws within the United States affect HIV disclosure decisions among undetectable GMLWH, even though these laws disproportionately target this population (Murillo, 2016). As previously mentioned, most states' HIV criminalization laws do not take into account viral suppression, even though it has been demonstrated to prevent onward transmission—which is what these laws are (ostensibly) designed to do; thus, undetectable GMLWH are still penalized (Race, 2012; The Center for HIV Law & Policy, 2020).

Guided by Bird and Voisin's (2010) conceptual model, this study seeks to examine undetectable gay men's experiences with HIV status disclosure to sexual partners in a time of wider U=U knowledge and acceptability. Additionally, this study will expand on Bird and Voisin's conceptual model through an incorporation of structural stigma by exploring how the United States' HIV criminalization laws affect disclosure decisions among undetectable GMLWH, if at all. It is important to challenge structures of inequality and the social practices that replicate structures of HIV stigma in order to release it of its power (Parker & Aggleton, 2003). This study will add to the nuanced understanding of the contexts and circumstances in which HIV status disclosure (does not) occur, providing implications for individual, interpersonal, and structural level interventions and policies that could serve to combat HIV stigma.

Chapter 3: Student Contribution and Methodology

Student Contribution

This project was conceptualized by the PI and refined under the guidance of his thesis committee members. The topic of undetectable GMLWH's status disclosure to sexual partners was born out of his time working at a clinical post-exposure prophylaxis (PEP) program, where a number of his patients presented for PEP upon learning of their partners' undetectable statuses. The PI desired to explore why undetectable gay men decide to disclose or not disclose their statuses given the non-existent risk for HIV transmission (Eisinger et al., 2019; Rodger et al., 2019). A qualitative design was planned from the onset of the study with the exact methods planned through conversations with Dr. Elizabeth Walker. Data collection, management, and analysis as well as writing and figures were developed by the PI with the exception of Bird and Voisin's (2010) conceptual model.

Methodology

Study Design

This study was conducted using in-depth, semi-structured interviews lasting approximately one hour each in order to understand the lived experiences of its participants in their own words (Hennink et al., 2011).

Study Sample and Recruitment

Participants for this study were eligible if they were over 18 years of age and self-identified as gay men with undetectable viral loads. Gay men specifically were chosen as the target population because of the noted impact of HIV stigma on the gay community specifically (Courtenay–Quirk et al., 2006; Smit et al., 2012). Potential participants were excluded if they were currently in a sexually monogamous relationship lasting at least three years, were unable to provide informed consent, did not primarily reside in the United States, and/or could not complete the study in English.

A combination of purposive, convenience, and snowball sampling was used in order to reach the widest pool of potential participants given the relatively specific target population. Informational study fliers with a link and QR code to the study eligibility survey were provided to contacts at two Atlanta hospitals' infectious disease clinics to disseminate to clinic patients. Wording on the flier was revised through feedback from one clinic's staff member. A version of this flier was posted on the PI's personal Facebook, Twitter, and Instagram pages. In both in-person and online recruitment, potential participants were invited to fill out a Google Forms eligibility survey and provide their contact information. The PI emailed all survey respondents to inform them of their eligibility statuses and attached a flier for them to share with friends. Eligible respondents were provided a list of dates and times for interviews and they selected their preference. No financial incentive was provided.

Measures

An interview guide was developed, informed by existing literature. It was then revised through discussions with thesis committee members and test-piloted with a member of the study's target demographic. The guide was also modified over the course of interviews to improve question quality and flow. The final interview guide (see **Appendix A**) contained 28 questions with probes across with four main domains: 1. Participant demographics and background living with HIV (e.g., "What does being undetectable mean to you?"); 2. Sexual partner selection and HIV disclosure decisions (e.g., "How does being undetectable specifically play into your decision to disclose your HIV status, if at all?"); 3. HIV disclosure moral and ethical considerations (e.g., "Do you think it is necessary to disclose your HIV status to a sexual partner if you are undetectable? Why or why not?"); and 4. HIV criminalization laws (e.g., "Do HIV criminalization laws play a role in (not) disclosing your HIV status to sexual partners? Why or why not?"). With the inclusion of introductory and closing sections, this structure was intended to establish rapport and ease in to the conversation, discuss more sensitive topics, and then "fade out," ending the interview on a broader note (Hennink et al., 2011).

Procedures

Semi-structured interviews were scheduled and conducted during August 2020 by the PI and lasted between 50 and 70 minutes each. All interviews were conducted and recorded over encrypted, password-protected Zoom video calls due to participant geographic distance from the PI and/or COVID-19 safety concerns. Prior to commencing each interview, the PI read the consent form to the participants, and participants provided oral informed consent. Each participant received a copy of their consent form, and the PI answered all additional questions prior to the start of each interview.

Upon completion of recorded video calls, Zoom automatically downloads visual and audio files to the call's host's device. All video recordings were immediately and permanently deleted from the PI's computer and audio recordings were uploaded to an encrypted Box drive. Audio recordings were transcribed verbatim through Otter.ai and manually checked for accuracy. During the transcription process, all identifiable information was removed to protect participant privacy and confidentiality. Audio recordings were permanently deleted once the study was complete.

Analysis

All transcripts were read through once for familiarization while checking transcriptions for accuracy. Segments were then coded in MAXQDA 20 using inductive and deductive codes compiled in a codebook (see **Appendix B**). Inductive codes were identified through patterns found in preliminary readings of the transcripts (Hennink et al., 2011) and included “U=U,” “own diagnosis,” and “language distinction.” Deductive codes were identified using Bird and Voisin’s conceptual model and included “disclosure risks,” “privacy,” and “responsibility.” The PI and a second coder coded five initial transcripts to assess intercoder reliability through comparing coded segments and coming to a consensus. Codes and the codebook were then refined, and these refined codes were re-applied to the initial transcripts before the PI coded the remaining transcripts.

Thematic analysis was used to analyze study data (Braun & Clarke, 2006). After line-by-line coding was completed, the PI wrote memos describing patterns in the coded segments across transcripts. Initial themes were identified from the memos and expanded upon through visual mapping. These themes were revised through an iterative process, which involved feedback from the thesis committee to establish the final, concrete themes. Verbatim support for thick descriptions was used during the analysis process, which helped guide the process and limit biases as themes were identified and summarized (Noble and Smith 2015).

Ethical Considerations

Institutional Review Board (IRB) approval was obtained through the Emory University IRB (STUDY00001228). During the eligibility screening process, the PI informed all respondents that this study is being used for his master’s thesis. All final participants were reminded again during the informed consent process. The eligibility screening survey stressed to respondents that if they were recruited through a medical center, their care there would not be impacted by their participation in this study. All participants were also made aware during the consent process that they could skip any question(s) with which they did not feel comfortable or stop their interviews at any time. All completed consent forms were emailed to participants upon interview completion. Confidentiality was stressed to participants throughout all steps of the recruitment and interview process. The PI let participants know that they would receive a version of the final product of the study, either the full thesis or completed manuscript.

Chapter 4: Manuscript

‘It’s a very gray, very messy area’: Factors influencing undetectable gay men’s HIV status disclosure to sexual partners

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‘It’s a very gray, very messy area’: Factors influencing undetectable gay men’s HIV status disclosure to sexual partners

HIV disclosure to sexual partners remains a multifaceted yet stigmatized process. While previous qualitative literature has examined this process, there is a dearth of information on this topic among gay men specifically, a group disproportionately affected by HIV in the United States. Additionally, the concept of ‘undetectable equals untransmittable’ (U=U) has raised ethical and moral concerns about the obligation and necessity to disclose and using internet applications to seek sex partners has modified disclosure practices. Using thematic analysis of data collected during a period of expanded U=U knowledge, this study explores the cognitive, contextual, interpersonal, and structural factors impacting undetectable gay men’s HIV status disclosure decisions to sexual partners. In-depth interviews were conducted with 20 gay men with undetectable viral loads. The main themes included ‘sense of obligation,’ ‘situational disclosure,’ and ‘partners’ responsibility in the disclosure process.’ Consistent with previous literature, participants balanced the aforementioned factors to inform their disclosure decisions, and disclosure patterns varied across participants. This study introduces a more focused discussion, as well as depth and nuance, to the study topics while presenting considerations for the future.

Keywords: HIV, disclosure, undetectable, stigma

Introduction

Men who have sex with men (MSM) are disproportionately affected by HIV in the United States. While new diagnoses in this population are decreasing (Jeffries et al., 2020), new infections nationally are still concentrated in MSM (Centers for Disease Control and Prevention (CDC) 2020a). In 2018, it was estimated that 67.3% of all newly diagnosed MSM were virally suppressed within six months of diagnosis, an increase from 51.1% in 2014 (Centers for Disease Control and Prevention, 2020d).

The HIV viral load (VL) is the most important laboratory test for clinically monitoring people living with HIV in HIV care. The VL refers to the amount of circulating HIV virus in the blood (copies of HIV RNA per millilitre of blood). It is possible to reduce one's VL to levels undetected by standard tests, known as "undetectable" (CDC, 2020c). When a person's VL is undetectable, it is not possible for them to sexually transmit HIV (Bavinton et al. 2018; CDC 2020c; Eisinger, Dieffenbach, and Fauci 2019; Rodger et al. 2019; Vernazza et al. 2008). This concept is commonly referred to as "undetectable equals untransmittable," or "U=U" (Prevention Access Campaign, 2020).

HIV transmission risk is also reduced through methods other than being undetectable, such as through discussing partner serostatus. When sexual partners have accurate information about their partners' HIV statuses, they can better assess and navigate potential transmission risks (Santos-Hövener et al., 2014; Sullivan, 2005). It is estimated that between 39% to 91% of MSM living with HIV (MSMLWH) disclose their status to sexual partners (Bingman et al., 2001; Durham et al., 2013; Okafor et al., 2020; Serovich et al., 2018; Sullivan, 2005) and that approximately 57% of MSMLWH tend to or strongly expect to disclose before having sex with a new sexual partner (Daskalopoulou et al., 2020).

Stigma avoidance is a major driver of HIV status disclosure (Bird & Voisin, 2010). Stigma occurs when one holds a "tainted" attribute that is labelled as different and undesirable, resulting in between-group differences and status loss (Goffman, 1963; Link & Phelan, 2001). HIV is stigmatized because the it is perceived as contagious, voluntarily contracted/avoidable, fatal (if untreated), and associated with taboo behaviors such as sex and drug use (Bird & Voisin, 2010; Herek, 1999). HIV stigma has been seen as a dividing factor within the gay community specifically, creating a schism between those living with HIV and those not (Courtenay–Quirk et al., 2006).

Based in stigma theory, Bird and Voisin (2010) proposed a model that describes how stigma affects MSMLWH's decisions to disclose their HIV statuses to casual sexual partners. They define "casual" sexual partnerships as those that are shorter-term and sex-focused with limited, superficial communication and expectations (Bird & Voisin, 2010). According to the model, decisions to disclose serostatus are based on two cognitive and three contextual factors that mediate the pathway between stigma and disclosure decisions (Bird & Voisin, 2010). The first cognitive factor is beliefs about disclosure risks, or the costs believed to be associated with disclosure (e.g., rejection, abuse, loss of sexual opportunities) and the desire to avoid them (Davis et al., 2006; Klitzman, 1999; Sullivan, 2005; Warner et al., 2018, 2019). The second cognitive factor is beliefs about privacy and responsibility, referring to the degree to which MSMLWH believe their HIV status should be shared with casual sexual partners and the sense of morality or ethics that drives this (Bird & Voisin, 2010).

The first contextual factor in the model is partner characteristics and HIV status assessments and assumptions, defined as the perceived HIV status of sexual partners based on appearance, HIV risk behaviour patterns, HIV-related knowledge, or online profile content (Bird et al., 2017; Bird & Voisin, 2010; Warner et al., 2019). The second contextual factor is sexual setting. The location of sexual activity, such as sex-on-premise venues (e.g., bathhouses), may limit expectations of HIV status disclosure based on setting characteristics or emotional proximity to partners (Klitzman 1999; Gorbach et al. 2004; Bird, Eversman, and Voisin 2017). This can be juxtaposed to sexual relationships between intimate partners where there is an increased level of perceived responsibility to disclose (Gorbach et al., 2004; Klitzman, 1999; Sullivan, 2005). Finally, sexual risk behaviour mediates the relationship between HIV stigma and HIV status disclosure. Sexual risk behaviour factors that can affect disclosure decisions include type of sex (i.e., oral versus anal) non-biomedical safer sex practices as well as the use of ART for viral suppression (Daskalopoulou et al., 2020; Gorbach et al., 2004; Okafor et al., 2020). While the authors describe these five mediating factors separately, they state that the factors cannot be considered independent of one another given how closely they are intertwined (Bird & Voisin, 2010).

Bird and Voisin's model, while useful, focuses on HIV stigma at individual and interpersonal levels. HIV stigma also operates at the structural level where societal frameworks can be used to maintain differences in power (Parker & Aggleton, 2003). For example, the United States' HIV criminalization laws were first enacted in 1986 to prevent new HIV infections and as of 2020, 37 states have official HIV criminalization laws (Blankenship et al., 2006; Centers for Disease Control and Prevention, 2020b; Lehman et al., 2014). Most states' HIV criminalization laws criminalize behaviours that carry a low or non-existent risk of HIV transmission and/or do not take into account safer sex measures (including condom use, partner pre-exposure prophylaxis use, and viral suppression) (Centers for Disease Control and Prevention, 2020b; Galletly & Pinkerton, 2006; Lehman et al., 2014). HIV criminalization laws reinforce HIV stigma by criminalizing PLWH for behaviour that would otherwise be legal (i.e., consensual sex) for HIV-negative people, therefore constructing PLWH as dangerous threats. (Burris, 2002; Galletly & Pinkerton, 2006; Link & Phelan, 2001; Sobo, 1997). This (re)produces between-group differences between those living with HIV and those not and places a disproportionate burden on PLWH for others' serostatuses (Galletly & Pinkerton, 2006; Race, 2012). Additionally, these laws stigmatize gay men because of the disproportionate prevalence of HIV in this population.

Reducing widespread HIV stigma at social and structural levels may be possible through awareness campaigns such as the U=U campaign (Prevention Access Campaign, 2020; Rendina, Cienfuegos-Szalay, et al., 2020). U=U reframes living with HIV through a lens of empowerment and control over one's health (Dong et al., 2020; Tan et al., 2020). The perception of "harming" sexual partners is removed and the concept of shared responsibility is reinforced (Dong et al., 2020; Eisinger et al., 2019; Prevention Access Campaign, 2020; Rendina, Cienfuegos-Szalay, et al., 2020; Tan et al., 2020).

Even in the era of U=U, gay men living with HIV (GMLWH) are still tasked with disclosing their statuses and managing sexual partners' reactions (Dong et al., 2020). Numerous qualitative studies have explored GMLWH's HIV status disclosure to sexual partners, but most have not focused on those who are virally suppressed (Arnold et al., 2014; Bird et al., 2017; Courtenay–Quirk et al., 2006; Gorbach et al., 2004; Klitzman, 1999; Zea et al., 2003). Additionally, studies focusing on GMLWH who are virally suppressed were conducted outside of the United States (Tan et al., 2020) or before widespread U=U knowledge (Dong et al., 2020). Further, even though HIV criminalization laws apply to those who are virally suppressed in most states, it is not known how these laws influence status disclosure to casual sexual partners among GMLWH who are undetectable.

This study seeks to answer the question, "What are the factors influencing undetectable gay men's HIV status disclosure decisions to sexual partners?" The purpose of this study is to provide a greater understanding into the decision(s) to disclose; the factors that contribute to that decision; and undetectable GMLWH's ethical concerns on this topic, guided by the conceptual model presented by Bird and Voisin (2010). In doing so, a more nuanced understanding of this topic will emerge with implications for individual, interpersonal, and structural HIV prevention and stigma reduction interventions.

Materials and Methods

Study Design

This qualitative study was conducted using in-depth, semi-structured interviews in order to understand participants' lived experiences (Hennink et al., 2011).

Study Sample and Recruitment

Participants were eligible if they were over 18 years of age and self-identified as gay men with undetectable viral loads. Potential participants were excluded if they were currently in a sexually monogamous relationship lasting at least three years, were unable to provide informed consent, did not primarily reside in the United States, and/or could not complete the study in English.

A combination of purposive, convenience, and snowball sampling was used to reach a wide pool of potential participants. Informational study fliers with a link and QR code to the study eligibility survey were provided to a physicians at two Atlanta hospitals' infectious disease clinics to disseminate to clinic patients. A digital flier was posted on Facebook, Twitter, and Instagram. All potential participants were invited to fill out a Google Forms eligibility survey and provide their contact information. We emailed all survey respondents to inform them of their eligibility statuses and attached a flier to share with friends. Eligible respondents were provided a list of dates and times for interviews and they selected their preference. No financial incentive was provided.

Measures

An interview guide was developed, informed by existing literature, Bird and Voisin's model (2010), and discussions with subject matter experts. The guide contained 28 questions with probes across with four main domains: Participant demographics and background living with

HIV; Sexual partner selection and HIV disclosure decisions; HIV disclosure moral and ethical considerations; and HIV criminalization laws.

Procedures

Semi-structured interviews were conducted during August 2020 and lasted between 50 and 70 minutes each. Interviews were conducted and recorded over encrypted, password-protected Zoom video calls due to participant geographic distance and/or COVID-19 safety concerns.

Upon completion of recorded video calls, Zoom automatically downloads visual and audio files to the call's host's device. All video recordings were immediately and permanently deleted from the researchers' computers and audio recordings were uploaded to an encrypted Box drive. Audio recordings were transcribed verbatim through Otter.ai and manually checked for accuracy. During the transcription process, all identifiable information was removed to protect participant privacy and confidentiality.

Analysis

All transcripts were read through for familiarization while checking for accuracy. Segments were then coded in MAXQDA 20 using inductive and deductive codes compiled in a codebook. Inductive codes were identified through patterns found in preliminary readings of the transcripts (Hennink et al., 2011) and included "U=U," "own diagnosis," and "language distinction." Deductive codes were identified using Bird and Voisin's conceptual model and included "disclosure risks," "privacy," and "responsibility." Five initial transcripts were double-coded line-by-line. Coded segments were compared, and discrepancies were discussed to reach consensus. Codes and the codebook were then refined, and these refined codes were re-applied to the initial transcripts before we coded the remaining transcripts line-by-line.

Thematic analysis was used to analyse study data (Braun & Clarke, 2006). After line-by-line coding was completed, we wrote memos describing patterns in the coded segments across transcripts. Initial themes were identified from the memos and expanded upon through visual mapping. These themes were revised through an iterative discussion process. Verbatim support for thick descriptions was used during the analysis process, which helped guide the process and limit biases as themes were identified and summarized (Noble & Smith, 2015).

Ethical Considerations

Institutional Review Board approval was obtained through the Emory University IRB (STUDY00001228). All participants completed verbal informed consent prior to beginning the interview.

Results

A total of 20 individuals participated in this study. Participant ages ranged from 23 to 62 and years since HIV diagnosis ranged from 2 to 34. Geographically, participants were located in 11 states across all regions of the contiguous United States, and in Washington, D.C. The following themes were identified as factors that influenced disclosure: sense of obligation, situational disclosure, and partners’ responsibility in the disclosure process.

Sense of Obligation

The sense of obligation theme encapsulated many of the internal or cognitive aspects related to disclosure, specifically in how participants felt there was a moral or ethical obligation to disclose.

Disclosure because of consent

Participants discussed the topic of consent and the ethics of allowing partners to consent to having sex with someone living with HIV. They also discussed how being undetectable modified the necessity of consent. A positive serostatus was seen by a number of participants as something that sexual partners deserved to know about them prior to engaging in sexual activity. If disclosure did not occur, participants’ sexual partners could not consent to sleeping with someone living with HIV. Disclosure, for some, allowed partners to make the most informed choice as to whether or not to engage in sexual activity with someone living with HIV, regardless of undetectable status. As one participant noted,

> …it's not cool [not to disclose]… I don't think I'd necessarily feel guilt knowing that I'm still doing what I can to maintain my partner's sexual safety. But I also fully acknowledge and understand it's the right for them to make that choice, whether it's an informed choice or not. So ethically, I still have to disclose [39-years-old; 7 years since diagnosis].

Disclosure and consent were particularly relevant when discussing prospects for longer-term relationships. Disclosing before sex or very soon into the sexual/romantic relationship allowed sexual partners to learn about participants' HIV status before becoming too emotionally invested, as to not "*waste anyone's time*" or suffer heartbreak if rejection occurred later.

A sense of disclosure being obligatory and an issue of consent also derived from some participants' own experiences with seroconversion. If participants contracted HIV from a partner who did not disclose their status before sex, they frequently expressed not wanting to do this to somebody else. One participant who, when asked if disclosure was necessary being undetectable, said "*I personally… was not given that choice. So at least I want to give others that choice. Broadly, for anyone who's HIV-positive, I think it brings up a conversation that needs to be had*" [43-years-old; 19 years since diagnosis]. Disclosing, in this sense, was seen as a way to offer their sexual partners the chance to consent to sleeping with someone living with HIV, which they themselves were not given.

Finally, a worry among some participants that being undetectable is not 100% effective in preventing onward transmission raised issues of consent. They suggested transmission was highly unlikely but theoretically possible, so this "*tiny bit of chance*" made disclosure obligatory insofar as sexual partners could decide to take the hypothetical risk of engaging in intercourse with them.

U=U pre-empts obligation

Conversely to disclosing because of consent, a number of participants mentioned how disclosure to sexual partners was not obligatory because of the inability to transmit HIV once undetectable. Much of the reasoning to withhold disclosure was for privacy and to avoid stigmatizing interactions while still keeping partners safe. In relation to privacy, one participant said

> I feel like maybe, selfishly… it's not really that person's business because you're undetectable... if I want to make it your business, I guess, sure. Like it can be. But I… just don't see how there has to be a conversation had, if the person who's undetectable knows they're undetectable, knows they can't transmit [23-years-old; 4 years since diagnosis].

HIV, in this regard, was seen as private information that, because of the inability to transmit, could be selectively shared.

The types of stigmatizing interactions participants avoided by not disclosing their HIV status included sexual rejection, judgment, stereotyping, and abuse. One participant said he did not believe he was obliged to disclose his status because, "*...I know that I'm undetectable so [transmission] shouldn't be a problem… also because when I used to tell people all the time, of course, my chances to have sex reduced*" [32-years-old; 9 years since diagnosis]. Like others, this participant used non-disclosure in a self-protective fashion while avoiding transmission risk.

Ethical but not necessary

Situated between the beliefs that disclosure while undetectable was obligatory for consent purposes and that disclosure was not because of the inability to transmit HIV was the idea that disclosure was ethical but not necessary. Disclosing one's HIV status was seen as the "*right thing*" to do because the virus was still in their bodies, and that that could be something that would change sexual partners' willingness to have sex with them. One participant explained that

> …it's not necessary since, I mean, you can't pass it on. So basically, for the partner… there's no difference whether you're undetectable or whether you're negative… [F]or me

> personally, it's necessary because I feel like… I was doing something wrong if I didn't disclose it… not disclosing it, I feel like would be unfair since… they're thinking that you're negative but you're actually not negative, and that might change something for them, which means they might not actually consent… And they should be given that choice [24-years-old; 6 years since diagnosis].

The participants who expressed this idea noted that transmission is not possible, so their partners' "*sexual safety*" was "*maintained*"; however, their partners deserved to know about their HIV statuses anyway because it could affect them from a non-health standpoint.

Other participants related disclosure directly to avoiding feelings of guilt in not disclosing to their sexual partners, even though they do not feel it is technically necessary. Non-disclosure resulted in an internal struggle for some participants that was diminished through disclosure. One participant said

> Morally, I like to do things the right way, you know, and take the high road… sometimes I feel shitty about [not disclosing] afterwards, even though, you know, it's zero chance. And I don't like to feel shitty, you know?... I took something away from somebody [48-years-old; 20 years since diagnosis].

Disclosing, for him and others, was the ethical choice as a matter of internal peace, if disclosure was not necessary.

Situational Disclosure

Many participants described how their disclosure practices varied depending on contextual factors, such as where they were, with whom they were with, what type of relationship they had with individual sexual partners, and how far into these relationships they were. All of these factors' impacts on disclosure were mediated by participants' undetectable status.

Emotional proximity to partner

One of the most frequently discussed situational factors participants considered when deciding to disclose their HIV status to sexual partners was their emotional proximity, or the strength and longevity of these relationships. Participants described disclosing less frequently to one-time sexual partners (i.e., "hookups") than to sexual partners with whom there was potential to have repeat interactions or more serious romantic connections. One participant said that

> if it's a relationship-based conversation… disclosure is important because that's going to be something that is going to continue to affect your life… But in the quick hookup scenario, it's of very little importance to the grand scheme of things, [being] undetectable… It's a very gray, very messy area and how we define things and what we say is a-okay and what's not and how to go from that… [36-years-old, 18 years since diagnosis].

While disclosure decisions were based on the impact of HIV on the long-term relationship, or lack thereof, the mention of disclosure patterns being "*gray*" and "*messy*" illustrates how these patterns can vary person-to-person and relationship-to-relationship.

Emotional proximity also affected disclosure as it related to the concept of authenticity. Many participants saw sharing a positive serostatus with partners of greater emotional proximity as giving them the full picture of who they are. This was true for potential romantic relationships, as well as sexual partners who were repeats or who were friends of friends. When speaking about this latter group of sexual partners, one participant described how:

> …they're gonna know me, like, beyond that [one hookup], right? As a person, right? And so I think there's, there's elements of like, authenticity to that… I think that bubble of authenticity to form relationships is important. If there's no forming of that, really, then that's the part for me that I'm like, I can't really figure out exactly the compelling reason [to disclose] [Participant 10, age 36, 10 years since diagnosis].

Therefore, authenticity was tied to relationship-building. The fact that an ongoing connection could be established with certain partners was the "*compelling reason*" to disclose.

Location of sex

The location where sex occurred—both in reference to geographic location and type of venue—was also a contextual factor in participants deciding to disclose. Geographic location modified disclosure practices specifically when participants were seeking sex in locations other than their locations of residence. In cities where the level of HIV education or knowledge was perceived as low, some participants were less likely to disclose. The first reason for this was to avoid having to educate others about HIV, which for some killed the sexual mood and was thus antithetical to finding sexual partners. Speaking from previous experience, one participant said

> … if I'm in an area where the education is not very great… what I ended up finding is that, you know, hot and heavy chat that leads to potential meetup, thus disclosure, then becomes me giving them a lesson… which then of course guts the mood and nothing ends up happening [39-years-old; 7 years since diagnosis].

The second reason was worry about the potential for negative partner reactions which could lead to abuse or threats of HIV criminalization. Some participants thought potential sexual partners would not fully understand what being undetectable meant and would think that there was a transmission risk. One participant described disclosing in cities besides his own as "*high risk situation[s]*" because he did not feel the same sense of safety that he does in his hometown, where HIV knowledge was higher and there was less of a perceived risk of HIV criminalization threats.

Location of sex also affected disclosure. Disclosure was described as almost non-existent at sex-on-premise venues (e.g., bathhouses). Participants cited a number of reasons for this, including being in the heat of the moment, not knowing their sexual partners, alcohol or drug use, and the atmosphere not being conducive to disclosure. Regarding this last reason, one participant said:

> I've gone to a bathhouse and do you think I'm telling people at a bathhouse? No… I don't think it's the right moment… you're there for a purpose. I think we are long enough in terms of education that we should know going to a sex club and what risks that brings… It's like, you don't talk, you don't do anything. It's just you're there to kind of do your thing and then leave. And that's the whole purpose of it… I just think the mentality of going to a sex club or a bathhouse is different than a hookup [43-years-old; 19 years since diagnosis].

Therefore, not only did the purpose of having sex at sex-on-premise venues pre-empt disclosure, but it was also noticeably different than a hookup. A number of participants who said they always disclose mentioned how this pattern changed at these venues because serostatus conversations were not appropriate and meeting sexual partners for immediate sex superseded disclosure. This break in pattern was seen as "*kind of okay*" because being undetectable meant there was no transmission risk.

Sexual activity HIV risk level

Disclosure was also situational dependent upon the HIV risk level of the sexual activity in which participants engaged with their partners. Many participants discussed HIV risk outside of the U=U concept, even if they disclosed to their sexual partners that they were undetectable. One major distinction was made in HIV risk between oral sex and anal sex. The increased level of risk associated with anal sex made disclosure important to many participants. In talking about this difference, one participant said

> And like, if we're just gonna jerk off together or, or just like, foreplay or whatever like… exchange oral sex, like, fine, like not a big deal. But if we're gonna like, actually do anal then yeah… I think [HIV status is] probably a conversation that should be had [23-years-old; 4 years since diagnosis].

Some participants noted that they disclose with anal sex specifically when engaging in condomless sex, as that is type of sex that carries the greatest HIV transmission risk. Because of this, a handful of participants tied this back to issues of ethics and consent, in that because of the HIV risk (despite being undetectable), disclosing was ethical so that sexual partners could make their own decisions to take the hypothetical risk or not.

Topic of conversation on applications

The use of sex-centred applications was also discussed as a way in which disclosure was made situational. There were varying patterns of disclosure on applications across participants: some did not include their status on their profiles but disclosed through chats; some had their status on their profiles and disclosed in chats; and some had it in their profile but did not (normally) disclose through chats. Disclosure through chats was usually prompted by the discussion of sexual preferences (e.g., sexual position, fetishes), safer sex practices, and/or sexual health. In these types of conversations, HIV status was seen as relevant to the topic, which made participants feel comfortable disclosing or that it was necessary based on HIV risk associated with planned sexual acts.

Sometimes, participants delayed discussing HIV status until they had confirmation that sex would occur. This pattern was prevalent in participants who both did and did not include their HIV status in their profiles. One participant who previously did not include his status in his profile explained:

> …why would I want people to know [my status] if there's no possibility that we can hookup because I can't host and they can't host? Or our schedules never match… So I would wait until it's like, okay, we're gonna hook up. We've made a plan. Here's my status. Does that affect the plan? [32-years-old, 9 years since diagnosis].

Delaying disclosing through chats was a way for participants to control who had access to their status, ensuring that this knowledge was limited to a certain group of people. Not disclosing in app profiles was also used to avoid potential stigmatizing messages from other application users.

Many participants who did include their statuses on their profiles used it as a proxy for disclosure through chat. Participants thought disclosure on their profiles was "*easier*" and a way to "*eliminate that awkward conversation*" while still providing the same information they would through a chat. This allowed potential sexual partners to decide if they wanted to have sex with them without actually discussing it.

Including HIV status in profiles was also a method to avoid stigmatizing interactions with other application users or feelings of rejection. Including status in profiles was beneficial because "*…that way, before they even message me… I rather just have it up there so they can read all about it right there and then make that decision [to message me] from there*" [30-years-old; 2

years since diagnosis]. Including statuses on profiles allowed application users to reject participants without them knowing, which was seen as healthier for participants’ emotional well-being and another way to avoid getting to invested in a user who might reject them later.

Including their HIV status in their profiles did not always preclude participants from discussing it through chats. Bringing up serostatus through chats was a way to ensure potential partners had information about their HIV status, since “*people don’t always read profiles*”. Confirming partners’ knowledge of their serostatus was a way for participants to know that these individuals were consenting to having sex with someone living with HIV. Disclosing early through chats was also a way to make sure potential rejection occurred early, before getting too invested in the other person.

Partners’ Responsibility in the Disclosure Process

The interpersonal factors that impacted participants’ HIV disclosure decisions centred on sexual partners’ responsibility and their role in the disclosure process.

Partners should ask (if they want to know)

Many participants felt that, although they were the ones living with HIV and therefore ended up initiating disclosure most of the time, sexual partners should ask about their status if they want to know the answer. Some participants described how their partners did not ask because they expected that the participant would disclose. This led to some partners finding out about participants’ serostatus after sex and wondering why they were not informed beforehand. Especially in the context of being undetectable, some participants felt their sexual partners had a greater responsibility to ask about HIV status because the risk of HIV transmission was non-existent. One participant said

> I would say since [I’m] undetectable, it should be up to the other person to ask the question… you don’t necessarily have to [disclose] since the danger isn’t there so to speak, right? So if the other person wants to ask the question, it should be up to them to ask the

> question versus me to disclose it because I'll ask the questions if I want to know an answer… [48-years-old; 20 years since diagnosis].

A common reason for describing why partners should ask about HIV status if they want to know was that their sexual partners are responsible for their own sexual health. Therefore, a number of participants disclosed if asked but did not offer disclosure up front. Participants described that partners assumed a level of risk when entering consensual sexual encounters with or without disclosure. Not asking, for some participants, signalled that partners were okay with assuming that risk, even if it was non-existent because of their undetectable status.

Shared responsibility, in theory

Participants mentioned that the responsibility for HIV disclosure and, more broadly, serostatus discussions should be shared because sex was between consenting adults. Therefore, each partner had a responsibility to look after themselves and their partners. Responsibility for disclosure—or asking—was a mutual partnership, rather than placing the onus on one person. However, many participants felt that undue burden was placed on them to disclosure, rather than engaging in a mutual partnership. In discussing this, one participant said

> …if I'm talking about a perfect world, it's both parties' responsibility to have that conversation to talk about [HIV status]. And you protect yourself and it's the other person's responsibility to protect themselves. But I don't think… with a lot of gay guys, that's the way it works. I think the expectation is that the HIV-positive individual has to disclose. I think the onus and responsibility is on the HIV-positive person. And I think that's a general societal thing, too [59-years-old; 34 years since diagnosis].

He and other participants described how, because HIV is seen as dangerous or as carrying a risk to sexual partners—regardless of undetectable status—the person living with HIV is seen as the one who should initiate disclosure.

Many participants described how HIV criminalization laws codified the onus of disclosure on the partner living with HIV. This imbalance affected the concept of shared responsibility in that the laws “*give… safety to a person that might feel they were victimized by not being informed*”, despite them not accepting responsibility to ask.

The fear of criminalization played into some participants’ decisions to disclose. Even though they expressed how serostatus discussions were shared responsibility in theory, the reality was that the risk of a litigious partner was great enough to warrant disclosing without being prompted. Some participants understood that these laws were meant to encourage disclosure; however, disclosure came from a place of fear (rather than responsibility), despite being undetectable. The “*biggest concern*” about (non-)disclosure while being undetectable for some participants was that “*criminalization laws are still on the books*”. However, these laws made some participants less willing to disclose because they are undetectable:

> I don’t want to get a ticket for trying to have sex with someone knowing that… I’m undetectable… [that] doesn’t make sense. Like I shouldn’t have to worry about going to jail if I know I’m not gonna transmit my virus to anyone. Just because we are both consenting adults, you know what I mean? [23-years-old; 4 years since diagnosis].

Participants framed non-disclosure as a way to avoid HIV criminalization-related disclosure risks while keeping their partners HIV-negative.

The fact that criminalization was possible based on serostatus demonstrated to some participants how the legal system thinks of people living with HIV as “*biological dangers*”. Therefore, an alternative perceived purpose of these laws was to stigmatize PLWH and perpetuate “*a toxic narrative about people who are positive*”, especially groups that are disproportionately affected by HIV such as gay men and people of colour. This narrative reinforced the idea that HIV is something to worry about, regardless of undetectable status, thus putting the onus on participants and others living with HIV to disclose.

Discussion

This study examined factors associated with undetectable gay men's HIV status disclosure decisions to sexual partners. These factors were categorized into three major themes: sense of obligation, situational disclosure, and partners' responsibility in the disclosure process. Building upon previous literature, this study adds targeted discussions about application sex-seeking, HIV criminalization, and structural stigma to the existing knowledge base on factors impacting disclosure among the study population. Additionally, unlike previous studies, the current study focused exclusively on undetectable gay men and data were collected during a period of increased U=U awareness and acceptance.

Overall, our findings were consistent with the model presented by Bird and Voisin (2010). The "sense of obligation" theme covered much of the cognitive constructs of "beliefs disclosure risks" and "beliefs about privacy and responsibility." The "situational disclosure" theme, likewise, covered much of the contextual constructs of "sexual setting" and "sexual risk behaviour." The "partners' responsibility in the disclosure process" theme touched on topics related to stigma from interpersonal and structural lenses. Some participants could not verbalize what the laws said in their respective areas while others had never heard of them. This is consistent with previous literature on criminalization laws being unknown to PLWH which, among other previously discussed effects, limits the laws effectiveness in encouraging disclosure and reducing transmission (Lehman et al., 2014).

Topics related to the model's "partner characteristics and HIV status assessments/assumptions" construct were seldom discussed during interviews. This could be indicative of how sexual partners' perceived HIV statuses were not as relevant in deciding whether or not to disclose because participants follow blanked disclosure patterns; they know partner statuses through information on application profiles; or because U=U has made disclosure easier, lessening the need to assess safety vis-à-vis perceived partner status.

The findings from this study support those of Dong et al. (2020) that even in the context of U=U, GMLWH are burdened with the labour of managing partners' reactions to serostatus disclosure. That similar findings were found in this study and Dong et al. (2020) despite a four- to six-year difference between data collection may suggest that, while progress is being made in U=U knowledge (Rendina, Cienfuegos-Szalay, et al., 2020), many of the same issues surrounding misinformation or lack of sufficient awareness persist, both in inter-personal contexts and in legal frameworks that reinforce the societal burden of one-sided disclosure in an otherwise reciprocal process (Galletly & Pinkerton, 2006).

Interestingly, a number of participants mentioned that U=U as a preventative measure for HIV transmission is not 100% effective, even by negligible amounts. This was in concordance with findings from Rendina et al. (2020) that not all MSMLWH who are undetectable believe U=U to be fully effective. The reluctance to say U=U is 100% effective may reflect the historically confusing messaging about the associated risk level—or lack thereof —by public health authorities (Prevention Access Campaign, 2020). Seeing as some of these terms can be misinterpreted as a miniscule risk of transmission existing, there is a need for ongoing messaging reflecting the unequivocal, non-existent transmission risk from leading public health authorities.

Ultimately, this study provides further support for modernizing or eliminating HIV criminalization laws. Information on HIV criminalization laws often had to be introduced or clarified to participants. Some participants could not verbalize what the laws said in their respective areas while others had never heard of them. This is consistent with previous literature on them being unknown to PLWH, which limits their effectiveness in making PLWH feel compelled to disclose and preventing transmission (Lehman et al., 2014). This, on top of this study’s findings’ underscoring of how HIV criminalization laws reinforce unequal power dynamics within sexual partnerships related to disclosure and prosecutorial threats, makes a strong case can be made for updating these laws’ applicability to individuals who are undetectable, or decriminalizing HIV altogether.

This study possessed a number of methodological strengths. First, the use of Zoom video calls allowed for geographic diversity, which added nuance to the interviews, especially in regard to discussing states’ HIV criminalization laws. The interviewer identifying as a fellow member of the gay community aided in trust building, participant comfort, and the ability for participants to speak in colloquialisms without the need to “translate” (Greene, 2014), which also encouraged flow and candour.

This study was not without its limitations, however. The use of Zoom was susceptible to internet interruptions, leading to interruptions in the flow of interviews and participant/researcher trains of thought. Additionally, participant recruitment was limited to those with internet and webcam access, and time to engage in hour-long interviews; GMLWH with limited internet access or time may have offered additional information or nuance on the topics discussed. Participant responses were potentially subject to social desirability bias due to the highly sensitive nature of the interviews. Conversely, some participants may have exaggerated the true nature of their disclosure patterns or experiences to offer “useable data”. Finally, participant answers may have been affected by recall bias, as this study focused on describing and interpreting past experiences.

Conclusion

This study examined the cognitive, contextual, interpersonal, and structural factors that impact undetectable gay men's HIV status disclosure decisions to sexual partners. These factors were related to feeling obligated to disclose, being in situations that facilitated disclosure, and how sexual partners' responsibility fit into the disclosure process.

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Declaration of interest

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Chapter 5: Discussion

Summary

This study examined factors associated with undetectable gay men's HIV status disclosure decisions to sexual partners. These factors were categorized into three major themes: "sense of obligation," "situational disclosure," and "partners' responsibility in the disclosure process." Building upon previous literature, this study adds targeted discussions about application sex-seeking, HIV criminalization, and structural stigma to the existing knowledge base on factors impacting disclosure among the study population. Additionally, unlike previous studies, the current study focused exclusively on undetectable gay men and data were collected during a period of increased U=U awareness and acceptance.

Discussion of Findings

Overall, the study's themes reflected the model presented by Bird and Voisin (2010) well. The "sense of obligation" theme covered much of the cognitive factors incorporated in the constructs of "beliefs disclosure risks" and "beliefs about privacy and responsibility," while also including some contextual factors. The "situational disclosure" theme, likewise, covered many contextual factors from the "sexual setting" and "sexual risk behavior" constructs, while considering some cognitive factors. The "partners' responsibility in the disclosure process" theme touched on topics related to stigma from interpersonal and structural lenses.

Topics related to the model's "partner characteristics and HIV status assessments/assumptions" construct were seldom discussed during interviews. This could be indicative of how sexual partners' perceived HIV statuses were not as relevant in deciding whether or not to disclose, with three potential explanations. First, study participants' following a general disclosure pattern of (not) disclosing may have overruled the need to perceive a partner's

HIV status. Second, it is possible that more frequent knowledge of partners’ actual HIV statuses via the proliferation and normative expectation of status disclosure on application profiles (Giles, 2020; Race, 2010; Warner et al., 2019) meant perceiving status was occurring less frequently. Third, because of the normalization of the U=U concept (Rendina, Talan, et al., 2020), participants may have been more comfortable disclosing (as noted during some interviews), meaning they do not have to field partner characteristics to asses their own safety and comfort with disclosure vis-à-vis perceived partner serostatus.

The findings from this study support those of Dong et al. (2020) that even in the context of U=U, GMLWH are burdened with the labor of managing partners’ reactions to serostatus disclosure, educating them on health-related HIV topics, and negotiating between incorrect sexual health information and disclosure-related harms. The similar findings from both studies despite a four- to six-year difference between data collection may suggest that, while progress is being made in U=U knowledge (Rendina, Cienfuegos-Szalay, et al., 2020), many of the same issues surrounding misinformation or lack of sufficient awareness persist. This burden was also verbalized by participants in how there is no punitive repercussion to HIV-negative partners not asking about HIV status under HIV criminalization laws. This demonstrated how, legally, these laws recreate and reinforce the societal burden of one-sided disclosure in an otherwise reciprocal process (Galletly & Pinkerton, 2006).

Interestingly, a number of participants mentioned that U=U as a preventative measure for HIV transmission is not 100% effective, even by negligible amounts. This was in concordance with findings from Rendina et al. (2020) that not all MSMLWH who are undetectable believe U=U to be fully effective. Although the concept is growing in acceptability, it is still a novel paradigm shift in the grand scheme of HIV history. It is possible more time will need to pass, and more information will need to be presented, in order for all MSMLWH to gain full trust in U=U. The reluctance to say U=U is 100% effective may reflect the historically confusing messaging about the associated risk level—or lack thereof—by public health authorities (Prevention Access Campaign, 2020). Seeing as some of these terms can be misinterpreted as a miniscule risk of transmission existing, there is a need for ongoing messaging reflecting the unequivocal, non-existent transmission risk from leading public health authorities.

Implications and Future Directions

The results from this study present considerations for the Bird and Voisin (2010) model going forward. Because the model was developed before the widespread acknowledgement of U=U, it does not reflect the ways in which being undetectable interact with the mediating factors. Being undetectable could be added along the pathway from stigma to disclosure, or as a meta-level mediating factor that encapsulates the others. The way in which the model is described could be updated to include structural HIV stigma within the stigma construct, as opposed to the present description of it at the interpersonal level. It is evident from this study that structural interventions and policies have impacts on individuals' decisions to disclose, so the Bird and Voisin model should reflect this.

While the inclusion of topics related to sex-seeking on internet applications and HIV criminalization laws were, to the best of the investigator's knowledge, new additions to the literature on undetectable gay men's status disclosure decisions, these topics were not this study's sole focus. Future qualitative studies could go more in-depth with the same population to uncover additional information and nuances on these topics. For instance, several participants described how they changed whether or not they included their HIV status in application profiles over time. The reasons for doing so were generally not explored due to time constraints, so a study on undetectable gay men’s status disclosure on applications could uncover additional detail on this phenomenon. Additionally, most participants were not well-versed in HIV criminalization laws. A future study with undetectable gay men who are more knowledgeable about these laws could add depth to their impacts on their disclosure processes.

Furthermore, populations other than gay men should be studied to explore their HIV status disclosure decisions, specifically among those who are undetectable. There is still a dearth of literature on undetectable men who have sex with men and women’s HIV status disclosure to sexual partners, as well as non-gay-identified MSM. The impacts of stigma are not monolithic across (or within) populations, so understanding how it affects disclosure decisions among different groups and what, if any, mediating factors exist are crucial to broaden knowledge on this issue.

Public Health Impact

Ultimately, this study provides further support for modernizing or eliminating HIV criminalization laws. Information on HIV criminalization laws often had to be introduced or clarified to participants. Some participants could not verbalize what the laws said in their respective areas while others had never heard of them. This is consistent with previous literature on them being unknown to PLWH, which limits their effectiveness in making PLWH feel compelled to disclose and preventing transmission (Lehman et al., 2014). This, on top of this study’s findings’ underscoring of how HIV criminalization laws reinforce unequal power dynamics within sexual partnerships related to disclosure and prosecutorial threats, makes a strong case can be made for updating these laws’ applicability to individuals who are undetectable, or decriminalizing HIV altogether.

Strengths and Limitations

This study possessed a number of methodological strengths. First, the use of Zoom video calls allowed for geographic diversity, which added nuance to the interviews, especially in regard to discussing states' HIV criminalization laws. The semi-structured nature of the interviews allowed for fluidity in the topics discussed and their order, especially as interview topics were organically introduced by participants. The interviewer's previous experience as an HIV testing counselor helped him make participants feel ease in being candid while discussing highly personal topics related to sex and HIV, and him identifying as a fellow member of the gay community aided in trust building, participant comfort, and the ability for participants to speak in colloquialisms without the need to "translate" (Greene, 2014), which also encouraged flow and candor.

This study was not without its limitations, however. The use of Zoom, while allowing for participant geographic diversity, was susceptible to internet interruptions, leading to interruptions in the flow of interviews and participant/researcher trains of thought. Additionally, participant recruitment was limited to those with internet and webcam access, and time to engage in hour-long interviews; GMLWH with limited internet access or time may have offered additional information or nuance on the topics discussed. Participant responses were potentially subject to social desirability bias. The topics of the interviews were highly personal, as aforementioned. While the researcher did his best to outwardly welcome candor and honesty, it cannot be overlooked that participants may not have been fully forthcoming with disclosure practices. Conversely, some participants may have exaggerated the true nature of their disclosure patterns or experiences to offer "useable data." Finally, participant answers may have been affected by recall bias, as this study focused on describing and interpreting past experiences. It is possible participants did not remember all the times they did or did not disclose their HIV status or what impacted these decisions.

Reflexivity Considerations

As previously mentioned, the researcher identified as a member of the gay community; however, he was not living with HIV. Borrowing from principles of community-based participatory research (Rhodes et al., 2010), the researcher included input from gay men living with HIV (or those working intimately with them in public health settings) throughout various points of this study, including: preliminary discussions on the topic(s) of this study; creation of recruitment materials and the use of person-first language; and test-piloting the interview guide. Study participants were also offered the opportunity at the end of their interviews to provide feedback on the substance of the questions and how they were asked to ensure appropriateness and minimize discomfort as much as possible.

Similarly, there was the potential for the researcher's own biases to be introduced (Greene, 2014). This included his own reflections on the necessity (or lack thereof) of disclosure while being undetectable, the roles and impacts of HIV criminalization laws on disclosure, and other topics covered by this study as someone who is not living with HIV and who has studied these topics extensively. While it was not possible to fully remove biases from data analysis and interpretation, the researcher did his best to stay true to the data through these processes by supporting his analyses with participants quotes, and only summarizing and paraphrasing towards the end of data analysis. Using verbatim support for thick descriptions during the analysis process and documenting this process with memos were used to help guide the process and limit biases as themes were identified and summarized (Noble & Smith, 2015).

Conclusion

Using the HIV disclosure model presented by Bird and Voisin (2010) as a framework, this study explored the question “what factors impact undetectable gay men’s HIV status disclosure decisions to sexual partners?” A number of cognitive, contextual, and inter-personal factors were discussed by participants, reflecting the mediating constructs from the framework. This study introduced topics related to internet application use, HIV criminalization laws, and structural stigma to existing literature related to the research question. Additional added public health value resulted from restricting the sample only to gay men who were undetectable and collecting data during a period of expanded U=U awareness. Results from this study have implications for more targeted studies on undetectable gay men, as well as studies incorporating other undetectable demographics.

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Appendix A: Interview Guide

Introduction

Thank you again for agreeing to participate in this study. The most important thing is that I am here to learn from you. There is no "correct" answer; rather, I am hoping to hear honest thoughts and reflections on the topics we discuss, so please feel free to be as candid as you'd like.

As previously mentioned during the consent process, participation in this study is completely voluntary, and you may stop at any time. You may also decline to respond to any question. I'll be taking notes throughout our conversation today. [Internet disclaimer].

Additionally, our conversation today will be recorded and transcribed. Are you okay with our conversation being recorded?

- *[If no: "I understand. Thank you for taking the time to meet today, and please let me know if anything changes in the future."]*
- *[If yes: Continue with below]*

Do you have any questions? *[Answer questions]*

Let's get started.

Questions: Background

First, I'd like to get some background information.

1. How old are you?
2. Where do you currently reside?
3. What is your race/ethnicity?
4. How long have you been living with HIV?
    a. *When did you receive your HIV diagnosis?*
5. Tell me about your experience learning about your HIV diagnosis.
    a. *Where did you receive your HIV diagnosis?*
    b. *Who told you your HIV diagnosis?*
    c. *What did you feel at that moment?*
    d. *How did you respond?*
6. When did you start HIV medication?
    a. *How soon after your diagnosis?*
7. How did you first hear about being undetectable?
    a. *Who first told you what "undetectable" means?*
    b. *When did you first hear about being undetectable?*
8. What was your understanding about being undetectable when you first heard about it?
    a. What did you think "undetectable" meant at the time of your diagnosis/prior to your diagnosis?
9. What is your understanding about what being undetectable means now?
    a. *How would you define "undetectable"?*
    b. *[If a change] What contributed to this change in understanding?*
10. How long have you known you are undetectable?
    a. *When did a medical professional first tell you you were undetectable?*

11. How, if at all, has your outlook on living with HIV changed since your diagnosis?
    1. *Has there been any new information about HIV that has changed your perspective? If so, what is it?*
    2. *Have there been any new life experiences that have changed your outlook? If so, what are they?*
        1. *Being undetectable*
12. What does being undetectable mean to you?
    1. *What impact does being undetectable have on your life?*
    2. *What is the significance of being undetectable to you?*

Questions: Sexual Partners and HIV Disclosure

13. From where have you heard messages about disclosing your HIV status to sexual partners?
    1. *Medical professionals*
    2. *Friends*
    3. *Family*
    4. *Media*
    5. *Health educators/teachers*
14. What messages have you received about disclosing your HIV status to sexual partners?
    1. *To disclose, not to disclose, etc.*
    2. *Importance of disclosing*
15. How do you normally meet your sexual partners?
    1. *Bars*
    2. *Parties*
    3. *Friends*
    4. *Online*
    5. *Other*
16. How often do you disclose to your sexual partners?
    1. *What percentage of the time do you tell your sexual partners that you are HIV-positive?*
17. When, if at all, do you usually disclose your HIV status to sexual partners?
    1. *At what point in a relationship with a sexual partner do you normally disclose your HIV status?*
    2. *Before, during, after?*
18. What plays into your decision to disclose your HIV status (or not) to sexual partners?
    1. *How you met them*
    2. *Influence from friends, medical professionals, etc.*
    3. *Familiarity with partner before sex*
    4. *Anticipation of partner's reaction*
19. How does being undetectable specifically play into your decision to disclose your HIV status, if at all?
    1. *Does knowing you cannot transmit HIV to a sexual partner impact your decision to disclose? Why or why not?*
20. How does a typical conversation about HIV status go with sexual partners, if you normally discuss it?
    1. *Who initiates the conversation?*

   b. *What are you thinking before or during the conversation?*
   c. *How do you have the conversation?*
      i. *Text, phone call, on an app, etc.*
   d. *How, if at all, have your sexual partners reacted to you disclosing your status?*

21. In what ways, if any, does the way you described a typical conversation differ from your ideal conversation about HIV status with your sexual partners?
    a. *If you could write the script for the conversation, what would you say?*

Questions: Morals and Ethics

22. Do you think it is necessary to disclose your HIV status to a sexual partner if you are undetectable? Why or why not?
    a. *[If yes] What makes it necessary?*
    b. *[If no] Why is it not necessary?*
23. What, if any, ethical or moral concerns do you have about (not) disclosing your HIV status to a sexual partner if you are undetectable?
    a. *Do you hold a responsibility to tell your partner? Why or why not?*

Questions: HIV Criminalization Laws

Now I'd like to transition to the topic of HIV criminalization laws. As of 2019, 34 states have HIV criminalization laws on the books.

24. What do you know about HIV criminalization laws?
    a. *What do you believe to be the purpose of HIV criminalization laws?*
    b. *What information on HIV criminalization laws are you familiar with?*
25. What are your thoughts about HIV criminalization laws?
    a. *How do these laws make you feel?*
    b. *Do you believe these laws effectively do what they are supposed to do? Why or why not?*
    c. *What do they accomplish, if anything?*
26. Do HIV criminalization laws play a role in (not) disclosing your HIV status to sexual partners? Why or why not?
    a. *Worries about prosecution*
    b. *Knowledge about effectiveness of laws*
    c. *[If participant normally discloses] Are the laws an important factor in your decision to disclose?*
27. How, if at all, would you change or update HIV criminalization laws?
    a. *Inclusion of undetectable status*
    b. *Repeal*
    c. *Other specific clauses*
28. *How would you, more broadly, change or improve education about being undetectable, if at all?*
    a. *Campaigns*
    b. *Educational materials*

We have covered a lot of ground today. Is there anything else you would like to discuss with me that you may not have had the chance to yet?

- *[If yes: Continue with conversation until all additional topics are discussed]*

- *[If no: Continue to below]*

Finally, is there anything I asked today that you would have liked for me to ask differently or use different wording?

- *[If yes: Listen, take notes, and respond until participant addresses everything he wishes]*
- *[If no: Continue to below]*

This concludes our interview. Thank you again for participating in this study. I appreciate your openness and the insights and experiences you have shared with me. Please feel free to get in touch with any comments or concerns.

Appendix B: Codebook

Code	Memo	Notes	Example	Exclusion Criteria
Disclosure Risks	Beliefs about the costs associated with HIV disclosure			
Disclosure Risks\Rejection	No disclosure because of the belief that disclosure will lead to rejection		Grant: "…you mentioned that more times than not, you would not disclose [pre-U equals U]. What went into that decision? Participant: "I didn't want to be turned away…"	
Disclosure Risks\Judgment or Stereotyping	No disclosure because of the belief that disclosure will lead to judgment or stereotyping		"It's in part, it's that it's that like instant judgment, right? Some perceived risk that is less there than, you know, if I was negative. Like [long pause] I don't know, it's, it's	

			like I haven't ever I've never not disclosed or hidden my status or anything like that if they've asked. But like there's, there's a part of me that wants to based on certain locales and, and their lack of understanding."	
Disclosure Risks\Abuse	No disclosure because of the belief that disclosure will lead to verbal or physical abuse or violence		"Yeah, I mean the possibility that somebody would have a negative reaction and be like, you know, possibly violent was in-- or you know, just have some other negative reaction definitely	

			played into my decision."	
Disclosure Risks\Mood Killer	No disclosure because of the belief that disclosure will decrease sexual energy or mood		"Like what I, what I end up finding is if I'm in an area where the education is not very great or the, the PrEP, PrEP levels are not very high in the community, what I ended up finding is that you know, hot and heavy chat that leads to potential meetup, thus disclosure, then becomes me giving them a lesson."	

Disclosure Risks\Risk Avoidance	Instances where or the belief that disclosure can or is used to preempt the risks/negatives associated with dislcosure	This includes disclosure to filter out potentially discriminatory sexual partners, avoid guilt or distress from non-disclosure, etc. in addition to those listed above (i.e., negatives associated with non-disclosure)	"Um if I didn't disclose, then the, the projected course of like, the predicted intercourse would probably still happen versus it turning into a school lesson but then there's the like, super fun risk of after that happening then going, then wanting to suddenly know my status and me telling them and them freaking out in the room as opposed to freaking out on a phone at a distant place kind of thing. Due to the fun fact that we have some states--and still lots	

			of them--that where not disclosing would be considered a crime. I'm not willing to risk my freedom."	
HIV Educator	Participant describes how disclosure can lead to educating sexual partners about HIV		"I would have to do educating. I mean, especially if… [pause] yeah, I mean, even in person, I did have to do a lot of educating of like… people just wouldn't know what that meant. [Inaudible] they wouldn't know what undetectable meant so I would have to be like, well, this is what	

			undetectable means, you know, it means that I'm not dangerous, like, whatever. Um, so I do think that there was a fair amount of educating going on."	
HIV Educator\Positive	When participant views providing education as positive or that they enjoy		"It feels good, because I feel like people should know… It's just nice to know that I'm helping educate somebody on something…"	
HIV Educator\Negative	When participant views providing education as negative or something they don't enjoy		"Like what I, what I end up finding is if I'm in an area where the education is not very great or the, the PrEP, PrEP levels are not very high in the community, what I ended	

			up finding is that you know, hot and heavy chat that leads to potential meetup, thus disclosure, then becomes me giving them a lesson."	
Privacy	Participant describes privacy concerns re: disclosure related to HIV status	Can include aspects of trust, building rapport, becoming comfortable with the other person, etc.	"I mean, especially as I was date-- going on dates with the person… it wouldn't have to be immediately. It would be like, you know, definitely after we like, had dinner or something."	
Privacy\Access to Status	Participant specifically describes privacy concerns related to who knows about his HIV status		"So since then, I, I do not disclose in my profile. Not because I'm ashamed or anything, but like, that's my status and I don't need to tell my	

			straight coworkers who I'm not going to fuck what my status is because they're going to respond based on like 1980s era education."	
Privacy\Hints	Participant uses tactics to suggest or signal positive HIV status without saying it	Can include status omission on dating/hookup applications and/or indication of safer sex practices	"Um sometimes, I would say like, I would just try to sneak it into random places."	
Responsibility		Parent code only		
Responsibility\Personal	Instances in which participant discusses his own responsibility to disclose		"…like as far as disclosure goes, there's part of it is personal responsibility I guess."	Excludes discussion about shared responsibility
Responsibility\Personal\Relationship Status	How closeness of relationship (e.g., anonymous partner, dating) impacts feelings of		"…but I always just figure like, I'd rather scare you off now then get emotionally invested and	

	responsibility to disclose		then scare you off later."	
Responsibility\Personal\Obligation	Participant describes a moral or ethical obligation (or not) to disclose, including letting a partner make some sort of choice about having sex with him		"[Pause] [sigh] uhhh I mean, ethically, it [pause] I mean, ethically it's not, it's not cool. [Laugh] but [long pause] I mean for me like, I don't think I would feel... I don't think I'd necessarily feel guilt knowing, knowing that, like, I'm still doing what I can to maintain my partner's sexual safety. [Pause] but I also fully acknowledge and understand it's the right for them to make that choice. Whether it's an informed choice or not.	

			So ethically, like I still have to disclose."	
Responsibility\Partner	Participant describes partners' responsibility to discuss status or assume a level of risk		"Yeah. If you're, if you are not doing all that you can to protect your own sexual health then like, [pause] it's not like you deserve anything but like, this is, this is kind of what happens."	Excludes discussion about shared responsibility
Responsibility\Shared	Participant describes disclosure decisions and discussions as being shared between himself and his partner(s)		"…and like part of me is like, okay, well it takes two to tango."	

Partner Characteristics	How perceptions of partners' HIV statuses impact disclosure decisions	Perceptions can be impacted by partners' physical characteristics, knowledge of sex or drug practices, knowledge of personal life, HIV knowledge etc.		Does not include knowledge of partners' actual HIV statuses (e.g., through knowledge of PrEP use)
Sexual Settings	How the setting of sex (e.g., type of location, geographic location, etc.) or disclosure discussions impacts the experience or decision to disclose		"...if I'm in Texas, not a lot of great education. So it is kind of important for me to disclose and that I don't want to deal with a potential freak freak out."	

Sexual Settings\Internet	How aspects of being on apps, websites, social media, etc. impact experience of disclosure or the decision to disclose		when it comes to chat like there's always you know, there's the dirty talk and all that stuff and so part of that is I'm very forward about not wearing condoms, not enjoying condoms, whether I'm topping or bottoming... but if there's a lull in the conversation or like, a comedown in temperature, then I'll be like, "Oh and like you're on PrEP right?" or "What's your status?" or "Hey, I just got tested like two weeks ago for all my standard STIs is everything came back good and clear. I am	

			undetectable" and like it just, it happened that way as opposed to it being disclosed on my profile or like that."	
Sexual Risk Behavior	Participant discusses how disclosure is affected by whether or not they are putting their partners at risk for HIV based on the sexual activity		"…Okay, if I'm in Texas, and all I really want to do is suck a dude's dick, does he need to know that I'm HIV-positive and undetectable? Unless I've had dental work and I'm bleeding from the gums, probably not. Like if he asked me, would I tell him? Yes, but like, it's just a blowjob."	

Sexual Risk Behavior\Safer Sex Practices	Participant discusses how safer sex practices influence and impact disclosure decisions	Condom use, serosorting, strategic positioning	Grant: "And what would be, for you, an ideal conversation with someone who's negative, regarding disucssing your status?" Participant: "…I kind of sometimes feel like, for me, it would be more preferable if they were, if they wanted to use a condom. You know, since we're going to be hooking up, you know, when I'm poz..."	
Sexual Risk Behavior\Safer Sex\Undetectable	Participant discusses how their own undetectable status and inability to transmit HIV influences and impacts disclosure decisions or		"I mean, ethically it's not, it's not cool [to not disclose]. [Laugh] but [long pause], I mean for me like, I don't think I would feel… guilt knowing that,	

	the experience of disclosing (i.e., undetectable as a safer-sex practice)		like, I'm still doing what I can to maintain my partner's sexual safety. [Pause] but I also fully acknowledge. .. it's the right for them to make that choice. Whether it's an informed choice or not. So ethically, like I still have to disclose."	
Sexual Risk Behavior\Safer Sex\Undetectable\Disclose	How being undetectable helps or facilitates status disclosure		"…you know, U equals U, all of the, you know, I'm not gonna be able to transmit it, right?... Prior to that, I was very cautious and more times than not would not disclose. Now, I've looked at it differently and I'm not afraid to disclose. I think more	

			and more people have, as time goes on, they become more comfortable with it and are more accepting or they can look at it in a way of "I'm not toxic or I'm not going to be toxic" like it was 20 years ago, right?"	
Sexual Risk Behavior\Safer Sex\Undetectable\No Disclosure	How being undetectable facilitates non-disclosure		"I would say since they're undetectable, it should be up to the other person to, to ask the question. I don't think you should--you, you don't necessarily have to since the danger isn't there, so to speak, right?"	

Sexual Risk Behavior\Safer Sex\PrEP	Participant discusses how partner PrEP use influences and impacts disclosure		"…I mean I think PrEP changhes the game, like if someon'es on PrEP… then I don't think that they might not care necessarily, um, in terms of, you know, whether or not people are HIV-positive or not. Um, and I mean, why, if someone's on PrEP, then why should they? I mean, I think that's one of the beautiful things about PrEP is that it eliminates that concern."	

Sexual Risk Behavior\Discussions	Participant discusses disclosure in the context of discussions about sexual practices and safer sex		"...so part of that is I'm very forward about not wearing condoms, not enjoying condoms, whether I'm topping or bottoming... and yeah, the, the dirty talk of breeding somebody and all that stuff. And that's one of those things where we all get-- we'll both get like hot and bothered, but if there's a lull in the conversation or like, a comedown in temperature, then I'll be like, 'Oh and like you're on PrEP right?' or 'What's your status?' or 'Hey, I just got tested like two weeks ago for all my	

			standard STIs is everything came back good and clear. I am undetectable.' "	
U equals U	Mentions of U equals U in relation to disclosure decisions or experiences	Either the campaign or the concept	"And I think prior to getting the message and the word out there that… and, and seeing it on TV and in print ads, and so on, you know, U equals U all of the,, you know, I'm not gonna be able to transmit it, right? We'll just say that. Prior to that, I was very cautious and more times than not would not	

			disclose. Now, I've looked at it differently and I'm not afraid to disclose."	
Own Diagnosis	Participant discusses how their experience becoming HIV positive and/or learning about their diagnosis impacts their disclosure decisions		"For me, it was more of a moral standpoint. It was kind of based on the way that I-- it was transmitted to me. I didn't want to do that to somebody else."	
HIV Criminalization	Discussion about HIV criminalization laws affects the experience of disclosure		"That's the hard part because it's like, I guess, you know, the first thing off my head right now thinking is like to scare people into letting people know."	

HIV Criminalization\Disclosure	How HIV criminalization laws or possibility of prosecution impacts (or doesn't) disclosure decisions		"...Due to the fun fact that we have some states--and still lots of them--that where not disclosing would be considered a crime. I'm not willing to risk my freedom"	
HIV Criminalization\Stigma	Discussion about how HIV criminalization laws create, impact, or reinforce HIV stigma		Grant: "…how do [these laws] make you feel just as someone living with HIV and who's undetectable?" Participant: "Targeted"	
Language Distinction	Participant discusses making a distinction between being "HIV-positive" and being "undetectable" or discusses undetectable as a status symbol		"…it's becoming, I think it's becoming synonymous where people just kind of assume if you say you're… HIV-positive, then there's a lot of assumption that you're probably	

			undetectable versus actually asking like, 'so you're undetectable then?'"	
Important Quote	Something that stands out and/or could be used in title of thesis/paper			