

MALE SELF-DISCLOSURE OF HIV-POSITIVE SEROSTATUS  
TO SEX PARTNERS

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## Dedication

To James Michael Kowalski, who helped me every step of the way, I love you.

To my son Patton George, you are my sunshine. To my father, I cherish you dearly, and to Rosie, you stood by me night and day. I offer each of you endless thanks and praise.

My mother, Patricia Sullivan, has always been my greatest source of inspiration.

May you rest in peace.

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## ABSTRACT

HIV-positive men face multiple challenges when deciding whether or not to disclose their serostatus to sex partners. This survey design using repeated measures examined disclosure of HIV-positive serostatus to sex partners in an ethnically diverse population of men ( $N = 93$ ) recruited from the community in O'ahu, Hawai'i. The framework guiding the research was Social Cognitive Theory (Bandura, 1987), with a specific focus on self-efficacy for disclosure decision-making and for negotiating safe sex. The aims of the research were to: 1) describe HIV serostatus disclosure to sex partners; 2) describe self-efficacy for disclosure to sex partners and self-efficacy for negotiating safer sex; 3) determine the relationships between demographic, HIV-illness, drug use history, self-efficacy and sex partner variables (relationship status, serostatus), and self-disclosure, and; 4) determine the relationships between demographic, HIV-illness, drug use history, self-efficacy, sex partner variables, self-disclosure, and condom use by the men in the sample. A convenience sample of HIV-seropositive men was enlisted through both active outreach and passive recruitment (posters and public advertisement). Survey responses were anonymous, as the subject matter being asked was sensitive in nature. Results reveal that self-disclosure to sex partners varied based on sex partner serostatus and relationship status, and was significantly influenced by perceived self-efficacy, by income, education, years since diagnosis and contextual factors including cocaine use before sex. Subjects were least likely to disclose to a sex partner whose serostatus was not discussed. An unknown partner serostatus was also significantly associated with less disclosure. The more committed the relationship, the greater the likelihood that a subject would self-disclose. The longer the time since initial HIV diagnosis the more likely a subject was to

disclose to sex partners. High self-efficacy scores were associated with self-disclosure, and with condom use. Cocaine use before sex was associated with less disclosure and less condom use. Self-disclosure was significantly associated with condom use as well. Although a causal relationship is not implied, self-disclosure practices did influence safe sex behavior. Implications for nursing and for future research are discussed.

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## LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term</u>
AIDS	Acquired Immune Deficiency Syndrome
CDC	Centers for Disease Control
<i>df</i>	degrees of freedom
Dx	Diagnosis
HIV	Human Immunodeficiency Virus
IV	intravenous
MSM	men who have sex with men
SD	self-disclosure
<i>SD</i> (in statistics cited)	standard deviation
SE	self-efficacy

## Chapter 1: Introduction

The HIV epidemic is now in its third decade, with an estimated 40,000 new cases occurring each year in the United States. Reports suggest that over 70% of seropositive individuals remain sexually active after testing positive (Crepaz & Marks, 2002; DeRosa & Marks, 1998). Up to one third of adults with HIV continue to have unprotected sex, at times without informing their sexual partners who may be HIV-negative or of unknown serostatus (Kalichman, 2000; Wolitski, Retmeijer, Goldbaum, & Wilson, 1998). The vast majority of new HIV infections (70%) have occurred through homosexual or heterosexual sex with an HIV-seropositive male (CDC, 2004). Large numbers of HIV-positive men report engaging in unprotected sex with both men and women, and many report having difficulty disclosing their serostatus to sex partners (DeRosa & Marks, 1998; Kalichman & Nachimson, 1999; Marks & Crepaz, 2000; Wolitski et al., 1998). Male self-disclosure of HIV status to intimate partners, then, is a significant link in HIV prevention with nondisclosure being a material risk factor for transmission of the virus. There is a need to focus on male self-disclosure to sex partners, as gender-related differences in disclosure have been cited in the literature (Kalichman, 1998; Kanuha, Mueller, Sullivan, Glancey & Matsumoto, 2003).

Once known as a disease of gay white men, HIV is now called a disease of minorities (Aranda-Naranjo, 1994) because ethnic minority populations are disproportionately affected. A paucity of data exists on male serostatus disclosure to sex partners by men from minority ethnic backgrounds such as Asian and Pacific Islanders. This is due to under representation in sampled populations (Van der Straten, Catania &

Pollack, 1998) despite increased rates of HIV in Asian and Pacific Islanders (Centers for Disease Control and Prevention [CDC], 2004; CDC, 2003). No published data on male HIV disclosure to sex partners exist in the multicultural and ethnically diverse population of Hawai'i, where over one quarter (26%) of the reported male AIDS cases are of Asian or Pacific Islander descent (Hawai'i Department of Health, 2004). A scholarly focus primarily on male self-disclosure of HIV status to sex partners is appropriate for the purpose of uncovering findings that may be unique to this population. The purpose of this research study is to shed light on patterns of serostatus disclosure to sex partners, coupled with patterns of safe-sex behavior, among HIV-positive men living on the island of O'ahu, Hawai'i.

#### *Statement of the Problem*

People living with HIV and AIDS are challenged to make decisions about whether or not to disclose their serostatus to sexual partners. Self-disclosure of an HIV-positive serostatus informs intimate partners of their risk and may facilitate negotiation of safer behaviors. When a positive serostatus is not disclosed, sexual partners may underestimate their own risk for HIV and subsequently engage in less self-protective behavior (Kalichman, 2005). Sexual behaviors such as unprotected intercourse can place both partners at-risk for sexually transmitted diseases including various strains of HIV. Furthermore, if a sexual partner should unknowingly become infected, he or she may unknowingly infect others.

Recent estimates suggest that as many as 950,000 persons in the United States are currently infected with HIV (CDC, 2005), with an estimated one third not knowing they

are seropositive (Fleming, 2002). Over three-quarters of new infections annually have occurred through same-sex and/or heterosexual practices involving an infected partner (CDC, 2003). Men who have sex with men represent the largest portion of new infections (44%), followed by heterosexual contact (35%) (CDC, 2003). An important consideration when reviewing heterosexual transmission of HIV is that multiple studies report men have difficulty disclosing a positive HIV serostatus to sex partners, even while continuing to engage in sexual encounters (Bingman, Marks & Crepaz, 2001; Crepaz & Marks, 2003; Kalichman & Nachimson, 1999; Kanuha et al., 2003; McFarland, Chen, Weide, Kohn & Klausner, 2004; Reese, 2003; Semple, Patterson & Grant, 2004; Serovich & Mosack, 2003; Stein et al., 1998; Zea et al., 2003). In addition, the overwhelming majority (80%) of women diagnosed with HIV in 2003 were infected through heterosexual contact (CDC, 2005).

Racial and ethnic minorities are disproportionately affected by HIV/AIDS and minority Americans now represent the majority of new AIDS cases (Kaiser Family Foundation, 2004). The highest estimated rate of new HIV infections are among African American (49%) and Latino (20%) men. From 1998 to 2003, AIDS incidence increased among Asians/Pacific Islanders (CDC, 2004). While Asian and Pacific Islanders account for less than one percent of the total number of HIV/AIDS cases in the United States, nearly one third of all newly diagnosed (last five years) male AIDS cases in Hawai'i are of Asian/Pacific Island descent (Hawai'i State Department of Health, 2004). Many Asian/Pacific Islanders are foreign born with English as a second language, and they

experience culture and language barriers to receiving public health messages such as those relating to HIV prevention (Jiang, 2000; Wong, 2005).

Men who have sex with men (MSM) of all races and ethnicities continue to account for the largest number of people reported with AIDS each year. Evidence suggests that young gay and bisexual men are continuing to engage in considerable HIV-risk behavior (Kalichman, 1999; McFarland, Chen, Weide, Kohn, & Klausner, 2004; Serovich and Mosack, 2003), including unprotected anal intercourse with partners known to be HIV positive or of unknown serostatus. Younger men who have sex with men and MSM of color are at particularly high risk for contracting HIV (Kaiser Family Foundation, 2004). As presented, multiple factors contribute to male transmission of HIV, including non-disclosure of serostatus.

In attempts to understand why some individuals disclose to intimate partners while others do not, researchers have identified several factors as potential facilitators and barriers for self-disclosure (Appendix A). Motivation to disclose an HIV-positive serostatus in the context of sexual intimacy is complex, and influenced by multiple interactions among intrapersonal aspects of the self along with interpersonal, sociocultural, and situational factors (Kalichman, Heckman & Kelly, 1996; Reisen et al., 1997; Semple, Patterson, Grant & Igo, 1999; Sullivan, 2004). Further research is needed to explore different facets of influence on self-disclosure, especially in populations where no research has been completed.



### *Significance of the Study*

The HIV epidemic has now entered its third decade. With advances in the medical treatment of HIV, a substantial reduction in mortality and in physical symptoms associated with the disease has occurred. Individuals with HIV have greater opportunities to focus on maintaining close relationships and initiating new intimate relationships with others (Greene et al., 2003). One of the identified indicators for measuring the health of people in the US over the next decade is responsible sexual behavior (U.S. Dept. of Health and Human Services, 2000), which includes preventing the spread of HIV disease. With sexual transmission of HIV by men being the principal mode of infection, primary prevention for sex partners of seropositive men is a critical component of health care delivery. As a primary prevention method, self-disclosure of HIV seropositivity provides an avenue for informed decision-making regarding safer sexual behavior.

As questions are answered about how intrapersonal, interpersonal, sociocultural and situational factors influence male disclosure, findings will guide the development of evidence-based strategies to enhance self-disclosure that are gender sensitive, culturally appropriate, and tailored for subpopulations of at-risk individuals. Health care providers could then support HIV-positive clients in adopting and maintaining healthy behaviors, including self-disclosure practices.

### *Purpose of the Study*

The aims of this research are to: 1) describe HIV serostatus disclosure to sex partners in a sample of HIV-positive men living in O'ahu, Hawai'i; 2) describe self-

efficacy for HIV serostatus disclosure to sex partners and self-efficacy for negotiating safer sex; 3) determine the relationships between demographic, HIV-illness, self-efficacy and sex partner variables (relationship status, serostatus), and self-disclosure of HIV and; 4) determine the relationships between demographic, HIV-illness, self-efficacy, sex partner variables and self-disclosure, to the sexual practices (safe or unsafe) of the men in the sample.

## Chapter 2: Literature Review

In this chapter, an analysis of the concept of self-disclosure will be presented followed by a critical review of the literature focused specifically on self-disclosure of HIV to sex partners. A brief discussion about HIV prevention models and their utility in addressing needs related to HIV-positive individuals will serve to provide a sound rationale for choosing Social Cognitive Theory as a theoretical framework for operationalizing and testing research questions and hypotheses. For brevity, in the rest of this paper, the term “male self-disclosure of an HIV positive serostatus to sex partners” will be shortened to self-disclosure of HIV, or self-disclosure of HIV to sex partners, or in some cases simply to disclosure, or disclosing.

### *Self-Disclosure*

To dis-close means to uncloset or open up—to expose to view—something previously concealed or held secret. This is an important characteristic distinguishing self-disclosure from other terms such as telling or communicating. To self-disclose, an individual must have previously withheld the information. Thus, some period of time transpires prior to the decision to uncloset, exemplifying the process-orientation or chronology leading to the action of self-disclosure. Process aspects of self-disclosure are frequently cited in the HIV literature (Cusick & Rhodes, 1999; Greene, Derlega, Yep & Petronio, 2003; Holt et al., 1998; Semple, Patterson, Shaw, Pedlow & Grant, 1999; Serovich, 2000). Measurements of when in the course of their illness people disclose is a phenomenon of interest, with length of time since diagnosis frequently used as a marker

in HIV self-disclosure research (De Rosa & Marks, 1998; Kimberly, Serovich & Greene, 1995).

Disclosure is not a simple act. It is an ongoing process that involves careful consideration of *who* will tell *what* to *whom*. Disclosure has been referred to as the act of telling or making something known publicly (Krisman-Scott, 2000). Use of the term “disclosure” in this manner does not distinguish who discloses, which is significant to the concept of self-disclosure of HIV to sex partners.

*Who* will tell? In this review, self-disclosure refers to the self-initiated disclosure of HIV-status to a sex partner, and the disclosure is a chosen option by an HIV-positive man informed of his diagnosis. Research involving partner notification is not included in this review, as the seropositive person does not have to be the one to disclose in this public health practice of notifying others of possible exposure. Yet partner notification sheds light on some of the legal and ethical implications of disclosing.

Since the early 1990’s, public health service guidelines have recommended that individuals infected with HIV notify their sex partners. The purpose of notification is to promote testing of those at risk for HIV, and counseling to prevent further transmission. With partner notification, a third person—typically from the contact services of state or local health departments—can inform individuals about their risk of having been exposed to the virus without identifying the source of exposure (Bloom, 1998). Partner notification may be voluntary or compulsory, with some states requiring it by law. Counselors and family therapists struggle with “duty to warn” partners of clients who

have confided to their therapist that they are HIV-positive and have not disclosed their serostatus to a sex partner (Serovich et al., 2000).

Partner notification does point out an ethical dilemma associated with a diagnosis of HIV, i.e., the issue of privacy and confidentiality for HIV-positive persons, versus the public's "right to know" who is HIV-positive. The privacy-versus-disclosure issue, faced by HIV-positive persons, influences their decisions about whether or not to tell health care providers as well as sex partners. They must weigh the potential costs of disclosure, which could include: loss of privacy; employment; housing and/or health insurance; social stigma; isolation; rejection; feelings of guilt, shame, anger, and fear; as well as the potential benefits of disclosure, including: a more positive sense of self; emotional and social support; and catharsis. Appendix B lists the potential positive and negative outcomes related to self-disclosure.

Who will tell *what*? An important dimension of disclosure behavior is the level or depth of intimacy of the matter being disclosed (Oarzu, 2000). Self-disclosure involves the telling of potentially stigmatizing information to one or more persons (Derlega, Metts, Petronio & Margulis, 1993). A perception exists that the information being shared is personal or intimate, distressing or negative, for which disclosure could be potentially harmful. For the HIV-positive person, disclosing to a sex partner about one's HIV-positive serostatus may also reveal lifestyle practices which may be private, secretive and sensitive in nature, e.g., drug use and bisexuality, which resulted in his or her infection with HIV. Discussing sensitive matters related to sex is also deeply embedded in the dimensions of an individual's system of beliefs and values about sexuality, sexual health,

social structure and environmental influence which can make disclosing very threatening. Primary reasons for non-disclosure of HIV to sexual partners cited in the literature include fear of rejection or loss (Greene, Derlega, Yep, Petronio, 2003; Semple et al, 1999) and stigma (Greene et al., 2003; Serovich, 2000). For many people, it is easier to engage in sex rather than talk about it. For the HIV-positive person a dilemma exists. Disclosure may be perceived as potentially harmful for them, yet concealment carries potential harm for a sex partner. Concealing an HIV diagnosis indicates no depth of disclosure. Some HIV-positive individuals do not disclose their status, yet engage in varying degrees of protected (Semple et al., 1999; Serovich, 2001; Stein, 1998) or of unprotected sex (Kalichman, 1999; Marks & Crepaz, 2001; Reece, 2003; Semple et al., 2004). Others engage in what they consider varying degrees of “disclosure.”

There are various ways of disclosing an HIV status to sex partners. Disclosure of an HIV status includes verbal or written words that can be relayed in person or not. Some individuals consider leaving clues about their positive serostatus—such as HIV newsletters and medication—a form of disclosure (Klitzman, 1999). In any self-disclosure research it is important to ascertain whether subjects verbally disclosed. One researcher (Serovich & Mosack, 2003) categorized “not a disclosure” as instances where respondents felt the sex partner knew their HIV status from some other source. The “not a disclosure” data was not included in the analysis.

Who will tell what to *whom*? Self-disclosure involves revealing personal information about oneself to another. The act of disclosing is viewed as central to the development of clear relationships (Collins & Miller, 1994). Magic Johnson publicly

disclosed his HIV-status which was correlated with increased condom use in adolescents (DiIorio, Dudley, Soet, Watkins & Maiback, 2000). Private disclosure may involve a therapist or counselor, while confidential disclosure may involve hospital personnel such as nurses or doctors. Intimate disclosure most frequently involves sex partners.

In the HIV disclosure literature, seropositive individuals tend to be selective in choosing recipients of information about their serostatus, including sex partners (Semple et al., 1999; Stein et al., 1998). Variations in disclosure correlate to level of relationship status, number of sexual partners, and serostatus of sexual partners. For example, Stein et al. (1998) found that HIV-positive individuals with one sexual partner were three times more likely to disclose their serostatus as compared to persons with multiple partners.

The act of disclosing something discomfoting is viewed as central to the maintenance of psychological well-being (Collins and Miller, 1994), because disclosure has potential benefits related to stress release and emotional catharsis (Jourard, 1971; Semple, 1999). Yet, disclosure is challenging for persons with HIV because the diagnosis can provoke anxiety, and perceived as well as actual threats to well-being (Serovich, 2000). The current body of literature on self-disclosure has contributed significantly to our understanding of the personal and emotional challenges involved in the disclosure process. Less attention, however, has been paid to the cognitive processes and reciprocal social influences that may underlie disclosure behavior (Semple, Patterson, Shaw, Pedlow, & Grant, 1999).

Social Cognitive Theory (Bandura, 1986) suggests that among the mechanisms of personal agency, none is more central or pervasive than the belief of personal efficacy.

To be an agent is to intentionally make things happen by one's actions. One assumption about disclosure is that people intentionally manage disclosures to control their social realm and to achieve personal and social goals. From a cognitive decision-making standpoint, an individual with HIV is said to attempt to exercise some control over when, who, and how others know this private information (Greene et al., 2003). This social cognitive perspective is intriguing when examining the complex underpinnings of disclosure behavior (Derlega, Metts, Petronio, Margulis, 1993; Greene, Derlega, Yep & Petronio, 2003), especially because Social Cognitive Theory posits that self-efficacy beliefs affect adaptation and change. If people are able to cognitively view disclosure as do-able with outcomes that are manageable, behavior change is likely to occur.

Outcome expectations vary considerably in relation to disclosure of HIV seropositivity. For example, an individual may anticipate feeling better about one's self, supported, affirmed, and/or that things will turn out positively, with problems being avoided, after disclosing his or her serostatus to sex partners. Or the individual may expect the opposite. With self-disclosure of an HIV-positive serostatus to a sex partner, the individual chooses—amidst myriad outcome expectancies—to indeed disclose (Williams, 2001). Further examination of the concept of perceived self-efficacy—and attendant outcome expectancies—is warranted in HIV-disclosure research.

In summary, a definition of self-disclosure synthesized from the literature of self-disclosure of health status is as follows: to reveal previously concealed and potentially stigmatizing information to one or more persons with the intention of maintaining a relationship and/or improving one's sense of psychological wellbeing (Sullivan, 2001).



Those factors found most critical in the study of self-disclosure of HIV to sex partners include: 1) disease chronology; context of relationships; sexual orientation; number of sex partners; ethnicity; communication about sex; and social and situational influences that influence self-efficacy and perceived expectations. These factors will be addressed in the following literature review of male self-disclosure of HIV status to sex partners.

### *Self-Disclosure of HIV Serostatus to Sex Partner Literature*

Research articles reviewed in this analysis were selected through computer searches using online databases (e.g., Medline, AIDSLINE, CINAHL, and Psychlit). Only peer-reviewed publications from 1996 onward were considered, because self-disclosure research prior to this time occurred when fewer treatment options were available. Upon the introduction of highly active anti-retroviral combination drug therapies in late 1995, clients using them experienced fewer outward symptoms of infection for considerably longer periods of time (Vanable, Ostrow, McKirnan, Tawaditep, & Hope, 2000). While, previously, decisions to self-disclosure were frequently forced as symptoms manifested, currently, many decisions to disclose an HIV diagnosis are being made by significantly less-symptomatic individuals.

One intent of this literature review is to focus on male self-disclosure of HIV to sex partners. A wealth of salient data exists on disclosure by women of varying ethnicities and on men and women disclosing to family, friends, and others, and on factors influencing concealment of a positive serostatus. Each of these subject areas is equally pertinent, salient, and warrantable of review and analysis. Yet, limiting the focus of research to HIV-positive male self-disclosure to sex partners is appropriate here.

Intrapersonal aspects of the self along with interpersonal, sociocultural, and situational factors serve to frame this literature review.

### *Background Factors*

#### *Age, Education and Socioeconomic Status*

Almost all of the studies gathered background data on the HIV-positive respondents, but not all reported relationships between demographics and disclosure. Serovich and Mosack (2003) found that men who told casual partners were more highly educated. Reported age of respondents ranged from 18 to 61 years, highlighting the wide span in age of the seropositive men who were sexually active. Serovich and Mosack (2003) found that sex partners who did not receive a disclosure were on average younger, while Kalichman (1999) found younger age of a respondents' sex partner associated with higher risk of practicing unprotected sex. These findings suggest younger male sex partners of seropositive men are at risk. No differences in age, education or economic status were found between men who did or did not have sex with anonymous partners (Semple et al., 2004). No other relationships between disclosure and age, education or socioeconomic status were noted in the literature covered in this review. Crepaz and Marks (2003) did report that increased income was correlated with safer sex practices but not with self-disclosure.

In several of the mixed ethnicity samples large percentages (49% – 75%) of participants with AIDS and/or HIV reported earning less than \$10,000/year (Crepaz & Marks, 2003; Marks & Crepaz, 2001; Zea et al., 2003; Zea et al., 2004). This is

consistent with reports of AIDS and HIV risk being closely associated with poverty in minority populations (Kalichman, 1999). While only one of the studies gathered data on whether participants exchanged sex for money, food and/or other survival needs (Semple et al., 1999), these behaviors might influence disclosure practices (Kalichman, Greenberg & Abel, 1997).

### *Race/Ethnicity*

Researchers have found that communication about sensitive topics, including HIV seropositivity, is influenced by cultural background (Chin et al., 1999; Kanuha, 2000; Zea et al., 2004). Of the sixteen studies with sample ethnicity documented, eleven included a majority of men of color ranging from 60% to 100% (African American, Latino, Hispanic, "Other"). The limited number of studies focusing exclusively on white males (Serovich, 2001; Serovich & Mosack, 2003) underscores a shift in research emphasis driven by the changing demographic profile of HIV/AIDS in the United States. This reflects the declining incidence among Caucasian men coupled with rising prevalence rates among ethnic minority men (CDC, 2003; Greene, Frey & Derlega, 2002). Yet, data on Caucasian men who have sex with men (Kalichman, 2000; McFarland, Chen, Weide, Kohn, & Jeffrey, 2004; Serovich, 2001; Serovich & Mosack, 2003) suggest that nondisclosure of HIV status is occurring in the context of riskier sexual behaviors. For example, unprotected sex among HIV-positive men who have sex with men (MSM) was associated with the perception that a partner's viral load was low (Kalichman, 2000). In another study, seropositive men who have sex with men (MSM) were three times more likely to report unprotected sexual practices with HIV-negative and unknown partners

after they started taking protease inhibitors, compared with their behavior before initiating therapy (Miller, Myers, & Boufassa, 2000).

Two studies included Latino respondents exclusively (Zea et al., 2003; Zea et al., 2004), while four grouped Latino, Asian, Hawaiian/Pacific Islanders and multiracial subjects into one “Other” category. No studies listed Asian or Hawaiian/Pacific Islanders separately despite recent increases in HIV/AIDS diagnosis in the U.S. among these populations (CDC, 2003). Stein et al. (1998) found that Caucasian and Latino seropositive men were three times more likely to disclose to sex partners than African American men. The authors raised the possibility that African Americans feel more shame and dishonor about their HIV diagnosis. Among Latino gay men, nearly 20% did not tell any significant other for a year after diagnosis, with decreased rates of disclosure to casual sex partners (Zea et al., 2004). The authors presented a discussion of Latino culture characterizing it as one of “silence about homosexuality” and suggested that men less acculturated into the U.S. may adhere to norms limiting conversation about topics associated with homosexuality, such as HIV status. Some men choose not to reveal their HIV-positive status because they do not want to elicit suspicions about their sexual orientation (Zea et al., 2004). Other researchers have also reported higher rates of male disclosure to significant others among Caucasian versus Latino men (Hays et al., 1993; Mason et al., 1995). Semple et al. (1999) suggested that future studies of disclosure behavior include a larger number of ethnic minority participants with analyses stratified on levels of acculturation.

## *Sexual Orientation*

Sexual orientation is an important distinguishing criterion for analysis in HIV self-disclosure research. In a national probability sample ( $N = 1397$ ), Ciccarone et al. (2003) reported that HIV-positive heterosexual men were significantly more likely to abstain from sex. For those who engaged, 19% reported having any sex without disclosure compared to 42% of the gay or bisexual men, who were also more likely to have sex without disclosure in nonexclusive than exclusive partnerships. Differences have also been reported in the sexual and communication practices among homosexual and bisexual men (Kalichman et al., 1998; Semple et al., 1999; Wolitski, Reitmeijer, Goldbaum & Wilson, 1998). For example, homosexual and bisexual men who were more open about their sexual orientation and felt more connected with the gay community were more likely than their counterparts to talk about serostatus (Kalichman et al., 1998; Wolitski et al., 1998). Yet more recent data associates sexual risk with gay community attachment in a group of Asian and Caucasian men (Mao, Van de Ven & McCormick, 2004). Again, discussions about risk for HIV with a sex partner are sometimes coupled with disclosure of lifestyle, which may have been kept secret. This may be especially relevant in the case of bisexual men and injection drug users whose partners are unaware of all aspects of their lifestyle (Kalichman et al., 1998; Wolitski, 1998). In related research Wolitski et al. (1998) found that the vast majority (94%) of female sex partners of male injection drug users were aware of their HIV risk, while less than one quarter (21%) of female sex partners of bisexual men were aware of their risk.

While differences in self-disclosure based on sexual orientation were cited, only a few studies in this review identified heterosexual men for comparative analysis, representing less than one quarter (5% to 24%) of the sample populations. Disclosure results pertaining to sexual orientation were also confounded in mixed-gender studies, as “heterosexual” results referred to both men and women (Semple et al., 1999; Stein et al., 1998) or were not identified (Kalichman, 1999; Kalichman & Nachimson, 1999).

#### *HIV Health Status and Disease Chronology*

Several studies have reported on chronological aspects of disclosure (Cusick & Rhodes, 1999; Crepaz & Marks, 2003; DeRosa & Marks, 1998; Kanuha, et al., 2003; Mueller et al., 2001; Marks & Crepaz, 2000). Many studies were designed with a minimum length of time since diagnosis as an inclusion criterion, ranging from two months to six months (Cusick & Rhodes, 1999; Kanuha et al., 2003; Klitzman, 1999; Yoshioka & Schustack, 2001). This inclusion criterion may be in response to a typical pattern of lower levels of self-disclosure soon after testing positive followed by more disclosure, abstinence and/or other protective behavior as individuals come to terms with their illness (Kanuha et al., 2003).

Results collected on most recent sex partners (Crepaz & Marks, 2003) showed that both self-disclosure and safer sex were associated with having HIV for longer than three years, while unsafe sex without self-disclosure was associated with having HIV for less than three years (Marks & Crepaz, 2001). Reece (2003) found that men who were already diagnosed with AIDS scored higher on perceived responsibility to disclose to sex partners with no further analysis presented. From a qualitative framework (Klitzman,

1999), gay men shared that it took time to accept the diagnosis, while some waited several months to even years before disclosing to sex partners. Having time alone with knowledge of the illness was needed to simply come to grips with the implications of being seropositive. Some reported waiting to disclose until they were more ill. Holt and Court (1998) found variability in timing of self-disclosure, with minimal disclosure occurring during the immediate post-diagnosis period. Nondisclosure was related to participants' perceptions of their exercising control, and to their focusing on their own immediate condition, which was accompanied by social isolation.

In a qualitative study, Cusick and Rhodes (1999) concluded that disclosure to "targets"—intimate and others—was accomplished in a series of steps. Disclosure occurred after subjects experienced changed attitudes toward their positive status, with disclosure no longer seen as a potential threat to relationship development. Self-disclosure was typically planned or timed to take advantage of suitable moods or environments. If the target was not responsive, the topic of self-disclosure became taboo. The steps toward self-disclosure included deciding, selecting targets, and then considering imagined interactions in which self-disclosure would take place. If the imagined dialogues predicted rejection or upset, then self-disclosure would be avoided. These findings are significant when thinking about persons who want to engage in sexual encounters, yet find the topic of self-disclosure taboo. They may engage in risky behavior rather than face anticipated rejection or upset. The study was not limited to sex partners only.

The Kanuha et al. (2003) qualitative interviews revealed that how a person was dealing with his or her HIV serostatus influenced disclosure to sexual or needle-sharing partners. A typical pattern pointed to low levels of disclosure soon after notification of HIV infection. As the person came to grips with living with HIV, disclosure, abstinence, or protective behavior increased.

However, the pattern of lower levels of self-disclosure early in the disease was not consistent for the respondents in the studies reviewed. Stein et al. (1998) found no association between length of time since diagnosis and disclosure to intimate partners, and Serovich (2000) found that the Disease Progression Model of Disclosure was not predictive of disclosure to sex partners. According to the model, individuals disclose when they become ill, as symptoms can no longer be hidden. HIV status is frequently measured using immune deficiency markers such as CD4 cell count, number of opportunistic infections, and symptomatology (asymptomatic through AIDS), and correlations with disclosure of HIV to sex partners tested (Bingman et al., 2001; DeRosa et al., 1998; Holt, et al., 1998; Kalichman, 1999; Kalichman & Nachimson, 1999). This measurement is used to determine if HIV symptoms influence disclosure rates, and the data is not conclusive.

### *Contextual and Psychosocial Factors*

#### *Intrapersonal*

*Self-efficacy and outcome expectations.* Three studies discussed or tested aspects of Bandura's (1986, 1997) Social Cognitive Theory in light of perceived self-efficacy



and/or aspects of outcome expectations (Kalichman & Nachimson, 1999; Semple et al., 1999; Semple et al., 2004). Self-efficacy is a belief in one's own ability to perform a specific behavior under specified conditions. Outcome expectancy represents one's estimation that a given behavior will result in a specific outcome, and involves a judgment as to the consequences of a behavior. An additional five studies (Klitzman, 1999; Marks & Crepaz, 2001; Serovich, 2001; Zea et al., 2003; Zea et al., 2004) investigated aspects of expected consequences of disclosure, suggesting perceived outcomes play a critical role in the process of disclosing an HIV-positive serostatus to a sex partner.

Semple et al. (1999), found that for a sample ( $N = 223$ ) of primarily male (89%) Caucasian (77%) gay and bisexual men (84%) who reported at least one episode of unprotected sex in the last four months, higher self-efficacy and more positive outcome expectancy scores were associated with greater disclosure. For the 18% who did not disclose, lower scores on self-efficacy and outcome expectation were the only variables found significant, and these participants had the greatest number of seronegative or unknown serostatus partners. Similar results were found in a cohort of gay and bisexual men who had unprotected sex with an anonymous sex partner of negative or unknown serostatus (Semple et al., 2004). Comparing men with or without anonymous sex partners, rates of disclosure were significantly lower for men with anonymous partners, as were scores on every self-efficacy and outcome expectancy scale, while rates of unprotected sex were five times higher. Kalichman & Nachimson (1999) also found similar results in an ethnically diverse sample of men and women ( $N = 266$ ) based on

most recent sexual experiences. Men who had not disclosed also had the lowest self-efficacy scores for condom use. The authors suggested that the association between disclosure and self-efficacy may be bi-directional; adverse experiences with disclosure may, in turn, lead to decreased disclosure in the future. In the three studies, self-efficacy and outcome expectancy scales were newly developed and were found to be internally consistent.

Klitzman's (1999) qualitative data on gay men suggested that some of the men disclosed to avoid expected feelings of guilt after having sex without disclosing. Rejection was the most common perceived negative consequence for not disclosing, while some men discussed actual rejections by potential sex partners after disclosing. Expectations of an angered partner and of losing control of private information also influenced men's reasoning not to disclose. One man captured this by saying, "You don't have control over it anymore, and who knows."

In two of the remaining reports, perceived consequences of disclosure (Marks & Crepaz, 2001) and/or outcome expectations (Derlega et al., 2002; Zea et al., 2004) were underlying threads as well. Zea et al. (2003) discussed the Sociocultural Model of Self-Regulation (Diaz, 1998), which includes ideas about motivation and outcome expectations. Serovich (2001) used path analysis to test two self-disclosure "theories"—disease progression and consequence of HIV disclosure—while examining disclosure. Findings from these studies were not conclusive, but highlighted self-efficacy and thoughts about consequences of disclosure as potential determinants influencing the process of disclosure of HIV to sex partners.

## *Interpersonal*

*Relationship status/context of relationships.* A review of the HIV self-disclosure to sex partner literature illustrates the substantial effort and challenge researchers have faced in their attempts to understand how seropositive persons--who do and do not disclose--view themselves in relation to sex partners. Invariably, disclosure of HIV status was correlated with relationship status or type, with numerous definitions of relationship status used. Attempts at measuring strength of relationship were also evident with terms such as level of involvement; degree of intimacy; and depth of relationship. Many respondents reported having "primary" partners, yet also engaged in unprotected intercourse with partners outside the "exclusive" relationship without disclosure to their "primary" (Kalichman, 1999; Klitzman, 1999; Serovich, 2001; Stein et al., 1998). Reasons for disclosure to sex partners included the perceived importance of emotional bonds, and feelings of trust or of confidence (Klitzman, 1999; Semple et al., 1999). Stein et al. (1998) found that high spousal support was associated with disclosure. Still, 12 percent of those with spouses or significant others did not disclose. Utilizing an emotional support scale in a mostly male (90%) sample ( $N = 223$ ), Semple et al. (1999) found no association between emotional support and disclosure for the men. There was an association for the female respondents ( $N = 23$ ), but most women reported being with a spouse or steady partner. Narrative data (Klitzman, 1999) indicated that in general gay male respondents neither asked about nor discussed HIV status at bars and during one-night stands. Reasoning included that a close or trusting relationship with a partner was needed for disclosure, and was summed up in the narrative, "How can I tell you when I

don't know you?" (Klitzman, 1999, p. 41) Overall, the data point to a critical fact: sex without disclosure is occurring in- and outside the context of primary partnerships in cumulatively representative samples of men who have sex with men and bisexual men, and also in populations of heterosexual men and women.

*Safe sex.* Four of the studies reviewed provided data that allowed for an examination of the association between disclosure and safe sex (Ciccarone et al, 2003; DeRosa & Marks, 1998; Kalichman, 1999; Wolitski et al., 1998). In the majority, measurement of safe sex was along the lines of consistent condom use, with unsafe sex being anything other than consistent condom use. Study findings were mixed, with three reporting positive associations between disclosure and condom use, and with the associations influenced by partner serostatus, by relationship status or by gender. In a multiethnic sample ( $N = 255$ ) of men recruited in Los Angeles (DeRosa & Marks, 1998), safer sex was more likely to occur in the context of disclosure with respect to sero-negative partners but not for positive or unknown serostatus partners. Second, among a sample ( $N = 701$ ) of mostly white MSM from four United States cities (Wolitski et al., 1998), a positive association between disclosure and consistent condom use among non-primary partners emerged. No association was reported with primary partners. Third, Kalichman & Nachimson (1999) reported a significant positive association for men, but not women, with higher rates of condom use among disclosers than among nondisclosers.

Four studies reported no significant positive association between subjects who disclosed and consistent use of condoms (Ciccarone et al., 2003; Crepaz & Marks, 2003; Kalichman, 1999; Marks & Crepaz, 2001). Looking at safe sex communication with a

most recent at-risk sex partner (negative or unknown serostatus) (Crepaz & Marks, 2003; Marks & Crepaz, 2001), disclosers were no more likely to have engaged in protected sex than nondisclosers, in the mostly ethnic minority (79 – 80%) samples of gay and bisexual men (76 – 81%). A combination of disclosure and discussions about safer sex produced significantly higher rates of protected anal or vaginal intercourse (84 – 94%). Marks and Crepaz (2001) suggested that “informed exposure” might support one’s commitment to the relationship, or be related to disinhibiting effects of substance use prior to sexual activity.

Reduced concern about unsafe sex and transmission risk may be a factor in informed exposure, as recent studies suggest that the availability of combination anti-retroviral combination therapy has contributed to a rise in risky sexual behaviors among gay men (Kelly et al., 1998; Suarez et al., 2001). Most disconcerting is that thirteen percent of the men who engaged in unprotected sex did not disclose to their most recent HIV-negative or serostatus unknown partner, while 12% of those who did disclose similarly engaged in unprotected sex with an at-risk partner. Having HIV for greater than three years was the only correlate associated with both self-disclosure and safe sex) (Crepaz & Marks, 2003).

Methodological considerations hampered objective analyses of results in the final two studies examining the association between self-disclosure and condom use, as these designs did not assess the timing of unprotected sex in relation to disclosure (Ciccarone et al., 2003; Kalichman, 1999). Both analyzed data about “global” (total number of partners over a three month period) sex activity, and whether disclosure and safe sex ever

occurred with each partner. This is not a sufficient measure, as it can not be confirmed that the disclosure *preceded* safer sex. Ciccarone et al. (2003) did not ask about disclosure in the context of specific sexual activities. It is possible that some participants had unprotected sex only after disclosing or protected sex after not disclosing.

*Sexual communication.* Zea et al. (2003) found that asking about a partner's serostatus was associated with disclosure. When the serostatus of a sex partner was known, it was generally because that sex partner had shared the information. Asking about a sex partner's serostatus was considered a way to indicate one's willingness to disclose (Derlega et al., 2002; Zea et al., 2003).

Qualitative interview data (Klitzman, 1999) shed further light on disclosure and communication among a sample of gay men. Self-disclosure often occurred indirectly through hints or in code rather than directly. Hints included leaving HIV medications or Poz magazine in view, and by saying "my ex-lover died of HIV" for examples. Using this approach, individuals avoided the difficulty and possible rejection of disclosure *per se*, while feeling that at least the issue was out there. Research reports found elsewhere (Crosby 2000; Julian, 1997) emphasize that nonverbal attempts of disclosure may be ineffective and extremely unreliable, yet a number of individuals with HIV report using them.

Several HIV-positive men gave no information, others claimed they did not know their status, or that they tested negative a while back, but do not know now. Indirect questioning such as "Are you healthy?" led to misleading affirmative responses despite the respondents knowing what the question was referring to (Klitzman, 1999).

## *Sociocultural*

*Social support.* The role of social support, or lack thereof, as a motivation toward disclosure to family, friends, and sex partners, has received considerable attention in the research literature (Derlega et al., 2002; Kalichman et al., 1998; Kimberly & Serovich, 1999; Perry et al., 1994; Reisen et al., 1997). Sources of social support include HIV counseling personnel (DeRosa et al, 1998; Serovich, 2000), role models who disclose (Moskowitz, Binson & Catania, 1997), and partner, family and peer group support (Kimberly, et al., 1999; Semple et al., 1999).

Several studies explored social support in relation to self-disclosure to sex partners only (De Rosa & Marks, 1998; Klitzman, 1999; Marks et al., 2002; Semple, et al., 2004; Serovich, 1999; Zea et al., 2003). Results suggest that perceptions of support influence disclosure to sex partners differently than disclosure to family and friends and spouses, and that social support may be too broad a construct for determining its relevance in self-disclosure to sex partners. For example, Serovich (2001) used an emotional support scale when testing the consequences of disclosure theory, looking for the effects of said support on disclosure to family, friends and intimate partners. The consequences theory was well supported for disclosure to family and friends, but not predictive of disclosure to sex partners. The author concluded that the emotional support measure was global rather than specific to any particular target, and that sex partners are a uniquely different relationship than family and friends. The need to study more relevant consequential factors for sex partners related to emotional support was suggested.

De Rosa & Marks (1998) found that post-test counseling significantly increased self-disclosure rates to sex partners, and that attendance at an HIV support group was a predictor of self-disclosure to sex partners. Socially desirable responses may have skewed the results in this intervention study though. The utility of post-test counseling and support groups in facilitating self-disclosure of serostatus to others was supported in more recent research as well (Marks et al., 2002).

Using a different approach to examine aspects of support related to self-disclosure to sex partners in a cadre of Latino men ( $N = 129$ ), Zea et al. (2003) found that social isolation was related to less asking about and disclosing of serostatus. No causal direction between isolation and disclosure was determined, but similar results have been reported (Holt et al., 1998; Klitzman, 1999), where social isolation was identified as a form of control, and a way to focus on oneself post-diagnosis. More recently, Semple et al. (2004) found that men who had anonymous sex partners were more likely to be living alone, and were more likely to engage in unprotected anal intercourse without disclosing. Qualitative interview data (Klitzman, 1999) highlighted disclosure as being fueled by a desire for intimacy and support from primary partners.

*Number of sexual partners.* Research findings strongly suggest that the number of sex partners influences self-disclosure, such that the greater the number of partners, the less likely disclosure will occur (De Rosa & Marks, 1998; Stein et al., 1998; Semple, 1999; Serovich 2001). De Rosa & Marks (1998) found that the number of sex partners was an independent risk factor for nondisclosure, with an inverse relationship between the number of partners and rates of disclosure. The likelihood of informing at



least one partner decreased as the number of partners increased, including partners of negative or unknown serostatus. Semple et al. (1999) similarly found that the number of sex partners significantly influenced disclosure. In a sample of primarily HIV-positive gay and bisexual men (90%), over three-quarters (77%) of those with a sole sex partner disclosed all the time, while less than half (42%) of those with multiple sex partners disclosed all the time. MSM reported having more sex partners than heterosexual men, with mean number of encounters with HIV negative or unknown sex partners being 7.5 over a four month period. Serovich (2001) similarly found high rates of casual sex partners for MSM. Stein et al. (1998) found that individuals with one sex partner were three times more likely to disclose than persons with multiple partners. Those who disclosed to all partners cited high spousal support. While people with only one partner were more likely to disclose, 20% had not disclosed to their only partner. Among the persons who had not disclosed to all partners, only 42% used condoms all the time.

### *Situational*

*Serostatus of sex partner.* A pattern of higher rates of disclosure to HIV-positive sex partners was evident in this review (DeRosa & Marks, 1998; Somlai et al., 2001), which is similar to previous research. Men in the samples disclosed more frequently to sex partners who were known to be seropositive (about 90%) than to those who were known to be negative (about half) or to those whose status was unknown (less than 25%). De Rosa and Marks (1998) found that when a partner was known to be HIV-positive, not only did disclosure increase, but more informed negotiation processes related to condom use occurred. Zea et al. (2003) and Derlega et al. (2002) suggest that the differences in

disclosure rates between seropositive and seronegative partners may reflect differences in perceptions of the risk of rejection, among other things, including less perceived rejection with a seropositive partner.

Unique issues related to disclosure and informed unsafe sex practices exist among HIV-positive seroconcordant sex partners though. Many studies excluded men who had HIV-positive sex partners only (Bingman et al., 2001; Marks & Crepaz, 2001; Crepaz & Marks, 2003; Semple, 1999). The most informative research focused on men's disclosure to at least one "at-risk" partner with a negative or unknown serostatus in the context of unprotected sex (Bingman et al., 2001; Ciccarone et al., 2003; Marks & Crepaz, 2001; Reece, 2003). Disclosure was more prevalent with HIV-negative partners than with sex partners of unknown status, suggesting that in those instances where partner serostatus is not discussed, people are at high risk for transmission. Men who disclosed were less likely to have multiple partners of unknown serostatus (Marks and Crepaz, 2003; Semple, 1999). Rates of unprotected intercourse without disclosure ranged from 13% to 17%. Uninformed unsafe exposure was associated with not knowing the HIV status of one's partner, and having tested seropositive for less than three years and alcohol/drug use before sex (Marks & Crepaz, 2001).

*Substance use.* Data on substance use was collected in five of the studies in this review (Parson, et al., 2004; Kalichman & Nachimson, 1999; Marks & Crepaz, 2001; Semple et al., 2004; Stein et al., 1998). Unfortunately, no uniform method was used to measure substance use. Parsons et al. (2004) examined self-disclosure and sexual behavior, specifically among injection drug users, in a cross-sectional ethnically diverse

sample ( $N = 158$ ) of men (51%) and women (49%) using a mixed method approach. As has been typically reported, more respondents disclosed to their seropositive partners. In contrast to findings elsewhere (Serovich and Mosack, 2003), however, more participants disclosed to casual partners than to primary partners before first sexual contact. Narrative data pointed to the distressing experiences of those “eventual” disclosers who disclosed after engaging in sex. This highlights the importance of looking at the contextual aspects of self-disclosure. Stein et al. (1998) queried if participants used injection drugs or if they had an alcohol problem. No significant correlation to disclosure was found. Kalichman (1999) queried about recent and life-time history of injection drug use and similarly found no correlation between substance use and disclosure. There was a significant amount of sexual risk behavior with disclosure, associated with substance use, which has been supported in other studies (Kalichman & Nachimson, 1999; Semple, Patterson & Grant, 2000; Somlai, Kalichman, & Bagnall, 2001). Marks and Crepaz (2001) queried if there was alcohol three hours before each sex encounter, and results suggested that uninformed unsafe exposure was associated with alcohol use. Semple et al. (2004) found that having anonymous sex partners was associated with illicit drug use. The influence of substance use on disclosure to sex partners needs further exploration.

### *Summary*

HIV self-disclosure statistics provide insight into the continued incidence of HIV transmission throughout the U.S. In the 16 studies with quantitative data, 67% to 88% of HIV-positive men reported disclosing to main sex partners. Of great concern though, is that 12% to 33% of subjects reported not disclosing to their primary partners, suggesting

that this population of unknowing sex partners continues to be at risk (Stein et al., 1998). It is important to recall that some young adults have primary partners for short periods of time. The data also highlight that as the number of sex partners increased the likelihood of disclosure decreased, ranging from one quarter (25%) to somewhat over half (58%) disclosing to all sex partners (De Rosa & Marks, 1998; Reece, 2003; Semple, Patterson, Shaw, Pedlow & Grant, 1999). There was a trend of lower disclosure among casual partners for those who had both steady and casual partners.

Men who had casual partners tended to have several of them (Serovich & Mosack, 2003; Semple et al., 2004). The context of some sexual interactions among MSM occurred in arenas where HIV-risk is an unspoken assumption, with higher rates of protection occurring among individuals who talked about safer sex practices and not necessarily disclosure. Marks & Crepaz (2001) found uninformed protection associated with low emotional involvement. Those especially likely to have multiple experiences of unsafe sex with partners who were not informed were those who didn't know their partner status, who had HIV for less than two years and who used alcohol before sex (Marks and Crepaz, 2001).

Differences in self-disclosure rates varied based on sexual orientation (Ciccarone et al., 2003; Crepaz and Marks, 2003; Semple et al., 2004 Serovich, & Mosack, 2003), with gay and bisexual men -- predominantly in nonexclusive partnerships -- disclosing less frequently. A significant number of gay and bisexual men continue to engage in behaviors that place their partners and themselves at risk. Incorrect assumptions by sex

partners about respondents' positive serostatus were reported when serostatus was not disclosed (Klitzman, 1999).

Potential motivators and barriers for self-disclosure have been identified in the self-disclosure research literature. It appears that intrapersonal factors that motivate men to disclose have the most positive impact on disclosure. Perceived efficaciousness for disclosure, along with more positive outcome expectations were the most frequent theoretical constructs embedded in the research associated with disclosure, suggesting that such expectations play a critical role in the process of disclosure to sex partners. The tendency to disclose to sex partners is not considered to be strongly impacted by temperament (Greene et al., 2003), but more as a behavior affected by situational and social contextual factors, including setting, use of disinhibiting substances, and community and cultural attitudes about appropriateness of disclosure, for example. Behavior involves reciprocal interaction of personal, social, and environmental factors (Bandura, 1997).

There appears to be a fairly predictable psychological adjustment period to living with HIV, including coming to grips with disclosing one's status to protect sex partners (DeRosa & Marks, 1998; Kimberly et al., 1995). While more people are capable of disclosing to sex partners three years after diagnosis, there is no certainty that men are then capable of disclosing to all sex partners, as contextual and situational factors influence decision-making.

Interpersonal factors that positively influenced self-disclosure included spousal support and emotional investment and communication about safe sex and about partner

serostatus. Social support was found to buffer anxiety and stress associated with disclosing serostatus to others (Semple, 1999; Semple et al., 2004; Serovich & Mosack, 2003). Men who had more than one discussion about disclosure with health care personnel and those who attended an HIV support group reported higher rates of disclosure (DeRosa & Marks, 1998). In addition, asking about a partner's serostatus led to more disclosure. And, communication between partners about safer sex practices was significantly associated with disclosure as well. It may be that men who feel emotionally supported and who have an opportunity to engage in interpersonal dialogue in the context of intimate experiences create an avenue for a disclosure discussion to occur. Models of risk reduction consider sexual communication to be a key to health-related negotiation between partners (Crepaz & Marks, 2003).

Cultural mores related to discussing sensitive subject matters in general influence male disclosure to sex partners (Zea et al., 2003). Bisexual ethnic minority men can experience triple stigma including HIV, sexual orientation and minority ethnicity, which increases the challenge of disclosing serostatus and sexual behaviors to sex partners as well as to health care professionals (Kanuha, 1999; Stein, 1998; Zea et al, 2004).

Sexual HIV-risk-management is facilitated by disclosure rather than by concealment. This review focused primarily on influences leading to disclosure, rather than to concealment of HIV seropositivity. Factors leading to disclosure are not necessarily the "flip side of the coin" to factors leading to nondisclosure. An analysis of empirical findings about HIV-related concealment could supplement this current knowledge base.

Unfortunately, self-disclosure is not consistently associated with safer sex. Self-disclosure to most recent partners was not strongly associated with safer sex in separate samples of primarily ethnic minority MSM (Crepaz & Marks, 2003; Marks & Crepaz, 2001), with informed exposure (unsafe sex with disclosure) more likely in participants who used alcohol/drugs before sex (Marks & Crepaz, 2001). These data suggest the need to strongly support primary prevention interventions with HIV-positive men which focus on self-disclosure and safer sex communication with sex partners.

#### *Methodological Considerations*

The phenomenon of self-disclosure of HIV seropositivity to sex partners is complex and is moderated by the specific circumstances of an individual and the individual's environment (O'Brien et al., 2003). Myriad research designs exist that attempt to determine trends and/or predictors of HIV serostatus disclosure in a variety of circumstances. All but two (Cusick & Rhodes, 2002; Klitzman, 1999) of the studies in this review were quantitative, descriptive, exploratory surveys, and/or correlational in design with the majority using some form of cross-sectional design to compare rates of self-disclosure between groups. A variety of psychological and social variables were examined to determine relationships between self-disclosure and/or high-risk behaviors of HIV-positive persons (Kalichman, 1999; Marks & Crepaz, 2001; Reisen et al., 1997; Wolitski et al., 1998). Self-disclosure was consistently an outcome variable and was frequently associated with sexual behavior practices (safe, unsafe, compulsive).

*Measurement of self-disclosure.* Methods for measuring self-disclosure were diverse in the sample of research articles reviewed. For example: Reisen et al., (1997)

used a four-point scale including "always" to "never"; Semple et al. (1999) measured the percentage of times disclosure occurred before sex; DeRosa et al. (1998) measured if self-disclosure occurred (yes/no) with individual partners over a two-month period; and, Stein et al. (1998) measured whether participants disclosed to all, or not to all, partners. In any research on self-disclosure it is important to verify if the subjects verbally rather than non-verbally disclosed (by leaving clues). In addition, it is important to ascertain whether disclosure occurred prior to sexual encounters rather than after them. Otherwise, the data could be confounding, as some subjects may report disclosure with the disclosing occurring only after a risky sexual encounter.

The period of recall about which respondents are asked to report can affect the validity of responses if recall is over a long period or about several sexual experiences (De Rosa and Marks, 1998; Kalichman et al., 1998). More recent self-disclosure-to-sex partner research clarifies data on multiple sexual encounters using activity-by-partner checklists over periods of months, because less reliable responses may occur when reports about sexual experiences with different partners are grouped, due to inaccurate recall. Based upon a six-month recall, Bingman et al. (2001) gathered data that included up to the two most recent sexual experiences with partners of HIV-negative or unknown serostatus. This "latest two" approach was said to offer a greater opportunity to detect risky behavior compared to only a most recent sexual encounter, without sacrificing reliability of self-reports.

*Measurement of safe sex.* This review of published literature on male disclosure and unsafe sex revealed several methodological limitations. The greatest concern was the



limited partner-level analyses and failure to assess the timing of HIV disclosure in relation to sexual activity. Research needs to inquire about specific partners and particular sexual incidents. In addition, it is not sufficient to simply assess the number of partners and whether disclosure and safer sex ever occurred with each because, again, we cannot be sure that self-disclosure *preceded* safer sex.

*Gender and sexual orientation.* From a gender perspective, the majority of participants in the research presented were male, but several of the studies included women. While gender was used as a background variable for correlation purposes, general conclusions were not always reported by gender. In addition, data on heterosexual men in the overall analysis was limited, as men who have sex with men represented the majority of the samples. This suggests that obtaining data from heterosexual men is challenging.

Self-disclosure research has evolved over the last decade, shedding light on the importance of clearly specifying inclusion and exclusion criteria based on research questions and target groups. Broader-based studies examining both men's and women's HIV serostatus disclosures over time—to family, friends, and intimate partners have been replaced with studies focused upon specific contextual variables such as self-disclosure to “at-risk” (HIV-negative or unknown serostatus) sex partners, in most recent acts of unprotected sex. In the broader studies it was necessary to tease out data pertaining to sex partners. Unique factors that differentially influenced self-disclosure to sex partners were not clearly evident in the overall conclusions (Derlega et al., 2003; Kalichman, 1999; Kalichman and Nachimsom, 1999; Stein et al., 1998). For example, for those

investigations involving social support and self-disclosure, the construct of support was considered to be different in sexual relationships than in relationships with family and friends.

*Sampling.* Convenience and purposive sampling from large metropolitan cities was used most frequently, with subjects recruited from public health clinics, clinical trials units, mental health care services and longitudinal prevention intervention programs. Subjects in these studies are more likely to be identified with communities and/or social networks that openly endorse preventive health messages, safer sex norms and self-disclosure, which may have influenced responses. In addition, the potential for socially desirable reporting is a potential limitation in any study that does not allow for complete anonymity when reporting on behaviors considered unethical (non-disclosure) or illegal (drug use, placing a sex partner at risk). Exploring rates of self-disclosure in sample of seropositive clients attending prevention intervention programs may promote response biases because of the focus on socially desirable behaviors such as disclosure and safe sex. Self-disclosure research conducted by persons associated with the participants' clinic care may be particularly prone to underreporting of nondisclosure and unsafe sex.

Taking a different approach, Zea et al. (2003) used open venues including bars, dance clubs, public sex areas and other social arenas. The CDC-derived venue-based sampling method has advantages as community-based researchers can identify difficult-to-reach or hidden populations and conduct surveys in settings that are natural to the participants (MacKellar, Valleroy, Karon, Lemp, & Janssen, 1996). Although challenges exist with randomization in venue-based sampling, members of hard-to-reach populations

are included. In light of the challenges of design faced by researchers examining self-disclosure to sex partners, continued methodological refinements, including enhancement of anonymous response opportunities will provide for less confounding variables.

All but two of the studies in this review used a quantitative approach (Cusick & Rhodes, 2002; Klitzman, 1999). While Klitzman's (1999) qualitative study yielded a wealth of salient data pertaining to the thoughts and experiences of gay men toward self-disclosure, those study participants who had not disclosed and then practiced unsafe sex had difficulty talking about such situations in study interviews. In addition, descriptive demographics for the sample need to be included such as identified ethnicity, years since testing positive, and sexual preference.

*Theoretical frameworks.* Several reports provided theoretical bases for framing the respective research, and included motivational, cognitive and social constructs relevant to understanding self-disclosure and risky behavior. The most frequent theoretical constructs embedded in the research were self-efficacy and outcome expectations associated with self-disclosure. Outcome expectancy represents one's estimation that a given behavior will result in a specific outcome, and involves a judgment as to the consequences of a given behavior. A majority of the studies investigated aspects of outcome expectancies, suggesting perceived outcomes play a critical role in the process of disclosing an HIV-positive serostatus to a sex partner. Three studies discussed or tested specific aspects of Bandura's (1986) Social Cognitive Theory (Kalichman & Nachimson, 1999; Semple et al., 1999; Semple et al., 2004), in light of perceived self-efficacy and outcome expectancies. In three of the remaining

reports, perceived consequences of disclosure (Marks & Crepaz, 2001) and/or outcome expectations (Derlega et al., 2002; Zea et al., 2004) were underlying threads as well. Zea et al. (2003) discussed the Sociocultural Model of Self-Regulation (Diaz, 1998), which includes ideas about motivation and outcome expectations. Bingman et al. (2001) chose Equity Theory over Social Cognitive Theory in an attempt to understand the cognitive process involved in HIV-positive persons making attributions about the cause of illness, and how that process influences self-disclosure to sex partner. Serovich (2001) used path analysis to test two disclosure “theories”—disease progression and consequence of HIV disclosure—while examining intentions for self-disclosure and perceived outcomes of disclosure. Overall, it appears that one general direction of HIV serostatus disclosure research is exploring dynamics of self-efficacy and outcome expectations.

Limitations of this literature review of male self-disclosure to sex partners are also evident. Several studies were not reported on in this review because there was collapsing of data across subgroups of men and women making it impossible to determine direct effects of male or female gender on disclosure or safe sex (Cusick & Rhodes, 1999; O’Brien et al., 2003). In addition, while it was deemed necessary to limit the research articles reviewed to those published after 1995 based on the introduction of anti-retroviral drugs at that time, studies that identified ethnic and cultural differences in self-disclosure were not reported on (Mason et al., 1995; Marks et al., 1992) here. Finally, although an ongoing and concentrated search for articles related to self-disclosure was sought, there is the possibility that self-disclosure data from articles were missed because self-disclosure was not a main focus of the paper.

## Chapter 3: Theoretical Framework

### *Social Cognitive Theory*

The information contained in the presentation of Social Cognitive Theory was gleaned from multiple resources including: Bandura's original and subsequent writings on Social Cognitive Theory (1987;1997) and agentics (2001); theory-based self-disclosure research (Kalichman, 1998; Kalichman & Nachimson, 1999Th; Semple et al., 1999); and from critical reviews of Social Cognitive Theory used in HIV-prevention models (Choi, 1998). Acknowledgement of paraphrasing from these writings is warranted, as phrases from the writer's work provide for a clear and accurate presentation here.

To initiate a behavior such as disclosing an HIV status that was previously held secret, one must have some incentive—positive and/or negative—acting as a motivating factor for the behavior to occur (Bandura, 1986; 1997). Social Cognitive Theory (Bandura 1977, 1986, 2001) is a broad conceptualization of human motivation and behavior and has been used as an explanatory model for a variety of health-related behaviors including condom use (DiIorio, Dudley, Soet, Watkins, & Maibach, 2000); risk taking behavior (Fromme, Kim, Latz, Rivet, 1997); parent/child communication about sex (DiIorio, et al., 2001); and self-disclosure of HIV to sex partners (Kalichman & Nachimson, 1999; Semple et al., 1999; Semple et al., 2004).

### *Three Major Constructs of Social Cognitive Theory*

*Behavioral capacity.* Behavioral capacity entails having the skills necessary for the performance of the desired behavior. For example, a person would need the verbal capability to vocalize in order for self-disclosure to occur.

*Efficacy expectations.* Efficacy expectations are beliefs regarding one's ability to successfully carry out a course of action or perform a behavior. Judgments of personal self-efficacy involve the integration of social, cognitive and behavior skills and result in a course of action. Efficacy expectations are coined *perceived self-efficacy* or simply *self-efficacy*.

*Outcome expectations.* Outcome expectations are beliefs that the performance of a behavior will have desired effects or consequences. They are termed *perceived outcome expectations* or simply *outcome expectations*.

#### *Self-Efficacy*

Self-efficacy is a person's ability to cope with a given situation. This capacity is strongly influenced by the person's belief in his or her capacity to mobilize motivational and cognitive resources and actions needed to meet situational demands. Perceived self-efficacy involves: a) individual judgments of one's own ability to accomplish a behavior under a given set of circumstances with personal skills available; b) personal judgments of what one can do, rather than just the skills one has (Bandura, 1988); c) beliefs about performing specific actions in specific settings, and thus do not refer to global situations or personality traits (Costa & Metter, 1994). Self-efficacy influences a person's beliefs about their capabilities to affect what they choose to do, how much effort they mobilize,

how long they will persevere in the face of difficulties, and whether they engage in self-debilitating or self-encouraging thought patterns (Bandura, 2001).

Self-inefficacious thinking creates discrepancies between knowledge and action. When lacking a sense of efficacy, even though one knows what to do and possesses the requisite skills, he or she may not manage situations effectively. Numerous studies have been conducted linking perceived self-efficacy to health promoting and health impairing behavior (DiIorio, Dudley, Soet, Watkins & Maiback, 2000; DiIorio, Maiback, O'Leary, Sanderson, & Celentano, 1997); Kalichman & Nachimson, 1999) and also in the self-disclosure to sex partner literature. For example, Semple et al. (1999), assessed to what extent do perceived self-efficacy and positive outcome expectation influence disclosure behavior to sex partners. Multiple regression analysis was used to predict disclosure on the basis of social cognitive variables, which revealed self-efficacy and outcome expectancy as significant predictors of disclosure behavior.

#### *Outcome Expectancy*

Outcome expectancy involves a judgment as to the consequences of a given behavior. If positive outcomes are associated with performance of a specific behavior, a person is likely to attempt and to persevere; with negative views, likely to give up or attribute the failure to external factors or lack of innate talent (Fromme, Katz & Rivet, 1997). Outcome expectancy often depends on the judgment of how well one will perform (self-efficacy). With more positive views of behavioral outcomes, one is more likely to succeed in performing the behavior. For example, people might disclose when rewards outweigh costs. Of note, outcome expectancy in self-disclosure always involves

a social interaction with another person rather than being solely a self-focused expectancy. People adopt courses of action that are likely to produce positive outcomes, but not just based on anticipated outcomes. Considerable self-direction is needed in the face of competing influences, and people adopt personal standards and self-evaluations that may enhance or override external outcomes (Semple, 1999).

Negative outcomes are actions performed in the belief that they will bring desired outcomes but actually produce outcomes that were neither intended nor wanted.

Negative Outcome expectations documented in the HIV self-disclosure literature include: anticipated rejection; loss of relationship; violence; and personal embarrassment.

Outcome expectancy scales related to HIV are difficult to locate in the scientific literature, and those that have been located do not have published psychometric analysis of scale development available. As outcome expectancy scales with documented internal consistency become available, rigorous research in this arena can take place.

#### *Triadic Reciprocal Causation*

A link between Social Cognitive Theory and the intrapersonal, interpersonal, sociocultural and situational model for identifying variables is used in this research. According to Bandura (1986, 2001), the key to Social Cognitive Theory is the notion of the reciprocal interplay between self-regulatory and environmental determinants of health and behavior, or reciprocal determinism. This means that behavior is determined by the interaction among three elements; the person, the person's behavior, and the environment. The person's actions contribute to creating an environment, and the actions and environment contribute to the person's cognitions or "expectancies." Judgments of



personal efficacy involve the integration of cognitive, social and behavior skills and result in a course of action. Behavior then, involves reciprocal interaction of personal, social, and environmental factors. People must be viewed in their social contexts in order to understand the attitudes and emotions underlying their behavior (family, community ethnic/sexual identity community), as exogenous factors influence an individual's HIV risk-related behavior. These concepts are important when choosing which social, cultural and situational variables to include into a model predicting efficacy for self-disclosure. They also play a functional role in planning intervention programs that highlight guided mastery and self-management treatment approaches with social utility, and modeling at the society-wide level. Thus, this approach has utility in influencing normative societal views about HIV in general and self-disclosure more specifically. Triadic reciprocal causation can be used as a link between Social Cognitive Theory and the intrapersonal, interpersonal, sociocultural and situational structure organizing and examining the variables influencing self-disclosure used in this research.

Bandura (1997) argues that people who maintain strong beliefs in their capability of organizing and executing behaviors that lead to desired outcomes are more successful in achieving those outcomes than those who are uncertain about their capabilities. Models of personal and social change developed in Social Cognitive Theory draw heavily on knowledge of modeling, self-regulatory, and self-efficacy mechanisms. In essence, Social Cognitive Theory can be applied in treatment settings, as cognitions are amenable to change.

Kalichman (1998; 2001) a forerunner in HIV self-disclosure research (Kalichman et al., 2001; Kalichman & Nachimson, 1999; Kalichman, Roffman, Picciano, & Bolan, 1998; Kalichman, Kelly & Rompa, 1997) as well as other HIV disclosure researchers have used Social Cognitive Theory as a framework for research designs and in the development of efficacy scales related to disclosure of HIV. Outcome expectancy has been tested with disclosure (Semple et al., 1999; Semple, Patterson & Grant, 2001; Serovich and Mosack, 2003); alcohol use (Fromme & D'Amico, 2000); condom use (DiIorio, Maiback, O'Leary, Sanderson, & Celentano, 1997); and discussions about sex (DiIorio et al., 2001).

### *Summary*

Based upon the conceptual-theoretical-empirical links between self-efficacy, disclosure, the scientific data from prior research presented on male self-disclosure, the interview data about disclosure and sexual behaviors of HIV seropositive men in Hawai'i (Kanuha, 2000; Kanuha et al., 2003) and upon the clinical and experiential practice guiding the nurse researcher, the aims of this research are to:

1. Describe HIV serostatus disclosure to sex partners in a sample of HIV-positive men living in O'ahu, Hawai'i;
2. Describe self-efficacy for HIV serostatus disclosure to sex partners and self-efficacy for negotiating safer sex;
3. Determine the relationships between demographic, HIV-illness, drug use history, sex partner variables (relationship status, serostatus), self-efficacy, and self-disclosure of HIV; and

4. Determine the relationships between demographic, HIV-illness, drug use history, sex partner variables, self-efficacy, self-disclosure, and the sexual practices (safe or unsafe) of the men in the sample.

In this model, identified independent variables include demographic and contextual factors and the variables of self-efficacy for disclosure and self-efficacy for safer sex. The dependent variables include self-disclosure and condom use (safe sex practices).

## Chapter 4: Methodology

### *Research Design*

A repeated measures descriptive survey design was used for this research. The study explored patterns of male self-disclosure of an HIV-positive serostatus to sex partners and patterns of safe (condom use) or unsafe sexual behaviors in relation to self-disclosure. Participants were asked about factors pertaining to their sexual activity over the last three months, including more detailed information pertaining to a possible total of three most recent sex partners during the retrospective three-month period.

In this research format, self-disclosure and condom use were dependent variables. A variety of demographic, contextual, and self-efficacy variables were examined as potential factors influencing disclosure of HIV status to sex partners and safe sex behavior. These independent variables included: demographics (age, ethnicity, etc.); HIV-related illness factors; patterns of alcohol and drug use; self-efficacy for self-disclosure and for safe sex; and sex partner variables including relationship status and sex partner serostatus.

### *Sample Selection*

Participation in the research was voluntary with subjects selected by convenience sampling. The population recruited for the study included sexually active adult (eighteen years of age or older) men living in O'ahu, Hawai'i who were diagnosed with HIV for at least six months. Additional criteria for inclusion were English literacy and writing skill. Inclusion criteria were reviewed with all potential subjects by the principal investigator prior to inclusion in the research.

### *Sample (Recruitment) Procedure*

From January through March 2005, participants were recruited from a variety of settings in O'ahu, Hawai'i, through both active outreach and passive recruiting (posters and flyers), in the following manner:

1. Social service provider recruitment: The investigator contacted several HIV-prevention outreach workers and social service and clinic personnel on the island of O'ahu known to work with HIV-positive clients, and informed them of the research. These key informants were asked to describe the project to potential participants, with the responsibility on the participant to contact the principal investigator for a confidential screening interview.

2. Advertisement: An IRB-approved flyer (Appendix C) with a contact number of the principal investigator was distributed to members of the AIDS community on O'ahu in a variety of ways including: 1) as an insert to a newsletter distributed to about 500 clients by the Life Foundation, an AIDS service organization; 2) via an electronic mail listserve, DaCoconutWireless, which provides HIV/AIDS awareness resources and Hawai'i-based news to people living with HIV/AIDS and people involved with HIV/AIDS; and 3) postings at social service sites such as foodbanks and assisted living environments for people living with HIV. Potential participants interested in the study were instructed to contact the principal investigator by phone to confirm eligibility and to learn where the surveys would be administered.

3. Snowball Sampling: Study participants were asked to refer others in their social network who might be interested in participating in the survey. Some participants who completed the survey also provided additional resource sites for posting flyers such as at bathhouses known to be areas where high-risk sexual activity occurs and AIDS-related social functions which draw members of the AIDS community together.

Men interested in participating were directed to contact the principal investigator by phone. For those men who called, the principal investigator verified HIV status by assessing knowledge of HIV, disease status and HIV treatments the person was engaged in. Potential participants were informed that all responses would be confidential and completely anonymous and that names would not be needed for participation and would not appear on any paperwork. All those who met eligibility criteria were told of upcoming survey administration dates and times.

Data collection occurred during seven survey administration sessions over a three month period from January 2005, through March 2005. All surveys except one were administered by the principal investigator at the Foodbasket, a social service site in Honolulu, Hawai'i, that provides lunches and food supplies two days per week to clients living with HIV/AIDS. One additional survey was administered at an AIDS fundraiser to the only client self-identified as not be able to attend the Foodbasket.

For each survey administration session at the Foodbasket, the principal investigator arrived before lunches were served and set up a survey distribution table with a research flyer posted in plain view that described inclusion criteria for the study. For people who showed interest in the survey, the principal investigator offered a brief

explanation of the purpose of the study and directed the potential participants to review the posted inclusion criteria for participation. The detailed consent form was also available for review and was included in the questionnaire booklet. The principal investigator emphasized that no identifying information was to be collected, allowing for confidential and anonymous responses. Surveys were self-administered unless reading assistance was required. A payment of twenty dollars in cash was given to each participant upon completion of the survey.

### *Instruments*

All participants were asked to complete a survey entitled, "Health, Social Relationships and Sexual Behavior of HIV-Positive Men Questionnaire Booklet." The booklet contained three sections: 1) the Background and Health Status Form (Appendix F); 2) a sex partner by situation checklist (Appendix G); and 3) the HIV Serostatus Disclosure and Safer Sex Self-Efficacy Scales (Appendix H). A description of these measures and how they were used in statistical analysis follows.

### *Demographic Measures*

Demographic and background data collection included: age; ethnicity; time living in Hawai'i; education level; employment status; income; and sexual preference (homosexual, bisexual, heterosexual).

### *HIV Health Status Measures*

Data pertaining to participants' HIV-related health status was collected and included: length of time since diagnosis; current disease status (HIV or AIDS); CD4 cell count; anti-retroviral medication use (yes/no), HIV-related hospitalizations (yes/no); and

HIV-related symptoms experienced in the past three months. The question about symptoms was open-ended requiring written responses. Symptoms were used as a frequency variable, and also categorized into groups of similar symptoms, such as fatigue, tiredness, and lack of energy in a “Fatigue” group, and symptoms determined to be outward indicators of HIV disease, such as opportunistic infections and tumors.

### *Contextual Variables*

*Alcohol and substance use measures.* Alcohol use and other substance use were measured in two ways. In the Demographic and Health Status form, a comprehensive assessment (three months) of injection drug, alcohol, and other non-alcohol substance use history was obtained. Participants reported on whether or not they had used injection drugs; shared injection drug use equipment; or used alcohol, ice, marijuana, crack/cocaine or other drugs over the last three months. A comprehensive assessment of the number of times alcohol was used before sexual intercourse was also measured. However, because of additional drug use history data collected before each sexual experience (as described next), this data was not included in additional statistical analyses.

Kalichman and Nachimson’s (1999) method of assessing substance use was also used for this study and included obtaining data on whether respondents drank alcohol or used non-alcohol substances before engaging in sexual activity. Kalichman, Heckman, & Kelly (2001) found this measurement format appropriate for three reasons: 1) assessment of substance use in relation to sexual behavior gives a more precise assessment of the link between these two behaviors than does an assessment of global substance use over a



given time period; 2) a substance use before sex measurement allows participants to report substance use before sexual activity whether or not unprotected intercourse occurred, and; 3) the retrospective time frame can be matched to the time frame used to assess sexual behavior. In this manner, substance use prior to each of the last three most-recent-sex-partner episodes was assessed. One open-ended “other [drugs]” question offered participants the opportunity to write in substances other than those listed in the survey.

*Relationship status.* Participants were asked about the status of their relationship in two ways. The first was as an assessment of their partnership status at the time of the survey. Response options included: 1) not having sex; 2) sex with more than one partner; 3) sex with one partner for less than three months; and, 4) sex with one partner for greater than three months. In addition, in the sex-partner-by-activity check-list, the relationship status of the three most recent sex partners was assessed. Relationship categories were committed, regular, casual and anonymous, with brief descriptions of the categories for the reader.

*Partner serostatus.* For the global assessment of sexual activity over the last three months, respondents filled in the number of times they had sex, and the times they disclosed with men and women based on sex partner serostatus (positive, negative and unknown). These values were used to create percentage variables for the disclosure rates to seropositive, seronegative and serostatus-unknown partners. Partner serostatus was also assessed based on the partner-by-activity data for each sex partner reported. Participants were prompted with answers to choose from, including, “They told me they

were never tested for HIV,” “They told me they were tested and that they did have,” or, “We never discussed if they were tested.”

*Self-Efficacy for HIV Serostatus Disclosure and Safer Sex Self-Efficacy Scales*

The HIV Serostatus Disclosure and Safer Sex Self-Efficacy Scales (Kalichman et al., 2001) are a set of four scales to assess self-efficacy for disclosing HIV status, and self-efficacy for negotiating safer sex. This instrument was developed using the theoretical definition of self-efficacy from Bandura’s (1997) Social Cognitive Theory. Self-efficacy is defined as the self-evaluative belief held by an individual that he or she can effectively perform a specific behavior under specified conditions (Bandura, 1997). Kalichman et al. (2001) cited four studies conducted among men and women living with HIV-AIDS to systematically develop this instrument for assessing self-efficacy to disclose HIV status to sex partners and negotiate safer sex practices.

*Number of items.* The scales (Appendix H) are made up of four sets of two scenarios—a total of eight scenarios—depicting situations in which persons with HIV encounter potential sex partners. Three of the scenario sets are relevant to self-efficacy for disclosing to a seronegative or unknown sex partner.

*Example: Story 1 Version A.*

“This week has been difficult for you and you want to forget all of your problems for a while. You go out walking and meet up with some people you know. You go off with them and have a drink to relax. Even though you haven’t had much to drink you feel it affecting you. One of your friends introduces you to someone

you have seen before and felt attracted to in the past. This person seems to be making it clear that they want to have sex with you. You feel interested.”

Subsequently, the initial two self-efficacy-for-disclosing questions are repeated across each of the first six scenarios. For example, Question One reads: “How confident are you that you could make an effective decision of whether to tell this person you are HIV-positive in this situation?”

The last set of scenarios is relevant to a primary partner or spouse who is aware of the subject’s HIV-positive serostatus, eliminating the need for self-efficacy for disclosure questions. Therefore, there are three sets of scenes (for a total of six scenes) relevant to self-disclosure decisions, and four sets of scenes (for a total of eight scenes) relevant for safe sex decisions. The final two questions in each of the eight scenarios are exactly the same across scenarios and pertain to self-efficacy for negotiating safe sex. For example, Question Four reads: “How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?”

Using the scales, participants judge their capability within and across domain-relevant activities as well as across varying levels of situational demands (Kalichman et al., 2001).

*Response format.* Self-efficacy beliefs are assessed using an ascending scale of perceived ability to perform the action, which is consistent with social cognitive theory (Kalichman & Nachimson, 1999). The scales were originally developed on an 11-point scale ranging from 0 = “cannot do,” to 10 = “certainly I can” (Kalichman et al., 2001). Upon personal correspondence with Kalichman in August, 2004, it was recommended

that the scale be presented in a 101-point format ranging from 0 = “cannot do,” to 100 = “certainly I can” because of the potential for ceiling effects with the original format, noted by the scale author. These recommended changes were incorporated into this study design.

*Scoring.* Four self-efficacy scores are obtained: two scores for self-efficacy for HIV self-disclosure decision-making (Disclosure Decision-Making A; Disclosure Decision-Making B), and two scores for self-efficacy for negotiating safer sex practices (Safer Sex Initiation; Unsafe Sex Refusal). To obtain scores, self-efficacy ratings are summed across behavioral situations (because the questions are identical across the situations), then averaged. Because situations 4a and 4b involve a long-term partnership, self-efficacy for self-disclosure is not relevant. Thus, the two disclosure decision-making scores are summed across the first six situations, and then divided by 6 (for a maximum score of 100). Safer sex scores are summed across all eight situations, and then divided by 8 (for a maximum score of 100).

Thus, summing the items for each of the two self-efficacy-for-disclosure scores, across six scenes relevant to disclosure, allows for the computation of mean rating scores for two disclosure decision self-efficacy scales. Higher scores indicate: 1) higher self-efficacy to make an effective decision to disclose, and 2) higher self-efficacy to know whether or not a situation is safe for disclosing. Similarly, summing the items for each of the two self-efficacy-for-safer-sex-behavior scores across all eight scenes, allows for computation of mean rating scores for the two safer sex self-efficacy scales. Higher

scores indicate: 1) higher self-efficacy to initiate a discussion of safer sex, and 2) higher self-efficacy to refuse unsafe sex.

*Reliability.* As cited by Kalichman (2001), a second study on the scale development included testing of the psychometric properties of the self-efficacy scales in an ethnically diverse mix of men and women ( $N = 87$ ) who were administered the scales twice over a one-month period. The sample included African Americans (70%), White (25%), and “other” ethnicities (5%). Results showed that the 4 self-efficacy scales demonstrated a high degree of item cohesion at both assessment points; all Cronbach alphas were greater than .90. Internal consistencies were similar for samples of men and women. In addition, the two self-efficacy for disclosure scales demonstrated acceptable test-retest reliability over one-month (.92 - .98), although the test-retest correlations for the self-efficacy scales for negotiating safer sex for both men and women were lower (.56 - .59) than the self-efficacy scales for disclosure decisions (.76 -.79).

*Test for ceiling effects.* Distributions of scores for the self-efficacy subscales were examined because self-efficacy measures are often prone to ceiling effects (Forsyth & Carey, 1998). As expected (Bandura, 1997), self-efficacy ratings occurred at the higher end of the scale range (7.5 - 8.5 [0 - 10 scale]). There was sufficient variability to conclude that the subscales were not limited by ceiling effects, and to warrant proceeding with further evaluations of the scales and their sensitivity for detecting differential responses.

*Internal consistency.* A third study (Kalichman & Nachimson, 1999), was conducted for the purpose of replicating the reliability analysis in Study 2 and for

examining associations between: 1) self-efficacy for rates of disclosure; 2) self-efficacy for negotiating safer sex and sexual behaviors; 3) intercorrelations among scales; and 4) gender differences for the self-efficacy scales in the sample (similar sample to study two based on gender and ethnicity). Results demonstrated that all four self-efficacy scales were again internally consistent, with Cronbach Alpha scores as shown in Table 1.

*Scale intercorrelations.* Correlations were computed among the four scales separately, for men and women as well as for the entire sample. Although the scales were all positively correlated, the intra-domain correlations were of substantially greater magnitudes than correlations between functional domains, suggesting reasonable differentiation between scales assessing self-efficacy for HIV disclosure decisions and self-efficacy for negotiating safer sex.

*Criterion validity.* Findings from the analyses of associations between self-efficacy scales and targeted disclosure behaviors supported validity of the disclosure decision-making self-efficacy scales. Persons who had not disclosed scored significantly lower on the self-efficacy for disclosure scales compared to persons who had disclosed. A similar association between self-efficacy and targeted safer sex behavior supported validity. The correlation between self-efficacy and refusing unsafe sex was not significant. Findings also revealed that persons who used condoms during every act of intercourse endorsed greater negotiating of safer sex than inconsistent condom users.

Table 1.

*Internal Consistency of Self-Efficacy Scales*

<u>Self-Efficacy Sub-Scale</u>	<u>Initial Scale Development Sample: Cronbach Alpha<sup>a</sup></u>	<u>Hawai'i Study Sample: Cronbach Alpha</u>
To make an effective decision to disclose	.94	.96
To know it is safe to disclose	.94	.96
To discuss safer sex	.92	.94
To refuse unsafe sex	.95	.95

<sup>a</sup> Kalichman et al. (2001)

*Convergent validity.* As cited by Kalichman (2001), in a fourth study, to assess convergent validity, participants were administered a measure of intentions to perform specific disclosure and safer sex negotiation behaviors. Health status, depression, and social support were also measured, and participants were asked about self-disclosure to sex partners over a three-month period. “Correlations showed that [self-efficacy] scales were significantly related to intention items with higher degrees of self efficacy related to greater intentions to perform associated behaviors. Correlations between self-efficacy scales and intention measures were consistently greater in magnitude within disclosure and negotiating safer sex behavior domains than between behavioral domains. There was also [a negative] association between social support and self-efficacy scales for disclosure decisions. Self-efficacy for discussing condom use was [not significantly] correlated with HIV symptoms” (Kalichman et al., 2001, p. 294). Self-efficacy scales for effective disclosure decisions and negotiating safer sex were again reliable (alpha = .90 - .95).

#### *Self-Disclosure Measures*

As the dependent variable, self-disclosure was measured in two ways:

*Self-disclosure as a percentage variable.* Self-disclosure was assessed in the Background and HIV-Related Health Status Form as the total number of partners a respondent reported disclosing to in a three month period (Appendix F). As a percent measure, the number of sex partner disclosures that occurred before sex over the last three months, categorized by gender and serostatus of sex partner, was divided by the total number of sex partners in the same gender/serostatus category for the sample. This



technique allowed for comparisons of the likelihood to disclosure across sex partners serostatus type (HIV-positive, negative, or unknown). The percent figure controls for opportunity, making it possible to compare across various categories of sex partners (Semple et al., 1999). If simple frequencies were used, the results could be misleading.

*Self-disclosure-to-recent-sex-partners measure.* The partner by experience checklist was used to gather data on disclosure during the respondents' most recent sex partners experiences (up to three) over the last 3 months. Respondents were asked whether they had disclosed their serostatus to sex partners prior to or after having anal or vaginal sex. Self-disclosure was measured as a categorical variable with responses dichotomized as to whether or not disclosure of serostatus to each sex partner occurred. Additional parameters of respondent disclosure included when disclosed (before or after sex) and how disclosed (verbal or nonverbal). Sex partner variables included gender, relationship status, and serostatus. Additional situational variables assessed included time since last sex, substance use before sex and condom use with anal or vaginal sex.

Using the three-most-recent-partner data, self-disclosure was also measured as a categorical variable with responses dichotomized as to whether or not disclosure of serostatus occurred to all, or not to all, sex partners. In addition, the partner-by-activity disclosure data were used to obtain either rates of disclosure or mean values for disclosure related to demographic, HIV-related health status, and contextual variables.

### *Safe Sex Behavior (Condom Use)*

Participants were asked to report whether they had used a condom every time they had anal or vaginal sex with their most recent sex partner(s) (up to three). In addition, subjects were asked the number of times they used a condom when disclosure did not occur before anal or vaginal sex.

### *Protection of Human Subjects*

The research project was reviewed by the University of Hawai'i Committee on Human Studies and was deemed to be exempt from Department of Health and Human Services regulations regarding protection of human subjects (Appendix D), as subject participation was strictly anonymous. Every subject was informed that the data provided was anonymous and confidential, that research findings would be reported only as group data, that their participation was voluntary and that they could withdraw from the study at anytime without any consequences. The research participants received twenty dollars for completing the questionnaire booklet.

The risk for participants was that questions asked may have caused discomfort while answering them. The consent form (Appendix E) was discussed with each participant and a copy of the form was given to the respondent without a required signature. There was no direct benefit to participants but it was hoped that the information they provide would contribute to further understanding about how to lessen the risk of HIV transmission.

## *Analysis*

### *Power Analysis*

Utilizing a web-based general power analysis program called G\*Power (Buchner, Erdfelder and Faul, 1997), an analysis was done to determine estimated total sample sizes necessary for .80 power with a medium effect size. Power analyses (Appendix I) focused on sample sizes needed to obtain medium effect size for: Chi square analysis ( $N = 88$ ); for correlations ( $N = 82$ ); and for multiple regression ( $N = 85$ ), respectively. The sample goal was set at 88 participants based on this method.

### *Statistical Analysis*

The data were entered and analyzed using the Statistical Package for the Social Sciences (Version 12), with supplementary analysis completed on Excel (XP) and SAS (Version 9). Assistance with statistical analyses and related documentation was offered by a professional statistician/research associate. Level of significance was set at  $p < .05$ . Data analysis consisted of descriptive statistics, correlational analysis and multilevel regression analysis. The Self- Efficacy for HIV Serostatus Disclosure and Safer Sex Self-Efficacy Scales were tested for internal consistency based on the data set provided for this research ( $N = 93$ ). All four self-efficacy scales were clearly reliable (see Table 1) with Cronbach alpha co-efficients all greater than 0.90 (self-efficacy to make an effective decision to disclose, 0.96; to know it is safe to disclose, 0.96; to discuss safer sex, 0.94; and to refuse unsafe sex, 0.95).

### *Aims*

Based on the aims of the research, statistical methods for analysis were completed as follows:

Aim 1: Describe HIV serostatus disclosure to sex partners in a sample of HIV-positive men living in O'ahu, Hawai'i: Descriptive statistics including frequencies, percentages, means, standard deviations and ranges were part of this analysis.

Aim 2: Describe self-efficacy for HIV serostatus disclosure to sex partners and self-efficacy for negotiating safer sex: Descriptive statistics were used. In addition, *t*-tests were used to compare differences in means scores of those men who did and who did not disclose to most-recent (up to three) sex partners.

Aim 3: Determine the relationships between demographic, HIV-illness, substance use history, sex partner variables (relationship status, serostatus), self-efficacy, and self-disclosure of HIV. The repeated measure of self-disclosure (i.e., for each of the three most recent sex partners) required the use of a multilevel regression modeling procedure (Goldstein, 2003; Hox, 2002). Multilevel regression is essentially a generalization of repeated measures ANOVA. When there are repeated measures, it is almost guaranteed that errors will be correlated, and this is a major violation of the assumptions underlying standard regression and ANOVA. However, through multilevel regression (and repeated-measures ANOVA) this issue is directly addressed. Predictor (independent) variables were entered stepwise into the multilevel regression model, starting with the predictor with the strongest relationship to self-disclosure. The dependent variable for this aim was self-disclosure (yes/no) to each of the three most recent sex partners. A separate model

was run for each predictor by itself. The predictor with the lowest p-value was determined to be the one with the strongest relationship. Next, separate models were run with this strongest predictor and only one other variable. The other variable with the lowest p-value was determined to be the next best predictor. The process was repeated until no other predictors had  $p$ -values less than .15. As each additional predictor was entered into the regression, each predictor currently in the model was re-tested for significance and dropped if  $p > .15$ .

Aim 4: Determine the relationships between demographic, HIV-illness, substance use history, sex partner variables, self-efficacy, self-disclosure, and the sexual practices (safe or unsafe) of the men in the sample. Again, the repeated measures (three most recent sex partners) necessitated the use of multilevel regression modeling as discussed above. For this aim, the dependent variable was condom use, which was measured as condoms used every time during anal or vaginal sex or not used every time for each of the most recent sex partners.

## Chapter 5: Results

### *Sample*

Ninety-nine HIV-positive males recruited from O'ahu, Hawai'i between January 2005 and March 2005 met the inclusion criteria for the study. Six participant data sets were eliminated from the analysis either because the participant did not fully meet the inclusion criteria or because of considerable missing or inconsistent data. Thus, the total number of participants included in the final sample was ninety-three ( $N = 93$ ). Since research has never been published to date with a focus on self-disclosure of HIV-status to sex partners using a Hawai'i-based sample, it is important to describe the sample in detail for the sake of comparison with other published research.

### *Demographic Characteristics*

Table 2 presents demographic characteristics of the HIV-seropositive men. The mean age of the sample was 46.3 years ( $SD = 7.3$ ) with a range of 26 – 63 years. The sample represented ethnically diverse backgrounds. The majority of the men were Caucasian (50.0%,  $n = 45$ ), while Asian/Pacific Islander men (23.3%,  $n = 21$ ) were the second highest race/ethnicity group represented. Hispanic men represented 16.7% of the sample ( $n = 15$ ), Multiple Race men (more than one race except multiple white race and part Hawaiian [CDC, 2004]) made up 6.7% ( $n = 6$ ), and three African American men represented the lowest sample ethnicity percentage (3.3%). Table 3 presents an ethnicity table of the men in this research survey sample and also ethnic distributions of cumulative reported male AIDS cases in Hawai'i from 1983 – 2003, and in the United States through 2003. Although direct comparisons cannot be made between the groups of data—because the research survey sample includes 35 men (38.0%) diagnosed with HIV

not AIDS—a general view of the ethnicity breakdown shows that the sample is not unusually different from the cumulative male AIDS cases reported in Hawai'i. There were similar percentages (23.3%/26.0%) of Asian/Pacific Islander men in this study ( $n = 21$ ) and cumulative AIDS case distribution ( $n = 659$ ). While Hispanic men represented 16.7% of the research sample ( $n = 15$ ), they accounted for over three times the percentage of reported male Hispanic AIDS cases in Hawai'i through 2003 (5.0%). Caucasian men were less represented in the survey sample (50%,  $n = 45$ ) than in the cumulative AIDS data (64%). Percentages of African American men in both samples were similar (3.3% and 4.0%). All three sets of HIV/AIDS data by ethnicity—research sample, Hawai'i 1983 – 2003, and U.S. through 2003—show the same general trends in ethnicity proportion. The notable exceptions are: 1) the U.S. data, relative to the other two data sets, show a dramatic under-representation of Asian/Pacific Islanders, and; 2) the research sample is the only one to explicitly classify cross-category subjects as “Multiple Race,” which is a new race/ethnicity listing standard of the CDC adopted by Hawai'i in 2003 (Hawai'i Department of Health, 2004).

Nearly one quarter of the study sample (23.7%) was born in Hawai'i ( $n = 22$ ). Of those men born in Hawai'i, almost all (86.4%,  $n = 19$ ) were of Asian/Pacific Islander descent. The majority of the sample (76.3%,  $n = 71$ ) moved or immigrated to Hawai'i. The mean length of time in Hawai'i for non-Hawai'i-born men was 13.2 years ( $SD = 10.5$ ) with a range of 2 to 40 years.

Most (94.6%,  $n = 87$ ) of the sample self-identified as either homosexual (78.3%,  $n = 72$ ) or bisexual (16.3%,  $n = 15$ ), with only 5 men (5.4%) reporting a heterosexual

preference. The men in the sample were fairly well educated, with only 8.6% ( $n = 8$ ) not completing high school, and with over two-thirds (68.8%,  $n = 64$ ) of the sample reporting some college education. The mean number of years of education reported was 13.7 ( $SD = 1.9$ ) with a range of 8 to 17-plus years. Only 4 respondents (4.3%) reported working, with the vast majority either receiving disability (80.4%,  $n = 74$ ) or unemployed (12.0%,  $n = 11$ ). Slightly over half (52.7%,  $n = 49$ ) of the men reported annual income of \$10,000 or less, which is below the poverty level (\$11, 010) in Hawai'i (Access Project, 2005). Just over a third (34.4%,  $n = 32$ ) reported an income of \$10,000 to \$20,000 per year, while a much lower percentage (8.6%) had income between \$20,000 and \$30,000 ( $n = 8$ ) or \$30,000 to \$40,000 (4.3%,  $n = 4$ ).



Table 2.

*Description of Sample: Demographic Data*

<u>Demographic Variable</u>	<u>n</u>	<u>%</u>
<b>Ethnicity</b>		
Caucasian	45	50.0
Asian/Pacific Islander	21	23.3
Hispanic/Latino	15	16.7
Multiple Race	6	6.7
African American	3	3.3
<b>Born in Hawaii</b>		
Yes <sup>a</sup>	22	23.7
No	71	76.3
<b>Sexual preference</b>		
Gay/homosexual	72	78.3
Bisexual	15	16.3
Heterosexual	5	5.4
<b>Education</b>		
Did not complete high school	8	8.6
Completed high school	21	22.6
Some college	64	68.8

Table 2 (continued). *Description of Sample: Demographic Data*

Demographic Variable	<i>n</i>	%
<b>Employment</b>		
Disability	74	80.4
Unemployed	11	12.0
Working	4	4.3
<b>Annual income</b>		
\$10,000 or less	49	52.7
\$10,001 - \$20,000	32	34.4
\$20,001 - \$30,000	8	8.6
\$30,001 - \$40,000	4	4.3
	<i>Mean</i>	<i>SD</i>
Age (years) ( <i>N</i> = 84) ( <i>Range</i> = 26 – 63)	46.3	7.3
Number of years in Hawai'i (if not born in Hawai'i) ( <i>N</i> = 59) ( <i>Range</i> = 2 – 40)	13.2	10.5
Education (years) ( <i>N</i> = 93) ( <i>Range</i> = 8 – 17 <sup>+</sup> )	13.7	1.9

<sup>a</sup> Born in Hawai'i, *n* = 22: Asian/Pacific Islanders 86.4%, *n* = 19; Multiple Race 9.1%, *n* = 2; Hispanic, 4.5%, *n* = 1.

Table 3.

*Comparison of Sample Ethnicity to Hawai'i & U.S. Male AIDS Data.*

Race/Ethnicity	HIV or AIDS Diagnosis, Hawai'i Study Sample ( <i>N</i> = 90)		Hawai'i Male AIDS Cases Reported (1983 – 2003) ( <i>N</i> = 2,621)	Men Diagnosed with AIDS in U.S., through 2003 ( <i>N</i> = 748,492)
	<i>n</i>	%	%	Estimated %
Caucasian, not Hispanic	45	50.0	64.0	45.5
Asian/ Pacific Islander	21	23.3 <sup>a</sup>	26.0 <sup>b</sup>	.8
Hispanic	15	16.7	5.0	18.4
American Indian/ Alaskan Native	0	0.0	< 1.0	.3
African American, not Hispanic	3	3.3	4.0	35
Multiple Race	6	6.7		

<sup>a</sup> 23.3%, *n* = 21: Hawai'ian/Part Hawai'ian 85.7%, *n* = 18; Other Asian/Pacific Islanders 14.3%, *n* = 3

<sup>b</sup> 26.0%, *n* = 659: Hawai'ian/Part Hawai'ian 38%, Filipino 19%, Japanese 17%, Other Asian/Pacific Islanders 15%, Chinese 8%

### *HIV-Related Health Status*

Table 4 presents HIV-related data for the sample. The mean number of years since HIV diagnosis was 11.8 ( $SD = 6.6$ ) with a range of 1 to 27 years. Nearly two-thirds (62.0%,  $n = 57$ ) of the men had received a diagnosis of AIDS and a majority of the sample (78.0%,  $n = 71$ ) were taking HIV medications. Over one-third of the sample (38.0%,  $n = 35$ ) had been hospitalized for an HIV-related illness. The mean CD4 cell count was 417 ( $SD = 229$ ) with a wide range (25 to 930) for this indicator of immune protection. For those who reported HIV-related symptoms ( $n = 70$ ), the mean number of symptoms was 1.8 ( $median = 2.0$ ,  $SD = 1.5$ ) with a range from zero to six symptoms. Table 5 presents grouping and frequencies of reported HIV-related symptoms. The most frequent symptoms reported were fatigue ( $n = 28$ , 20.7%); gastrointestinal symptoms ( $n = 26$ , 19.3%); and neuromuscular symptoms ( $n = 21$ , 15.6%). Symptoms categorized as outward signs of HIV disease—infections ( $n = 11$ , 8.1%), opportunistic infections ( $n = 10$ , 7.4%), and tumors ( $n = 1$ , 0.7%)—were reported much less frequently. Nearly one quarter of the sample (24.7%,  $n = 23$ ) did not write in any HIV-related symptoms in the space provided.

Table 4.

*Description of Sample: HIV-Related Health Status Data*

	<u>N</u>	<u>%</u>
AIDS diagnosis		
Yes	57	62.0
No	35	38.0
Taking antiretroviral meds		
Yes	71	78.0
No	20	22.0
Hospitalized for HIV-related problems		
Yes	35	38.0
No	57	62.0
	<u>Mean</u>	<u>SD</u>
Number of years since HIV+ diagnosis (N = 91) (Range = 1 – 27)	11.8	6.6
CD4 count (N = 82) (Range = 25 – 930)	417.0	229.0
Number of HIV-related symptoms (N = 70) (Range = 0 – 6) (Median = 2.0)	1.8	1.5

Table 5.

*HIV-Related Symptoms Reported*

Symptom Category	Number of Symptoms Reported	Percent (%) of Total Symptoms Reported
Fatigue	28	20.7
Gastrointestinal symptoms	26	19.3
Neuromuscular symptoms	21	15.6
Infections	11	8.1
Opportunistic infections	10	7.4
Cognitive problems	9	6.7
Malaise	8	5.9
Depression	7	5.2
Sleep disturbances	6	4.4
Affects of medications	3	2.2
Pneumonia	1	0.7
Back pain	1	0.7
Anxiety	1	0.7
Vertigo	1	0.7
Tumors	1	0.7
Kidney/liver damage	1	0.7

## *Contextual Variables*

### *Alcohol and Drug Use Patterns*

Table 6 summarizes respondents' substance use over the last three months. Twenty-five men (26.9%) reported a history of injection drug use. Of them, 24 men responded to the follow-up question regarding sharing injection drug equipment, with 17 men (70.8%) reporting a history of sharing drug injection equipment. Slightly over half of the men (56.2%,  $n = 56.2$ ) reported using alcohol in the last three months. The reported mean number of times alcohol was used before sex ranged from zero to 14 ( $M = 1.3$  times,  $Median = 0$ ,  $SD = 2.7$ ). Slightly over half (52.2%) the sample ( $n = 48$ ) reported recent marijuana use. Twenty percent of the sample ( $n = 19$ ) reported a history of ice use over the last three months. Less than 10% (8.7%,  $n = 8$ ) of men used cocaine in the last three months. Based on the open-ended response format question pertaining to "other [drugs]," no patterns of other drug use existed that were not already reported. Frequency of other drug use included erectile dysfunction drugs ( $n = 3$ ), Ecstasy ( $n = 2$ ), Valium ( $n = 2$ ), and one response each ( $n = 1$ ) for: Marinol, heroin, LSD, Vicodin, mushrooms and poppers.

Table 6. *Description of Sample: Drug Use History Data*

Drug Use History Variable	<i>n</i>	%
History of intravenous drug use		
Yes	25	26.9
No	68	73.1
Shared intravenous drug equipment (if history of intravenous drug use = Yes)		
Yes	17	70.8
No	7	29.2
Used alcohol in last 3 months		
Yes	50	56.2
No	39	43.8
Use marijuana in last 3 months		
Yes	48	52.2
No	44	47.8
Used ice in last 3 months		
Yes	19	20.4
No	74	79.6
Used cocaine in last 3 months		
Yes	8	8.7
No	84	91.3
	<i>Mean</i>	<i>SD</i>
Number of times used alcohol before sex ( <i>N</i> = 91) ( <i>Range</i> = 0 – 14)	1.3	2.7



*Substance Use with Most Recent Sex Partners.* Table 7 summarizes substance use based on per-partner measures for the (up to three) most recent sex partners. Slightly over one-third of the men (35.5%,  $n = 33$ ) reported using alcohol before sex with most recent sex partners (up to three). Twenty percent of the sample ( $n = 17$ ) reported a history of ice use before sex. Over one-third (37.7%) of the sample ( $n = 32$ ) reported recent marijuana use before sex. Less than 10% (6.5%,  $n = 5$ ) of men used cocaine before sex with most recent (up to three) partners.

Table 7.

*Description of Sample: Number of Subjects Reporting Drug Use with Most Recent Sex Partners (Up to Three)*

<u>Drug Use History Variable</u>	<u><i>n</i></u>	<u>%</u>
Used marijuana before sex ( $N = 85$ )	32	37.7
Used alcohol before sex ( $N = 93$ )	33	35.5
Used ice before sex ( $N = 83$ )	17	20.5
Used cocaine before sex ( $N = 77$ )	5	6.5

*Alcohol Use before Sex.* In the partner by activity checklist, alcohol use before sex was assessed for both the subject and for the sex partners (Table 8). Subjects consistently reported about two-thirds of the time that neither they nor their first most recent partners (63.4%,  $n = 59$ ), nor their second most recent partners (62.7%,  $n = 47$ ), nor their third most recent partners (68.2%,  $n = 45$ ), used alcohol before sex. Across all three partners, subject and partner together did not use alcohol before sex 64.5% ( $n = 151$ ) of the time. Subject alone used alcohol before sex less than 10% (8.1%,  $n = 19$ ) of the time over all three partners. The subject was the only user of alcohol before sex 8.6% ( $n = 8$ ) of the time with first most recent partners; the only user of alcohol before sex 8.0% ( $n = 6$ ) of the time with second most recent partners; and the sole user of alcohol before sex with 7.6% ( $n = 5$ ) of third most recent partners. Both subject and partner together used alcohol less than one-fifth (18.4%,  $n = 43$ ) of the time over all three most recent partners, ranging from the lowest rate of 15.2% ( $n = 10$ ) with respect to third most recent partners up to a highest rate of 20.4% ( $n = 19$ ) with first most recent partners. Among first most recent sex partners, subjects reported the partner alone was drinking before sex 7.5% of the time ( $n = 7$ ). Second most recent partners were the sole consumers of alcohol before sex with eight subjects (10.7%), and 9.1% of third most recent partners drank before sex ( $n = 6$ ) while subjects abstained. Across all three partners, subjects reported 9.0% of the time ( $n = 21$ ) that sex partners alone consumed alcohol before sex.

Table 8.

*Description of Sample: Alcohol Use before Sex with Most Recent Sex Partners (Up to Three)*

	<u>Subjects Reporting Use of Alcohol before Sex</u>							
	<u>First Most Recent Sex Partner (N = 93)</u>		<u>Second Most Recent Sex Partner (N = 75)</u>		<u>Third Most Recent Sex Partner (N = 66)</u>		<u>Total Reports (N = 234)</u>	
<u>Alcohol used before sex by</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>	<u>n</u>	<u>%</u>
Neither subject nor partner	59	63.4	47	62.7	45	68.2	151	64.5
Subject only	8	8.6	6	8.0	5	7.6	19	8.1
Both subject & partner	19	20.4	14	18.7	10	15.2	43	18.4
Partner only	7	7.5	8	10.7	6	9.1	21	9.0

*Sex Partner and Sexual Activity*

Table 9 presents data pertaining to the sex partner (up to three most recent) experiences (anal or vaginal sex) during the three-month recall period. There were a total of 237 sex partners reported, with a small percentage (2.5%) being female ( $n = 6$ ). Fifteen of the 93 men (16.1%) reported on only one sex partner in the last three months. Over three quarters of the men (83.9%,  $n = 78$ ) reported on a second most recent partner, with 12.9% ( $n = 12/93$ ) reporting two partners only. Nearly three quarters (71%,  $n = 66$ ) of the men reported on a third sex partner in the last three months. The mean number of most recent sex partners (up to three) in three months was 2.5 ( $SD = 0.76$ , Range = 1 – 3).

Table 9.

*Description of Sample: Number of Sex Partners Reported*

<u>Partner Number</u>	<u><i>n</i></u>	<u>Percent (%) with number of partners</u>
Sex Partner 1	93	16.1
Sex Partner 2	78	12.9
Sex Partner 3	66	71.0
Total	237	
<u>Mean Number of Partners</u>	<u>Median</u>	<u>Range</u>
2.5	3.0	1-3

Table 10 presents data about relationship status of most recent sex partners as identified by subjects who reported sex partner relationship ( $N = 212$ ). Slightly over one-sixth (15.6%,  $n = 33$ ) of the sex partners were considered to be *committed* (spouse, primary partner, boy or girlfriend), while slightly under one-sixth (14.1%,  $n = 30$ ) were considered to be *regular* (non-primary-partner but had sex with more than twice) partners. Slightly over seventy percent (70.3%) of the sample reported less committed sex partner relationship status: 84 partners (39.6%) were considered to be *casual* (acquainted, "one night stand," sex only once or twice), while 30.7% ( $n = 65$ ) were considered to be *anonymous* ("trick," hustler, someone encountered at a bathhouse, sex-in exchange for something).

Trends in frequencies of relationship status across the "up-to-three" most recent sex partner groups include: 1) a decreasing percentage of subjects who considered sex partners to be committed, with 27.4% ( $n = 23$ ) considered committed for the most recent sex partner, 8.7% ( $n = 6$ ) for the second, and 6.8% ( $n = 4$ ) sex partner relationships considered to be committed for subjects with a third most recent sex partner; 2) an increasing percentage of subjects with sex partners considered to be anonymous, with 23.8% ( $n = 20$ ) most recent partners considered anonymous, and 30% ( $n = 20$ ) of second most recent partners, and 42.4%, ( $n = 25$ ) of the third most recent sex partners considered to be anonymous. No other patterns related to relationship status across sex partners (up to three) are evident.

Table 10.

*Description of Sex Partners' Relationship Status (Up-to-Three Recent Partners)*

Relationship Status	Number of Partners in Relationship Status (#)							
	First Most Recent Sex Partner (N = 84)		Second Most Recent Sex Partner (N = 69)		Third Most Recent Sex Partner (N = 59)		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Committed	23	27.4	6	8.7	4	6.8	33	15.6
Regular	12	14.3	9	13.0	9	13.0	30	14.1
Casual	29	34.5	34	49.3	21	30.4	84	39.6
Anonymous	20	23.8	20	30.0	25	42.4	65	30.7
Total							212	100.0

Table 11 presents data about serostatus of sex partners from the up-to-three most recent sex partner experiences for which serostatus was reported ( $N = 219$ ). Non-discussion of sex partner serostatus was reported for half (50.7%,  $n = 111$ ) of the total sex partner experiences. Slightly less than one third (31%,  $n = 68$ ) of the total sex partners were known to be seropositive. Slightly over ten percent (12.3%,  $n = 27$ ) were reported to be HIV seronegative, and slightly over five percent (5.9%,  $n = 13$ ) said the sex partners told them they were never tested, and thus were of unknown serostatus. A similar trend across the “up-to-three” most recent sex partner groups is evident related to the frequency of partner HIV serostatus types. Consistently, across the three sex partner groups, most partners were reported to have not discussed their serostatus, with the next highest serostatus type being positive, followed next by less partners who were seronegative, and consistently, sex partners of unknown serostatus made up the lowest frequency serostatus type, across the three sex partner groups. The frequency of sex partners reported to be seropositive ranged from 45.3% to 54.8% ( $n = 34 - 39$ ). The next highest frequency of partner serostatus was seronegative ranging from 28.2% to 32.6% ( $n = 20 - 28$ ), followed next by fewer partners who were seronegative, ranging from 6.5% to 15.1% ( $n = 4 - 13$ ), and sex partners of unknown serostatus ranged from 4.2% to 7.0% ( $n = 3 - 6$ ) making up the lowest frequency serostatus type across the three sex partner groups.

Table 11.

*Description of Sex Partners: Serostatus by Partner Number*

Partner Serostatus	First Most Recent Sex Partner (n = 86)		Second Most Recent Sex Partner (n = 71)		Third Most Recent Sex Partner (n = 62)		Total (N = 219)	
	n	%	n	%	n	%	n	%
Not discussed (N = 111)	39	45.3	38	53.5	34	54.8	111	50.7
Tested positive (N = 68)	28	32.6	20	28.2	20	32.2	68	31.1
Tested negative (N = 27)	13	15.1	10	14.1	4	6.5	27	12.3
Never tested (N = 13)	6	7.0	3	4.2	4	6.5	13	5.9



*Aim 1: Describe HIV Serostatus Disclosure to Sex Partners in the Sample*

A detailed description of self-disclosure is presented next, using demographic, HIV-related health status, drug use before sex, and sex partner variables. The description of self-disclosure is based on the respondents' most recent sexual experiences (up to three). Because this study is about self-disclosure rather than concealment, Aim 1 will focus primarily on describing rates and percentages of disclosure, rather than on rates of nondisclosure of HIV status. Factors leading to disclosure are not necessarily the opposite of factors leading to nondisclosure. A closer examination of relationships that influence disclosure to most recent sex partners will be presented in Aim 3 and Aim 4.

*Demographics and Self-Disclosure*

Table 12 provides ethnicity data for those HIV-seropositive men who self-disclosed to sex partners (up-to-three, on a per-sex-partner basis) before having anal or vaginal sex. The three African American men in the sample reported a total of 8 sex partners. Disclosure was reported with three quarters (75%) of those sex partners ( $n = 6$ ). All three men (100%) disclosed to their most recent sex partner, with a decline in subject disclosure for the reported second and third most recent sex partners to 66.7% ( $n = 2/3$ ), and 50% ( $n = 1/2$ ), respectively. The Asian/Pacific Islander men ( $n = 20$ ) reported a total of 52 most recent sex partners. The overall subject disclosure frequency was 55.8% ( $n = 22$ ). Near sixty percent of the men disclosed to the first and second most recent sex partners (60%,  $n = 12/20$ , and 61.1%  $n = 11/18$ , respectively), while a decrease in disclosure to 42.9% occurred with Asian/Pacific Islander men who had a third most recent sex partner ( $n = 6/14$ ). The Hispanic men in the sample ( $n = 15$ ) reported

disclosing to 20 out of 40 sex partners, with a disclosure frequency of 50%. Rates of disclosure declined slightly across the three most recent sex partners ranging from 53.3% of subjects disclosing ( $n = 8/15$ ) to a low of 45.5% ( $n = 5/11$ ) for disclosure to third most recent sex partners. The Caucasian men ( $n = 45$ ) reported a total of 108 sex partners and disclosed to nearly half (48.1%) of those sex partners ( $n = 52$ ). No progressive decline in subject disclosures occurred from first to third most recent sex partner experiences with Caucasian men. There were six men of Multiple Race who reported a total of 12 sex partners. Half of the men of Multiple Race ( $n = 3/6$ ) disclosed to the first sex partner and half ( $n = 2/4$ ) disclosed to the second sex partner. Neither (0.0%) of the Multiple Race men ( $n = 2$ ) with a third most recent partner disclosed to that partner. Thus, the overall disclosure frequency for men of Multiple Race was (41.7%).

Table 12.

*Description of Self-Disclosure on a Per-Partner Basis: Ethnicity*

Number of Disclosures (n)/Number of Subjects in Ethnicity Category (#)

Ethnicity	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%
African American	3/3	100.0	2/3	66.7	1/2	50.0	6/8	75.0
Asian/Pacific Islander	12/20	60.0	11/18	61.1	6/14	42.9	29/52	55.8
Hispanic	8/15	53.3	7/14	50.0	5/11	45.5	20/40	50.0
Caucasian	24/43	55.8	13/34	38.2	15/31	48.4	52/108	48.1
Multiple Race	3/6	50.0	2/4	50.0	0/2	0.0	5/12	41.7

Table 13 presents data on reported disclosures by subjects who were or were not born in Hawai'i. The overall disclosure rate of the 22 men born in Hawai'i was 59% while the disclosure rate for those not born in Hawai'i was 49.1% ( $n = 84/171$ ). For men born in Hawai'i, slightly less than two-thirds (63.6%) disclosed to their most recent sex partner ( $n = 14$ ), a rate of disclosure similar to that for the second most recent sex partner (63.2%,  $n = 12/19$ ). Less than half of the men born in Hawai'i with a third most recent sex partner (46.7%  $n = 7/15$ ) disclosed to that partner. For men not born in Hawai'i, disclosure rates were highest for first most recent sex partners (57.4%,  $n = 39/68$ ), and lowest among those who had a third most recent sex partner (45.8%,  $n = 22/48$ ).

Table 13.

*Description of Self-Disclosure on a Per-Partner Basis: Hawai'i Born*

		Number of Disclosures ( $n$ )/Number of Subjects Born or Not Born in Hawai'i (#)							
		To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
Born in Hawaii		$n / \#$	%	$n / \#$	%	$n / \#$	%	$n / \#$	%
Yes		14/22	63.6	12/19	63.2	7/15	46.7	33/56	59.0
No		39/68	57.4	23/55	41.8	22/48	45.8	84/171	49.1

As shown in Table 14, for those men who were not born in Hawaii, the overall mean number of years living in Hawaii for men who disclosed (on a per partner basis) was 12.6 years and for the men who did not disclose it was 12.9 years. There was a pattern of decreasing number of years in Hawaii for men who disclosed from 13.3 years for the first most recent sex partner ( $SD = 10.5$ ,  $Range = 2-40$  years) to 11.8 years living in Hawaii for the third most recent partner ( $SD 7.7$ ,  $Range = 2-40$  years). This decreasing pattern from first to third partner was not present with those men who did not disclose. Years in Hawaii for men who did not disclose ranged from 13.2 to 13.9 with little difference in standard deviation (10.5 – 11.4) and no difference in range (2 – 40 years).

There was very little difference between the mean ages of those men who disclosed on a per-partner basis ( $Mean = 46.3$  years), and those who did not ( $Mean = 45.3$  years). There was also very little variation in mean age of those men who disclosed across all three most recent sex partners, ranging from 45.7 years ( $SD = 7.3$ ,  $Range 34 – 61$ ) to 47.3 years ( $SD = 7.5$ ,  $Range = 36 – 60$ ). For men who did not disclose, on a per-partner basis, there was only a slight downward trend in mean age across the three partners, ranging from 46.0 ( $SD = 6.5$ ,  $Range = 31 – 60$ ) to 44.7 years ( $SD = 7.2$ ,  $Range = 26 – 61$ ).

With regard to education, table 14 presents data on the mean number of years of subjects' education and disclosure rates across sex partner groups. The mean number of years of education for the men who disclosed ranged from 13.4 to 13.8 ( $SD = 1.8 – 1.9$ ,  $Range = 8-17$ ), and for those men who did not disclose (across sex partner groups) the mean number of years of education was higher, ranging from 13.7 to 14.0 years ( $SD =$

2.0, *Range* = 8 -17). No increasing or decreasing trends in years of education was noted from the first to third most recent sex partner. The overall mean number of years of education for men who disclosed was 12.6 years, while the mean for men who did not disclose was 12.9 (based on per partner means).

Table 14.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Recent Partners):  
Age, Education, and Years in Hawai'i*

Disclosed	Mean Values for Men Who Disclosed/Did Not Disclose							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Overall Mean	
	Yes	No	Yes	No	Yes	No	Yes	No
Years in Hawai'i	13.3	13.7	12.7	13.9	11.8	11.2	12.6	12.9
SD	10.5	11.3	10.1	11.4	7.7	10.9		
Range	2-40	2-38	2-34	2-40	2-28	2-40		
Age	46.0	46.0	45.7	45.2	47.3	44.7	46.3	45.3
SD	7.5	6.5	7.3	7.0	7.5	7.2		
Range	26-61	31-60	34-61	26-60	36-60	26-61		
Education	13.5	14.0	13.4	14.0	13.8	13.7	13.6	13.9
SD	1.8	2.0	1.8	2.0	1.9	2.0		
Range	9-17	8-17	9-17	8-17	10-17	8-17		

Table 15 provides a description of self-disclosure categorized by reported employment status. Of the four men who reported working, three (75%) reported disclosure to the first most recent sex partner. One of the two men who worked, (50%) who had a second partner, and one of the two men (50%) who had a third sex partner disclosed to those partners, respectively. The overall rate of disclosure by men who were receiving disability was 49.4%. There was a decrease in disclosure frequency from the first to third most recent sex partner ranging from 59.2 % ( $n = 42/71$ ), to 43.9% ( $n = 25/57$ ), and 41.7% ( $n = 20/48$ ), respectively. For those men who reported being unemployed, there was a steady increase in disclosure rates from the first (36.4%,  $n = 4/11$ ) to third most recent sex partner (50%,  $n = 5/10$ ), with an overall disclosure rate of 43.8 percent.

Table 15.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Recent Partners):  
Employment Status*

Employment	Number of Disclosures ( $n$ ) out of Number of Subjects in Employment Category (#)							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
	$n / \#$	%	$n / \#$	%	$n / \#$	%	$n / \#$	%
Working	3/4	75.0	1/2	50.0	1/2	50.0	5/8	62.5
Disability	42/71	59.2	25/57	43.9	20/48	41.7	87/176	49.4
Unemployed	4/11	36.4	5/11	45.5	5/10	50.0	14/32	43.8



Table 16 provides data on income of those HIV-seropositive men who disclosed their serostatus to partners before sex. No consistent pattern in disclosure rates occurred between or within income categories. The overall disclosure rate for men in the lowest income bracket (\$0 to \$10,000) was 47.1%. The frequency of disclosure was 53.2% ( $n = 25/47$ ) for the first sex partner, and declined to 46.3% ( $n = 19/41$ ) for the second, and declined further to 39.4% ( $n = 13/33$ ). For men in the \$10,001 to \$20,000 income category the overall rate of disclosure was 58.4%, with little variation in disclosure pattern across sex partners. The overall disclosure rate was 33.3% for men ( $n = 8$ ) in the \$20,001 to \$30,000 income bracket. Half of the men ( $n = 4/8$ ) disclosed to a most recent sex partner, 14.3% ( $n = 1/7$ ) disclosed to a second, and one third of the men (33.3%,  $n = 2/6$ ) disclosed to a third most recent sex partner. Every man (100%,  $n = 4$ ) with income over \$30,000 reported disclosures to all most recent sex partners for a total of eight partners.

Table 16.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Recent Partners): Income*

	Number of Disclosures ( <i>n</i> ) out of Number of Subjects in Income Category (#)							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%
\$ 0 - \$10,000	25/47	53.2	19/41	46.3	13/33	39.4	57/121	47.1
\$10,001 - \$20,000	20/31	64.5	13/24	54.2	12/22	54.5	45/77	58.4
\$20,001 - \$30,000	4/8	50.0	1/7	14.3	2/6	33.3	7/21	33.3
\$30,001 - \$40,000	4/4	100.0	2/2	100	2/2	100	8/8	100

Grouped according to their sexual preference (homosexual, bisexual, heterosexual), respondents' overall rates of disclosure across all three most recent sex partner opportunities were similar from group to group (Table 17). Homosexual men disclosed at a group rate of 51.4% ( $n = 93/181$ ), bisexual men at a group rate of 55.6% ( $n = 20/36$ ), and four of the five heterosexual men in the study disclosed to at least one most recent sex partner out of seven sex partner opportunities (57.1%).

Table 17.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Recent Partners): Sexual Preference*

Sexual Preference	Number of Disclosures ( $n$ ) out of Number of Partners with Type of Sexual Preference (#)							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
	$n / \#$	%	$n / \#$	%	$n / \#$	%	$n / \#$	%
Homosexual	39/69	55.6	29/60	48.3	25/52	48.1	93/181	51.4
Bisexual	10/15	66.7	6/12	50.0	4/9	44.4	20/36	55.6
Heterosexual	4/5	80.0	0/1	0.0	0/1	0.0	4/7	57.1

*HIV-related health status measures.* Three categorical measures of HIV-related health status (AIDS diagnosis, antiretroviral medication use, hospitalized for HIV-related illness) all yielded a pattern of a higher rate of disclosure to the first most recent sex partner and a lower but consistent rate of disclosure to the second and third most recent sex partners (Table 18). For the 57 men with an AIDS diagnosis, the overall rate of disclosure to their three most recent sex partners was 59.3% ( $n = 80/135$ ). For those men who were not diagnosed with AIDS ( $n = 35$ ) the overall rate of disclosure was 41.6%. About two-thirds of the men with an AIDS diagnosis (67.3%,  $n = 37/55$ ) reported disclosing to their first most recent partner, and over half reported disclosing to the second and to the third most recent partners (55.3%,  $n = 23/43$  and 54.1%,  $n = 20/37$ , respectively). For the men who did not have an AIDS diagnosis, slightly less than half (47.1%,  $n = 16$ ) disclosed to the first most recent sex partner. There was a decline in disclosures for second most recent (40%,  $n = 12/30$ ) and third most recent sex partners (31%,  $n = 9/25$ ).

For men who reported taking antiretroviral medications ( $n = 71$ ), the overall rate of disclosure was 54.6% ( $n = 95/174$ ), while this rate of disclosure for men not taking anti-retroviral medications ( $n = 20$ ) was 46.8%. Sixty percent of both men who were (60.3%,  $n = 41/68$ ) and who were not taking medications (60%,  $n = 12/20$ ) disclosed to their first most recent sex partner, while slightly over half of the men taking medications (52.0%  $n = 26/50$ ) and slightly over one quarter of the men not taking medications (27.3%,  $n = 3/11$ ) disclosed to their third most recent partner.

Finally, the men who reported an HIV-related hospitalization ( $n = 35$ ) disclosed at an overall rate of 57.6%, while those not hospitalized ( $n = 57$ ) disclosed at a rate of 48.5%. With the same pattern of decreasing disclosures across partner number, the rate of disclosure for men who did take medications and did disclose ranged from 67.5% - 51.9%). For those men not hospitalized in the past for HIV-related illness disclosure rates of disclosure ranged from 55.6% to 42.9%.

Among continuous measures of HIV-related health status, the mean number of years since HIV-positive diagnosis for men who disclosed to up-to-three most recent sex partners was about two years greater than the mean numbers of years since diagnosis for men who did not so disclose (Table 19). The mean years since diagnosis, of men who disclosed to first, second and third most recent sex partners, were 12.8 ( $SD = 6.4$ ,  $Range = 1 - 23$ ), 12.3 ( $SD = 6.8$ ,  $Range = 1 - 23$ ), and 12.9 ( $SD = 6.2$ ,  $Range = 1 - 27$ ) years respectively, while mean years since diagnosis of men who did not disclose were 10.2 ( $SD = 6.8$ ,  $Range = 1 - 27$ ), 10.7 ( $SD = 6.9$ ,  $Range = 1 - 27$ ), and 10.5 ( $SD = 7.2$ ,  $Range = 1 - 23$ ) years across the three most recent partners. The overall mean CD4 cell count for men who disclosed to most recent sex partners was 396.0, while the overall mean cell count for men who did not disclose to recent sex partners 416. The mean CD4 count was 409 ( $SD = 223$ ,  $Range = 45 - 835$ ) for men who disclosed to their first most recent sex partner, and 410 ( $SD = 216$ ,  $Range = 25 - 850$ ) for those who did not disclose to that partner; 401 ( $SD = 232$ ,  $Range = 45 - 780$ ) for men who disclosed to their second most recent sex partner, and 416 ( $SD = 229$ ,  $Range = 25 - 850$ ) for those who did not disclose to the second partner; and, with respect to the third partner, 379 ( $SD = 243$ ,  $Range = 45 -$

800) for men who disclosed versus 425 ( $SD = 232$ ,  $Range = 25 - 850$ ) for the non-disclosers. Finally, the mean number of reported HIV-related symptoms was consistently – but only slightly – higher among men who did, than did not disclose to most recent sex partners (on a per partner basis). Mean number of HIV-related symptom reports ranged from 1.8 to 1.9 symptoms for men who did disclose, and from 1.6 to 1.7 symptoms for those who did not disclose, on a per partner basis.

Table 18.

*Description of Self-Disclosure: HIV-Related Health Status Measures I*

	Number of Disclosures ( <i>n</i> ) out of Number of Subjects in HIV Health Status Category (#)							
	To 1st Most Recent Sex Partner		To 2nd Most Recent Sex Partner		To 3rd Most Recent Sex Partner		Total	
	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%
<b>AIDS Dx</b>								
Yes	37/55	67.3	23/43	55.3	20/37	54.1	80/135	59.3
No	16/34	47.1	12/30	40.0	9/25	31.0	37/89	41.6
<b>Taking HIV meds</b>								
Yes	41/68	60.3	28/56	50.0	26/50	52.0	95/174	54.6
No	12/20	60.0	7/16	43.8	3/11	27.3	22/47	46.8
<b>Hospitalized for HIV</b>								
Yes	23/35	67.5	16/30	53.3	14/27	51.9	53/92	57.6
No	30/54	55.6	19/43	44.2	15/35	42.9	64/132	48.5

Table 19.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Recent Partners):  
HIV-Related Health Status Measures II*

	Mean Values for Men Who Disclosed/Did Not Disclose							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Overall Mean	
	Yes	No	Yes	No	Yes	No	Yes	No
Years since HIV Diagnosis	12.8	10.2	12.3	10.7	12.9	10.5	12.7	10.5
SD	6.4	6.8	6.8	6.9	6.2	7.2		
Range	1-23	1-27	1-27	1-23	1-27	1-23		
CD-4 Cell Count	408	410	400	415	379	424	396	416
SD	223	216	232	228	242	232		
Range	45-835	25-850	45-780	25-850	45-800	25-850		
Number of HIV-related symptoms	1.9	1.7	1.8	1.7	1.9	1.6	1.9	1.7
SD	1.5	1.4	1.2	1.4	1.5	1.4		
Range	0-6	0-4	0-4	0-4	0-4	0-4		

*Drug Use before Sex and Self-Disclosure.* Table 20 presents data on alcohol use before sex, for which both participant use and partner use were reported. When alcohol was not used by either the subject or the partner the overall rate of disclosure by subjects was 52.4 percent. The rate of disclosure to first most recent sex partners was 56.1% ( $n = 32/57$ ) when both subject and partner abstained from alcohol before sex, and the rate of disclosure was exactly 50.0% to both second most recent partners ( $n = 23/46$ ) and third most recent partners ( $n = 22/44$ ) when both subject and partner did not drink before sex. When the subject was the only one drinking alcohol before sex ( $n = 17$ ), only three partners (17.7%) were disclosed to. Those three disclosures were all to first most recent partners. No subject who was the sole drinker before sex disclosed to a second most recent partner ( $n = 0/6$ ) or to a third most recent partner ( $n = 0/3$ ). When both subject and partner used alcohol before sex ( $n = 41$ ), almost two-thirds (65.9%) of the occasions resulted in disclosure. Twelve drinking subjects disclosed to their drinking first most recent sex partners (66.7%,  $n = 12/18$ ), nine disclosed to second most recent partners who drank before sex (69.2%,  $n = 9/13$ ), and six subjects who consumed alcohol before sex disclosed to their third most recent partners who were also imbibing (60.0%,  $n = 6/10$ ). If the sex partner was the sole drinker, slightly less than half (47.6%,  $n = 10/21$ ) of such partners were disclosed to. The rate of disclosure dropped considerably across the three partners, from 85.7% ( $n = 6/7$ ) to first most recent partners who were the sole consumers of alcohol before sex, down to 16.7% ( $n = 1/6$ ) to lone drinking third most recent partners.



Table 20.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Most Recent Partners): Alcohol Use before Sex*

	Number of Disclosures ( <i>n</i> ) out of Number of Partners with Whom Alcohol Was Used before Sex (#)							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
Alcohol used before sex by	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%
Neither subject nor partner	32/57	56.1	23/46	50.0	22/44	50.0	77/147	52.4
Subject only	3/8	37.5	0/6	0.0	0/3	0.0	3/17	17.7
Both subject & partner	12/18	66.7	9/13	69.2	6/10	60.0	27/41	65.9
Partner only	6/7	85.7	3/8	37.5	1/6	16.7	10/21	47.6

Table 21 presents data on drug use by the respondents before sex. When subjects used ice before sex, about half (52.5%,  $n = 21/40$ ) of their partners were disclosed to (Table 21). The same number and percentage of subjects using ice before sex disclosed to first and second most recent sex partners (57.1%,  $n = 8/14$ ), but the rate of disclosure dropped to 41.7% ( $n = 5/12$ ) to third most recent partners. When subjects used marijuana before sex ( $n = 66$ ), over two-thirds (68.2.1%,  $n = 45$ ) of such episodes occasioned disclosure. There were 18 subjects using marijuana before sex who disclosed to their first most recent partner (69.2%,  $n = 18/26$ ); 15 of 21 marijuana users disclosed to the second most recent partner; and 63.2% ( $n = 12/19$ ) of marijuana-using subjects disclosed to the third partner. When subjects used cocaine before sex ( $n = 10$ ), only four partners (40.0%) were disclosed to, at the rate of two out of three (66.7%) first most recent sex partners, one out of three (33.3%) second most recent partners, and one out of four (25%) third most recent sex partners.

Table 21.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Most Recent Partners): Substance Use before Sex*

	Number of Disclosures ( <i>n</i> ) out of Number of Partners with Whom Substance Was Used before Sex (#)							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
Substance Used Before Sex	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%
<b>Ice used before sex</b>								
Yes	8/14	57.1	8/14	57.1	5/12	41.7	21/40	52.5
No	39/67	58.2	22/53	41.5	20/47	42.6	81/167	48.5
<b>Marijuana used before sex</b>								
Yes	18/26	69.2	15/21	71.4	12/19	63.2	45/66	68.2
No	30/56	53.6	18/45	40.0	15/39	38.5	63/140	45.0
<b>Cocaine used before sex</b>								
Yes	2/3	66.7	1/3	33.3	1/4	25.0	4/10	40.0
No	41/72	56.9	27/58	46.6	22/51	43.1	90/181	49.7

*Sex Partner Variables and Self-Disclosure Rates*

The sex partner and self-disclosure data indicate that self-disclosure before anal or vaginal sex occurred with 51.3% of the sex partners ( $n = 117/228$ ). Subjects disclosed to slightly over half of the male (51.9%,  $n = 109/210$ ) and half of the female (50.0%,  $n = 3/6$ ) sex partners (Table 22).

Table 22.

*Description of Self-Disclosure on a Per-Partner Basis (Up to Three Recent Partners):  
Number of Disclosures Reported, and Number of Disclosures by Partner Gender*

Partner Number	Number of Disclosures ( $n$ ) / Number of Partners ( $\#$ )					
	Total		By Gender			
	$n / \#$	%	Men		Women	
	$n / \#$	%	$n / \#$	%	$n / \#$	%
Partner 1	53 / 90	58.9	47 / 82	57.3	3 / 4	75.0
Partner 2	35 / 74	47.3	34 / 69	49.3	0 / 1	0.0
Partner 3	29 / 64	45.3	28 / 59	47.5	0 / 1	0.0
Total	117 / 228	51.3	109 / 210	51.9	3 / 6	50.0

*Relationship status and self-disclosure:* Table 23 presents data on subject-identified relationship status for the most recent sex partners (up-to-three) and self-disclosure rates. Over three-quarters (78.8%) of the sex partners in relationships considered to be committed were disclosed to ( $n = 26/33$ ). Slightly over two thirds (66.7%) of sex partners in relationships considered to be regular received a disclosure ( $n = 20/30$ ) before anal or vaginal sex. Slightly over half (52.4%) of sex partners in relationships considered to be casual received a disclosure ( $n = 44/84$ ), while one fifth (20%) of sex partners in relationships considered to be anonymous were disclosed to ( $n = 13/65$ ) by a subject before anal or vaginal sex.

Table 23.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Recent Partners):  
Relationship Status*

Relationship Status	Number of Disclosures ( <i>n</i> ) out of Number of Partners in Relationship Status (#)							
	To First Most Recent Sex Partner (N = 84)		To Second Most Recent Sex Partner (N = 69)		To Third Most Recent Sex Partner (N = 59)		Total (N = 212)	
	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%
Committed (N = 33)	19/23	82.6	4/6	66.7	3/4	75.0	26/33	78.8
Regular (N = 30)	8/12	66.9	6/9	66.7	6/9	66.7	20/30	66.7
Casual (N = 84)	16/29	55.2	17/34	50.0	11/21	52.4	44/84	52.4
Anonymous (N = 65)	4/20	20.0	4/20	20.0	5/25	20.0	13/65	20.0

*Sex partner serostatus and self-disclosure:* Table 24 presents data on number and frequency of disclosures to sex partners based on serostatus occurring with the up-to-three most recent sex-partners. Self-disclosure occurred with slightly less than 90 percent (89.7%) of all the seropositive partners ( $n = 61/68$ ). Disclosure occurred with over three-quarters (77.8%) of seronegative partners ( $n = 21/27$ ). When serostatus of the sex partner was never tested, and thus unknown, disclosure of serostatus by the subject occurred slightly less than half (46.2%,  $n = 6/13$ ) of the time. When the serostatus of the sex partner was not discussed, disclosure of serostatus by the subject occurred only 20.7% of the time ( $n = 23/111$ ).

Table 24.

*Description of Self-Disclosure on a Per-Partner Basis (Up-to-Three Recent Partners):  
Partner Serostatus*

Partner Serostatus	Number of Disclosures ( <i>n</i> ) out of Number of Partners with Serostatus Type (#)							
	To First Most Recent Sex Partner		To Second Most Recent Sex Partner		To Third Most Recent Sex Partner		Total	
	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%	<i>n</i> / #	%
Tested positive ( <i>N</i> = 68)	26/28	92.9	18/20	90.0	17/20	85.0	61/68	89.7
Tested negative ( <i>N</i> = 27)	10/13	76.9	7/10	70.0	4/4	100	21/27	77.8
Never tested ( <i>N</i> = 13)	5/6	83.3	1/3	33.3	0/4	0.0	6/13	46.1
Not discussed ( <i>N</i> = 111)	8/39	20.5	8/38	21.1	7/34	20.6	23/111	20.7
Total ( <i>N</i> = 219)							111/219	50.7



Finally, contextual factors pertaining to sexual partners that have been found to be important in limiting confounding variables in self-disclosure research include time since sex, timing of disclosure (before sex or not before), and type of disclosure (verbal or nonverbal). Table 25 shows discreet periods of time since sex (one week or less, more than a week but less than a month, or more than a month but within three months) and the frequency of disclosures based on the reported three most recent sex partners. Over half (55.7%) of the men who had sex within a week of reporting ( $n = 49/88$ ), disclosed to their sex partners. When sex occurred more than a week but less than a month previously, 51.1% of the men ( $n = 24/47$ ) disclosed and 46.3% ( $n = 38/82$ ) disclosed when sex occurred greater than a month previously. No pattern of increasing or decreasing disclosure rate is noted across the three most recent partners. Table 26 shows that nearly all (96.5%,  $n = 106/111$ ) self-disclosure was reported to occur before anal or vaginal sex and by talking (94.6%,  $n = 106$ ).

Table 25.

*Description of Self-Disclosure: Time Since Last Sex with Partner (Up to Three Most Recent)*

Time Since Last Sex	Disclosures 1 <sup>st</sup> Most Recent Sex Partner		Disclosures 2 <sup>nd</sup> Most Recent Sex Partner		Disclosures 3 <sup>rd</sup> Most Recent Sex Partner		Disclosures Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
1 week or less ( <i>n</i> = 88)	29/49	59.2	14/24	58.3	6/15	40.0	49/88	55.7
More than 1 week but less than 1 month ( <i>n</i> = 47)	9/20	45.0	7/15	46.7	8/12	66.7	24/47	51.1
More than 1 month but within 3 months ( <i>n</i> = 82)	13/19	68.4	12/32	37.5	13/31	41.9	38/82	46.3

Table 26.

*Description of Self-Disclosure: Timing and Method of Disclosure to Up-to-Three Most Recent Partners*

	To 1 <sup>st</sup> Most Recent Sex Partner		To 2 <sup>nd</sup> Most Recent Sex Partner		To 3 <sup>rd</sup> Most Recent Sex Partner		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Disclosed before sex								
Yes	49	94.2	33	97.1	29	100.0	111	96.5
No	3	5.8	1	2.9	0	0.0	4	3.5
Disclosed by talking								
Yes	47	97.9	33	94.3	26	89.7	106	94.6
No	1	2.1	2	5.7	3	10.3	6	5.4

*Aim 2: Describe Self-Efficacy for HIV Serostatus Disclosure and  
Self-Efficacy for Negotiating Safer Sex*

To address this aim, the HIV Serostatus Disclosure Decision-Making scales (2) and the Safer Sex Self-Efficacy Scales (2) (Kalichman et al., 2001) were used to assess self-efficacy for disclosing HIV status, and self-efficacy for negotiating safer sex.

Descriptions of mean sample scores from the two self-efficacy-for-disclosure-decision-making variables will be presented along with comparison of means scores for men who did or did not disclose to (up to three) most recent sex partners. Likewise, descriptions and comparisons of mean scores from the two self-efficacy-for-safer-sex variables follow.

*Self-Efficacy for Disclosure Decision-Making*

Table 27 presents sample mean scores for the two variables pertaining to self-efficacy for disclosure decision-making. These variables were 1) self-efficacy to make an effective decision to disclose, and 2) self-efficacy to know whether or not it is safe to disclose. The sample ( $N = 92$ ) mean self-efficacy score for making an effective disclosure decision was 70.0 ( $SD = 29.7$ ,  $Range = 0 - 100$ ), while the mean score for knowing it is safe to disclose was 68.6 ( $SD = 28.8$ ,  $Range = 0 - 100$ ). As indicated by the sample ranges, there was ample variability in scores: they spanned the entire range possible. The range of deviations from normal distribution for self-efficacy to make an effective disclosure decision ( $Skewness = -0.70$ ,  $Kurtosis = -0.62$ ) and self-efficacy to know it is safe to disclose ( $Skewness = -0.71$ ,  $Kurtosis = -0.44$ ) was between 0 and -1.

Table 27.

*Self-Efficacy for Self-Disclosure Decisions*

<u>Self-Efficacy Variable</u>	<u><i>n</i></u>	<u><i>Mean</i></u>	<u><i>SD</i></u>	<u><i>Sample Range</i></u>	<u><i>Possible Range</i></u>
To make an effective decision to disclose <sup>a</sup>	92	70.0	29.7	0 – 100	0 – 100
To know it is safe to disclose <sup>b</sup>	92	68.6	28.8	0 – 100	0 – 100

<sup>a</sup> *Skewness* = -0.70, *kurtosis* = -0.62.

<sup>b</sup> *Skewness* = -0.71, *kurtosis* = -0.44.

*Self-Efficacy for Disclosure Decision-Making, and Self-Disclosure*

Table 28 presents mean scores for self-efficacy to make an effective decision to disclose, for men who disclosed and men who did not disclose to most recent sex partners (up to three). The overall mean for this self-efficacy variable for men who disclosed to most recent partners was 77.9, while the mean score for those men who did not disclose was 57.0. The mean scores for men who did disclose ranged from 76.9 to 79.0 across sex partner opportunities, with little variation in standard deviation (25.9 – 27.3) or range of scores. The mean score was lowest for the third most recent sex partner. For men who did not disclose, mean scores for self-efficacy to make an effective decision to disclose ranged from 54.8 to 60.9, with little variation in standard deviations or range of scores. T-tests revealed that the difference in mean scores for those who did and did not disclose was significant for subjects reporting on all three most recent sex partners. Men who disclosed to sex partners had higher self-efficacy scores for making a disclosure decision than those who did not disclose to recent sex partners.

Table 28.

*Description of Self-Efficacy for Disclosure Decision-Making: To Make an Effective Decision to Disclose*

Self-Efficacy Score: To Make an Effective Decision to Disclose				
	To First Most Recent Sex Partner	To Second Most Recent Sex Partner	To Third Most Recent Sex Partner	
	<i>n</i> <i>Mean</i> ( <i>Std Dev.</i> ) [ <i>Range</i> ]	<i>n</i> <i>Mean</i> ( <i>Std Dev.</i> ) [ <i>Range</i> ]	<i>n</i> <i>Mean</i> ( <i>Std Dev.</i> ) [ <i>Range</i> ]	Overall <i>Mean</i>
Self-Disclosure				
Disclosed	52 79.0 <sup>a**</sup> (25.9) [0-100]	35 77.8 <sup>b**</sup> (26.9) [8-100]	29 76.9 <sup>c*</sup> (27.3) [0-100]	77.9
Did Not Disclose	37 55.4 (29.8) [0-100]	38 60.9 (30.7) [0-100]	34 54.8 (26.5) [0-100]	57.0

*Note:* *t*-tests were two-sided with equal variances not assumed.

<sup>a</sup> *t* = 3.9, *p* < .000. <sup>b</sup> *t* = 4.2, *p* < .000. <sup>c</sup> *t* = 2.3., *p* < .023.

Table 29 presents mean scores for the self-efficacy variable “knowing when it is safe to disclose,” for the men who did and did not disclose to most recent sex partners (up to three). The overall mean for this self-efficacy variable for men who disclosed to most recent partners was 75.6, while the mean score for those men who did not disclose was 56.8. The mean scores for those men who did disclose ranged from 72.7 to 77.2, with little variation in standard deviations (24.1 – 27.9) or range of scores. The mean score was highest (77.9) for subjects reporting a second most recent partner. For men who did not disclose, mean scores for self-efficacy ranged from 53.8 to 61.9, with little variation in standard deviations (27.3 – 29.1) and range of scores. No patterns of increasing or decreasing mean scores were noted across sex partner number. T-tests showed that the difference in subject mean score for the first sex partner was significant ( $t = 3.8, p < .000$ ); also that the mean scores for subjects reporting on a second most recent sex partner were significantly different ( $t = 3.8, p < .000$ ), while a significant difference was not found between mean scores for subjects with a third most recent sex partner. Men who disclosed to first and second sex partners scored significantly higher for self-efficacy to know it is safe to disclose than men who did not disclose to these partners, but no significant difference in self-efficacy was found with respect to third most recent sex partners. Men who disclosed to sex partners had higher self-efficacy scores for knowing when it is safe to disclose than those who did not disclose to recent sex partners.



Table 29.

*Description of Self-Efficacy for Disclosure Decision-Making: For Knowing When It Is Safe to Disclose*

Self-Efficacy Score: Knowing When It Is Safe To Disclose				
	To First Most Recent Sex Partner	To Second Most Recent Sex Partner	To Third Most Recent Sex Partner	
	<i>n</i> Mean (Std Dev.) [Range]	<i>n</i> Mean (Std Dev.) [Range]	<i>n</i> Mean (Std Dev.) [Range]	Overall Mean
Self-Disclosure				
Disclosed	52 76.9 <sup>a**</sup> (26.5) [0-100]	35 77.2 <sup>b**</sup> (24.1) [8.3-100]	29 72.7 <sup>c</sup> (27.9) [0-100]	75.6
Did Not Disclose	37 54.8 (27.3) [0-100]	38 53.8 (28.4) [0-100]	34 61.9 (29.1) [0-100]	56.8

*Note:* *t*-tests were two-sided with equal variances not assumed.

<sup>a</sup> *t* = 3.8, *p* < .000. <sup>b</sup> *t* = 3.8, *p* < .000. <sup>c</sup> *t* = 1.5, *p* < .140.

### *Self-Efficacy for Negotiating Safer Sex*

Table 30 presents sample ( $N = 92$ ) mean scores for the two variables pertaining to self-efficacy for negotiating safer sex. These variables were: 1) self-efficacy to bring up (“to discuss”) the need to practice safer sex, and 2) self-efficacy to refuse to have unsafe sex. The mean score for self-efficacy to discuss the need to practice safer sex was 79.1 ( $SD = 22.4$ ,  $Range = 20 - 100$ ), while the mean score for self-efficacy to refuse to have unsafe sex was slightly lower, at 72.8 ( $SD = 28.3$ ,  $Range = 0 - 100$ ). The range of deviations from normal distribution for self-efficacy to discuss safer sex ( $Skewness = -0.82$ ,  $Kurtosis = -0.49$ ) and self-efficacy to refuse unsafe sex ( $Skewness = -0.93$ ,  $Kurtosis = -0.02$ ) was between 0 and -1.

Table 30.

*Self-Efficacy for Negotiating Safer Sex*

<u>Self-Efficacy Variable</u>	<u>n</u>	<u>Mean</u>	<u>SD</u>	<u>Range</u>	<u>Possible Range</u>
To discuss the need to practice safer sex <sup>a</sup>	92	79.1	22.4	20 – 100	0 – 100
To refuse to have unsafe sex <sup>b</sup>	92	72.8	28.3	0 – 100	0 – 100

<sup>a</sup> *Skewness* = -0.82, *kurtosis* = -0.49.

<sup>b</sup> *Skewness* = -0.93, *kurtosis* = -0.02.

*Self-Efficacy for Negotiating Safer Sex, and Condom Use*

Table 31 presents data on the self-efficacy for safer sex variable “to bring up the need to practice safe sex” and on condom use with every act of anal or vaginal sex with at least one most recent sex partner (up to three). Mean scores for men who reported condom use with up-to-three most recent partners ranged from a high of 83.4 for the first sex partner to a low of 80.4 for the third most recent sex partner. The standard deviations were similar (19.8 - 20.4), with no variation in range of scores (20 – 100). There was a slight yet progressive decline in efficacy scores for this variable noted across the three sex partner experiences. For men who did not use condoms, mean self-efficacy scores for bringing up the need to practice safe sex were 73.2 for the first sex partner, 66.2 for the second, and 71.2 for the third most recent sex partner, with little variation in standard deviations (23.5 - 24.4) and range of scores (22.5 – 100). T-tests reveal that mean scores were significantly lower for men who did not use condoms with the first ( $t = 2.2, p < .034$ ) and the second ( $t = 3.1, p < .003$ ) most recent sex partners. There was not a significant difference in mean scores between men who did and who did not use condoms with a third most recent sex partner ( $t = 1.6, p < .111$ ).

Table 31.

*Description of Self-Efficacy for Safer Sex: To Bring Up the Need to Practice Safe Sex*

	Self-Efficacy Score: To Bring Up The Need To Practice Safe Sex			Overall Mean
	To First Most Recent Sex Partner	To Second Most Recent Sex Partner	To Third Most Recent Sex Partner	
Condom Use	<i>n</i> Mean (Std Dev.) [Range]	<i>n</i> Mean (Std Dev.) [Range]	<i>n</i> Mean (Std Dev.) [Range]	
Yes	43 83.4 <sup>a</sup> * (20.4) [20-100]	39 82.8 <sup>b</sup> ** (19.8) [20-100]	31 80.4 <sup>c</sup> (20.4) [20-100]	82.2
No	45 73.2 (23.5) [22.5-100]	31 66.2 (24.0) [22.5-100]	32 71.2 (24.4) [22.5-100]	70.2

*Note:* *t*-tests were two-sided with equal variances not assumed.

<sup>a</sup> *t* = 2.2, *p* < .034. <sup>b</sup> *t* = 3.1, *p* < .003. <sup>c</sup> *t* = 1.6, *p* < .111.

Table 32 presents data on the self-efficacy for safer sex variable “to refuse unsafe sex” and on condom use with every act of anal or vaginal sex with at least one most recent sex partner (up to three). The overall mean for this self-efficacy variable for men who used condoms with most recent partners (on a per partner basis) was 77.8, while the mean score for those men who did not disclose was 62.6. Mean scores for men who reported condom use with up-to-three most recent partners ranged from a high of 80.4 ( $SD = 20.7$ ,  $Range = 26.3 - 100$ ) for the third most recent sex partner, to 77.0 ( $SD = 27.6$ ,  $Range = 0 - 100$ ) for the second and 76.0 ( $SD = 28.1$ ,  $Range = 0 - 100$ ) for the first most recent sex partner, with some variation in SD and range of scores noted. The score increased from first to second and from second to third most recent sex partner experience by subjects. Men who did not use a condom at least once with a most recent sex partner had mean scores ranging from a low of 59.5 for the first sex partner scores to a high of 67.5 for the third sex partner scores. There was little variation in standard deviations (28.3 – 31.0) and no deviation in score ranges. T-tests reveal that the mean score for men who did not use condoms was significantly lower than the mean score for men who used a condom at least once with the second ( $t = 2.6$ ,  $p < .011$ ) and the third ( $t = 2.9$ ,  $p < .005$ ) most recent sex partners. There was not a significant difference between the mean scores of men who did and men who did not use condoms with the most recent sex partner ( $t = 1.4$ ,  $p < .058$ ).

Table 32.

*Description of Self-Efficacy for Safer Sex: To Refuse Unsafe Sex*

	Self-Efficacy Score: To Refuse Unsafe Sex			Overall Mean
	To First Most Recent Sex Partner	To Second Most Recent Sex Partner	To Third Most Recent Sex Partner	
Condom Use	<i>n</i> Mean (Std Dev.) [Range]	<i>n</i> Mean (Std Dev.) [Range]	<i>n</i> Mean (Std Dev.) [Range]	
Yes	43 <sup>a</sup> 76.0 (28.1) [0-100]	39 <sup>b*</sup> 77.0 (27.6) [0-100]	31 <sup>c**</sup> 80.4 (20.7) [26.3-100]	77.8
No	45 67.5 (28.3) [0-100]	31 59.5 (28.0) [0-100]	32 60.9 (31.0) [0-100]	62.6

*Note:* *t*-tests were two-sided with equal variances not assumed.

<sup>a</sup> *t* = 1.4, *p* < .058. <sup>b</sup> *t* = 2.6, *p* < .011. <sup>c</sup> *t* = 2.9, *p* < .005.

*Aim 3: Determine the Relationships between Demographic, HIV-Illness, Drug Use History, Sex Partner Variables (Relationship Status, Serostatus), Self-Efficacy and Self-Disclosure of HIV to Sex Partners*

Because of the repeated measures for the up-to-three most recent sex partners, a multilevel regression analysis model (Goldstein, 2003; Hox, 2002; Raudenbush & Bryk, 2002; Singer & Willett, 2003) was used to address Aim 3. The multilevel analysis produced univariate regressions as the first step of a stepwise variable-entry procedure. These univariate regressions determined the initial relationship of each independent variable to self-disclosure. The independent variable with the lowest  $p$ -value—thus the strongest relationship to self-disclosure—was the first variable held in the model while two-variable regressions were run with each of the remaining variables. These two-variable regressions identified the next variable with the lowest  $p$ -value to hold in the model. As each additional independent variable was entered into the regression, each independent variable currently in the model was re-tested for significance and dropped if found to be above .15. The process was repeated until no other independent variables had  $p$ -values less than .15. Eight variables were entered step-wise into the self-disclosure regression model (Table 33). In order of entry, these variables were: sex partner serostatus; sex partner relationship status; self-efficacy for knowing when it is safe to disclose; income; education; subject's use of cocaine before sex; years since HIV diagnosis; and subject's use of marijuana before sex.

The final regression output for self-disclosure (Table 34) shows that partner serostatus, the first variable entered, showed the strongest significant relationship with



self-disclosure. Subjects were least likely to disclose to sex partners whose serostatus was not discussed ( $\beta = -.49, t = -7.32, p < .0001$ ). A partner serostatus which had not been tested and which was therefore unknown, was also significantly associated with less disclosure ( $\beta = -.14, t = -2.23, p < .028$ ). The second variable entered, relationship status, had the second most significant association with self-disclosure: the more committed the relationship, the greater the likelihood that the subject would self-disclose. Those in relationships considered *committed* (spouse, primary partner, boy or girlfriend) were more likely to self-disclose ( $\beta = .25, t = 3.89, p < .000$ ) than those in *regular* relationships (non-primary-partner but had sex with more than twice) ( $\beta = .20, t = 3.15, p < .002$ ) or those in *casual* relationships (acquainted, one night stand, sex only once or twice) ( $\beta = .17, t = 2.59, p < .011$ ). The variable “self-efficacy for knowing when it is safe to disclose” (the third variable entered) was significantly associated with self-disclosure ( $\beta = .20, t = 3.14, p < .002$ ). Higher self-efficacy for knowing when it is safe to disclose was associated with greater self-disclosure. Income, the fourth variable entered, was also significantly associated with self-disclosure. Those with higher income were more likely to self-disclose ( $\beta = .24, t = 3.64, p < .0001$ ). Self-disclosure was inversely related to education, the fifth variable entered. Higher education was significantly associated with less disclosure ( $\beta = -.24, t = -3.49, p < .001$ ). The sixth variable, cocaine use before sex, was significantly associated with less self-disclosure ( $\beta = -.28, t = -3.09, p < .003$ ). The men who used cocaine before sex were less likely to disclose to sex partners. The seventh variable entered into the regression model, length of time since diagnosis, was significantly related to self-disclosure: the longer the time

since initial HIV-diagnosis the more likely a subject was to disclose his serostatus to sex partners ( $\beta = .15, t = 2.37, p < .020$ ). Finally, although not reaching a level of significance ( $\beta = .11, t = 1.73, p < .087$ ), there was a trend that subject's use of marijuana before sex was related to more disclosure.

Table 33.

*Final Multilevel Regression Analysis and Self-Disclosure: Stepwise Analysis*

Step/ Action	Predictor Variable	<i>df</i>	<i>t</i>	<i>p</i>
Step 1				
Added	Partner serostatus	127	-10.76	.000**
Step 2				
Kept	Partner serostatus	118	-8.87	.000**
Added	Relationship status	118	3.57	.001**
Step 3				
Kept	Partner serostatus	117	-8.00	.000**
Kept	Relationship status	117	3.49	.001**
Added	Self-efficacy to know it is safe to disclose	117	3.49	.001**
Step 4				
Kept	Partner serostatus	117	-8.20	.000**
Kept	Relationship status	117	3.47	.001**
Kept	Self-efficacy to know it is safe to disclose	117	3.56	.001**
Added	Income	117	2.48	.015*

Table 33 (continued). *Final Multilevel Regression Analysis and Self-Disclosure: Stepwise Analysis*

Step/ Action	Predictor Variable	<i>df</i>	<i>t</i>	<i>p</i>
Step 5				
Kept	Partner serostatus	117	-8.23	.000**
Kept	Relationship status	117	3.66	.000**
Kept	Self-efficacy to know it is safe to disclose	117	3.67	.000**
Kept	Income	117	3.28	.001**
Added	Education	117	-2.53	.013*
Step 6				
Kept	Partner serostatus	94	-7.94	.000**
Kept	Relationship status	94	3.62	.000**
Kept	Self-efficacy to know it is safe to disclose	94	3.43	.001**
Kept	Income	94	3.13	.002**
Kept	Education	94	-2.66	.009**
Added	Used cocaine before sex	94	-1.59	.115

Table 33 (continued). *Final Multilevel Regression Analysis and Self-Disclosure: Stepwise Analysis*

Step/Action	Predictor Variable	<i>df</i>	<i>t</i>	<i>p</i>
Step 7				
Kept	Partner serostatus	91	-7.77	.000**
Kept	Relationship status	91	3.46	.001**
Kept	Self-efficacy to know it is safe to disclose	91	3.01	.003**
Kept	Income	91	3.35	.001**
Kept	Education	91	-2.87	.005**
Kept	Used cocaine before sex	91	-1.53	.129
Added	Years since HIV diagnosis	91	1.76	.082
Step 8				
Kept	Partner serostatus	88	-7.32	.000**
Kept	Relationship status	88	3.89	.000**
Kept	Self-efficacy to know it is safe to disclose	88	3.14	.002**
Kept	Income	88	3.64	.000**
Kept	Education	88	-3.49	.001**
Kept	Used cocaine before sex	88	-3.09	.003**
Kept	Years since HIV diagnosis	88	2.37	.020*
Added	Used marijuana before sex	88	1.73	.087

Note: *df* = degrees of freedom.

\**p* < .05. \*\**p* < .01.

Table 34.

*Final Multilevel Regression Analysis and Self-Disclosure: Regression Results*

Predictor Variable	b	SE b	$\beta$	SE $\beta$	df	t	p
<b>Partner serostatus</b>							
Not discussed	-.4893	.0668	-.49	.07	88	-7.32	.0001**
Never tested	-.2774	.1241	-.14	.06	88	-2.23	.028*
Tested negative	-.0248	.0809	-.02	.05	88	-0.31	.760
Tested positive (reference)	.0000		.00				
<b>Relationship status</b>							
Committed	.3373	.0867	.25	.06	88	3.89	.000**
Regular	.2891	.0919	.20	.06	88	3.15	.002**
Casual	.1737	.0670	.17	.07	88	2.59	.011
Anonymous (reference)	.0000		.00				
Self-efficacy to know it is safe to disclose	.0006	.0002	.20	.06	88	3.14	.002**
Income	.1478	.0406	.24	.07	88	3.64	.0001**
Education	-.0632	.0181	-.24	.07	88	-3.49	.001**
Used cocaine before sex	-.6422	.2076	-.28	.09	88	-3.09	.003**
Years since HIV diagnosis	.0112	.0047	.15	.06	88	2.37	.020*
Used marijuana before sex	.1219	.0703	.11	.07	88	1.73	.087

Note: Pseudo  $R^2 = .59$ . SE = Standard error.

\* $p < .05$ ; \*\* $p < .01$

*Aim 4: Determine the Relationships between Demographic, HIV-Illness, Drug Use History, Self-Efficacy, Sex Partner Variables and Disclosure, and the Sexual Practices (Safe or Unsafe) of the Men in the Sample*

Table 35 describes disclosure practices and condom use behavior by subjects who provided data on up-to-three most recent sex partners, for a total of 220 sex partner experiences. To facilitate description of this data, terminology suggested by Marks & Crepaz (2001) will be used: *informed protection* (disclosure and condom use); *informed exposure* (disclosure and non-condom-use); *uninformed protection* (nondisclosure and condom use); and *uninformed exposure* (nondisclosure and non-condom-use). Because this research is about self-disclosure of serostatus, the discussion will focus on informed protection and informed exposure.

For the 220 sex partner experiences, slightly less than one third (32.8%,  $n = 72/220$ ) involved informed protection (disclosure and condom use), while slightly less than one fifth (19.6%,  $n = 43/220$ ) involved informed exposure (disclosure and non-condom use).

From first most recent to third most recent sex partner, a consistent rise is noted in the percentage of men who reported informed protection. Slightly over half of the men who disclosed to most recent partners used condoms (55.8%,  $n = 29/52$ ), while slightly less than two thirds who disclosed to a second partner used condoms (64.7%,  $n = 22/34$ ), and slightly less than three quarters of the men who disclosed to a third sex partner (72.8%  $n = 21/29$ ) used condoms.

Concomitantly, the highest incidence (44.2%,  $n = 23/52$ ) of informed exposure was reported with most recent partners, decreasing to 35.3% ( $n = 12/34$ ) and to 27.6 % ( $n = 8/29$ ) for second and third most recent sex partners, respectively. The frequency of uninformed protection was thirty percent (30%), while uninformed exposure occurred during 17.7% ( $n = 39/220$ ) of the sex partner experiences.

*Relationship between Self-Disclosure and Condom Use*

A significant relationship existed between consistent self-disclosure and consistent condom use when self-disclosure and condom use were measured as the mean across all three most recent sex partners. The correlation between self-disclosure and condom use was .33 ( $p < .001$ ). Men who self-disclosed were more likely to use condoms.



Table 35.

*Self-Disclosure and Condom Use (Up-to-Three Most Recent Partners)*

Self-Disclosure	Condom Used		No Condom Used	
	<i>n</i>	%	<i>n</i>	%
Sex Partner One (N = 88)				
Disclosed ( <i>n</i> = 52)	29	55.8	23	44.2
Did Not Disclose ( <i>n</i> = 26)	13	36.1	23	63.9
Partner Number Two (N = 70)				
Disclosed ( <i>n</i> = 24)	22	64.7	12	35.3
Did Not Disclose ( <i>n</i> = 36)	17	47.2	19	52.8
Partner Number Three (N = 62)				
Disclosed ( <i>n</i> = 29)	21	72.4	8	27.6
Did Not Disclose ( <i>n</i> = 33)	9	27.3	24	72.7
	Frequency	<i>n</i>	%	
	Informed Protection (disclosure/condoms)	72	32.7	
	Informed Exposure (disclosure/no condoms)	43	19.6	
	Uninformed Protection (nondisclosure/condoms)	39	17.7	
	Uninformed Exposure (nondisclosure/no condoms)	66	30.0	

*Relationships between Demographic, HIV-Illness, Self-Efficacy, Sex Partner Variables and Disclosure, and Safe Sex Practices*

The repeated measure of condom use for each of the three most recent sex partners also required the use of multilevel regression modeling similar to that employed for the self-disclosure dependent variable. Fewer variables appeared to be significantly related to condom use with most recent sex partners. In the stepwise regression (Table 36), five predictor variables were entered: self-efficacy to discuss the need to practice safer sex; taking anti-retroviral medication; use of cocaine before sex; partner serostatus; and timing of last sex.

The final regression output for condom use (Table 37) shows that the first variable entered, self-efficacy to discuss the need to practice safer sex, was significantly associated with condom use with most recent sex partners ( $\beta = .25, t = 2.49, p < .015$ ). Those men with higher scores for self-efficacy for discussing safer sex were more likely to use condoms with recent sex partners. The second variable entered, taking anti-retroviral medication, was eventually dropped from the model for lack of a statistically significant relationship to condom use ( $t = 1.41, p < .162$ ). The third variable that was entered into the regression equation was subject's use of cocaine before sex, which in the final regression analysis was significantly associated with condom use ( $\beta = -.27, t = -2.72, p < .008$ ). Less use of condoms with most recent partners (up to three) was associated with cocaine use before sex. The fourth variable entered into the regression model was partner serostatus. Among the measures of serostatus, a negative sex partner

serostatus was significantly associated with greater condom use ( $\beta = .13, t = 2.04, p < .044$ ) as compared to a positive sex partner serostatus. Also, as compared to positive sex partner serostatus, an unknown sex partner serostatus was not associated with condom use ( $\beta = .08, t = 1.23, p < .22$ ), nor was serostatus not discussed ( $\beta = .08, t = 1.07, p < .286$ ). The last variable entered into the regression model for condom use was time since last sex with a partner. Time since last sex was significantly associated with condom use with most recent partners (up to three) ( $\beta = .13, t = 2.07, p < .041$ ). As the length of time increased since the sexual encounter, the likelihood increased that a condom would be used.

Table 36.

*Final Multilevel Regression Analysis and Condom Use: Stepwise Analysis*

Step/ Action	Predictor Variable	<i>df</i>	<i>t</i>	<i>p</i>
Step 1				
Added	Self-efficacy to discuss the need for safer sex	131	2.65	.009**
Step 2				
Kept	Self-efficacy to discuss the need for safer sex	128	2.79	.006**
Added	Taking anti-retroviral meds	128	2.08	.040*
Step 3				
Kept	Self-efficacy to discuss the need for safer sex	101	2.07	.041*
Kept	Taking anti-retroviral meds	101	1.56	.122
Added	Used cocaine before sex	101	-1.66	.100
Step 4				
Kept	Self-efficacy to discuss the need for safer sex	94	2.46	.016*
Kept	Taking anti-retroviral meds	94	1.41	.162
Kept	Used cocaine before sex	94	-2.53	.013*
Added	Partner serostatus	94	2.05	.043*

Table 36 (continued). *Final Multilevel Regression Analysis and Condom Use: Stepwise Analysis*

Step/ Action	Predictor Variable	<i>df</i>	<i>t</i>	<i>p</i>
Step 5				
Kept	Self-efficacy to discuss the need for safer sex	98	2.31	.023*
Removed	Taking anti-retroviral meds			
Kept	Used cocaine before sex	98	-2.70	.008**
Kept	Partner serostatus	98	2.00	.048*
Step 6				
Kept	Self-efficacy to discuss the need for safer sex	94	2.49	.015*
Kept	Used cocaine before sex	94	-2.72	.008**
Kept	Partner serostatus	94	2.04	.044*
Added	Time since last sex	94	2.07	.041*

Note: *df* = degrees of freedom.

\**p* < .05; \*\**p* < .01

Table 37.

*Final Multilevel Regression Analysis and Condom Use: Regression Results*

Predictor Variable	b	SE b	$\beta$	SE $\beta$	df	t	p
Self-efficacy to discuss the need for safer sex	.0007	.0003	.25	.10	94	2.49	.015*
Used cocaine before sex	-.6233	.2288	-.27	.10	94	-2.72	.008**
Partner serostatus							
Not discussed	.0763	.0711	.08	.07	94	1.07	.286
Never tested	.1612	.1314	.08	.07	94	1.23	.223
Tested negative	.1889	.0926	.13	.06	94	2.04	.044*
Tested positive (reference)	.0000		.00				
Time since last sex	.0512	.0247	.13	.06	94	2.07	.041*

Note: Pseudo  $R^2 = .09$ . SE = Standard error.

\* $p < .05$ ; \*\* $p < .01$

## Chapter 6: Discussion

This discussion will be guided by the aims of the study and will address significant as well as non-significant findings, because the HIV disclosure data base is the first of its kind in Hawai'i. Interpretations will be offered using previous self-disclosure-to-sex-partner research. With identification of similarities and unique differences in this sample of men from Oahu, Hawai'i, compared to other research on men who face the challenge of whether or not to disclose their serostatus to sex partners, a foundation can be structured for future research. Limitations as well as strengths of the study will be addressed followed by implications for practice and future research.

*Aim 1: Describe HIV Serostatus Disclosure to Sex Partners in a Sample of HIV-Positive Men Living in O'ahu, Hawai'i*

### *Demographics and Self-Disclosure*

The sample of men that came to the HIV-related food distribution site and completed the survey was unique, based on age and ethnicity, compared to research samples in the mainland United States. The men in this study sample were considerably older, with a mean age of 46.3 years, with the youngest age being 26 years, highlighting the lack of young adult men aged 18 – 25. The mean age in previous self-disclosure research (Crepaz & Marks, 2003; DeRosa & Marks, 1998; Kalichman & Nachimson, 1999; Marks & Crepaz, 2001) ranged from 33.6 to 38.5 years with men in the 18 – 25 year bracket included. As in previous research (Crepaz & Marks, 2003; DeRosa & Marks, 1998; Kalichman & Nachimson, 1999; Marks & Crepaz, 2001), disclosure was not significantly related to age in this study.

This multi-ethnic sample of men from O'ahu, Hawai'i, generally resembled the male AIDS case population statistics for Hawai'i, rather than the United States AIDS and ethnicity statistics (see Table 3). The survey sample included a much smaller percentage of African Americans and a greater percentage of Asian/Pacific Islanders. Asian/Pacific Islanders represented nearly one quarter (23.3%) of the sample, which is the largest sample percentage known to date in the self-disclosure-to-sex-partner research literature. Compared to the Hawai'i AIDS population statistics, this research sample included a slightly greater percentage of Latino men (16.7% versus 5.0%). While this percentage must be viewed in the context of the small sample size, it may also reflect an increased number of HIV-positive Latino men in the Hawai'i-based HIV/AIDS community. Although ethnicity was not significantly associated with self disclosure or condom use, it is important to emphasize that Asian/Pacific Islanders' disclosure rates were not significantly different from other ethnic groups in this study, based on disclosure to most recent sex partners (up to three). Additional research with a larger sample size may yield additional findings based on ethnicity.

The site of data collection influenced the sample based on demographics and other variables. The demographic and HIV-related data for men who filled out the survey at the food distribution center show that the majority had a diagnosis of AIDS, were gay or bisexual, lived in Hawai'i for a substantial length of time, were connected to medication distribution facilities, and although financially strained, were capable of receiving some funding. The men were open enough about their illness to seek social support in a food distribution public arena. Those who may have arrived only for the



\$20.00 stipend were still willing to present themselves in a public arena and as such were open about their illness.

The variables pertaining to number of years living in Hawai'i, and whether participants were Hawai'i-born, were included to explore whether transience or permanence in Hawai'i influenced disclosure practices. While over three-quarters of the sample had moved or immigrated to Hawai'i, most were long-term residents with a mean number of years living Hawai'i over 13 years. Neither variable "number of years living in Hawai'i" nor "Hawai'i-born" was significantly associated with disclosure. This suggests that the men who visited the food distribution site were to some extent established in Hawai'i and its social systems. Because fewer men living in Hawai'i for less time were part of the sample, further research is needed to explore the association of transience or permanence in Hawai'i with disclosure and safe sex practices. Similar to mainland studies, most of the respondents' identified sexual preference was homosexual or bisexual. While only 5.4% of the men reported a heterosexual preference, this closely resembles the percentage (2%) of heterosexual men in the Hawai'i cumulative AIDS cases reported by risk (Hawai'i Department of Health, 2004b). Sexual preference was not a predictor of self-disclosure, but further elicitation of disclosure practices of heterosexual men is needed. Also, similar to mainland disclosure research samples (Crepaz & Marks, 2003; Marks & Crepaz, 2001; Zea et al., 2003; Zea et al., 2004), the majority of men were economically disadvantaged, being either unemployed and/or on disability. Yet, the men were fairly well-educated in comparison to some U.S. studies

(Ciccarone et al., 2003; Marks & Crepaz, 2001; Semple et al., 1999; Zea et al., 2003; Zea et al., 2004), with over two thirds reporting some college experience.

### *HIV-Related Health Status*

The majority of the sample (62%) was living with AIDS, the more progressive form of HIV, and over three-quarters of the men were taking anti-retroviral medications. Very few participants reported what were considered outward signs of HIV disease or life-threatening physical problems, such as pneumocystis or other pneumonia, tumors, herpes or other opportunistic infections, and over one quarter of the sample did not report any HIV-related symptom. For those who did, the mean number of symptoms was relatively low. Fatigue, gastrointestinal symptoms, and neuromuscular symptoms were most frequent, which may be more indicative of medication side effects rather than immune deficiency response. While the low number of reported symptoms may reflect respondent difficulty with naming symptoms or reluctance to report them, findings suggest that with advanced pharmacology and concomitant medication-related health care surveillance, many of the physical and outwardly observable indicators of HIV-illness were less apparent. As supported in HIV literature (Kelly et al., 1998; Suarez et al., 2001; Vanable et al., 2000), it appears that the success of highly active anti-retroviral therapy has allowed men in this sample to be healthier and more physically active, than men who were diagnosed with AIDS a decade ago.

### *Substance Use History*

Data from the comprehensive drug use history suggest that the men in this sample used substances, as over half drank alcohol, and over sixty percent used non-alcohol-related substances in the last three months. It may be that the high frequency of using substances signifies attempts at coping with the chronic illness of HIV/AIDS and the stigma associated with it. Many of the men in the sample were at risk for multiple stigmas including homosexual or bisexual orientation, and intravenous drug and other drug use history. Alcohol was the substance reported most frequently, while the non-alcohol drug of choice was marijuana. Of interest is that the medical use of marijuana is legal in Hawai'i, which may have influenced the frequency of use in the sample. Much fewer men reported crystal methamphetamine ("ice") and cocaine use. Cocaine use by subjects was limited to ten times before sex and ice use occurred forty times before sex, out of a total of 237 reported sexual episodes. In that ice use in Hawai'i is a serious public health concern, and that cocaine use was significantly associated with less disclosure and condom use, it will be important to gather further self-disclosure and safe sex data from men who do use these drugs.

### *Sex Partner Activity and Self-Disclosure*

Data about sex partner activity of the HIV-positive male sample were made available by the survey. As stipulated by the inclusion criteria, all of the men in the sample were engaging in anal and/or vaginal sex. During a period of three months, 93 men reported over two hundred ( $N = 237$ ) sex partners. The majority (81.7%) of men

reported more than one sex partner, while almost three quarters (71.0%,  $n = 66/93$ ) reported at least three partners over the last three months.

The rate of self-disclosure was not high (49.3%), based on the partner-by-activity data pertaining to disclosure with anal and vaginal sex with up to three partners ( $N = 237$ ). This near-50-percent disclosure rate is consistent with previous research (O'Brien et al., 2003). This "latest three" approach offered greater opportunity to detect risky behavior compared to an only-one-partner assessment. Nearly all of the men with one partner (91.7%,  $n = 11/12$ ) disclosed to that partner, while only half (50%,  $n = 5/10$ ) of the men who reported two recent partners disclosed to each of them, and for those with three partners, only 29.2% ( $n = 19/65$ ) disclosed to all of the three sex partners. In similar research, Bingman et al (2001) used a partner-by-activity approach with up to two most recent sex partners and found lower rate of disclosure (39%) with one or both partners. Semple et al (1999) cited an average of 11.9 sexual partners reported in a four-month period in a sample of primarily Caucasian gay and bisexual men, and only 42% of the men with multiple partners disclosed to all sex partners.

In this sample, over two thirds (69.0%) of the sex partners of the HIV-positive men were considered to be at-risk for possibly contracting the HIV virus, as their serostatus was negative, not tested or not discussed. Both men who did and who did not disclose reported having partners of positive, negative and untested serostatus, while a majority (50.1%) of sex partners' serostatus was never discussed.

Different patterns of self-disclosure to sex partners occurred depending on whether the sex partner's HIV-status was seropositive, seronegative or unknown, which

is consistent with previous research findings (DeRosa & Marks, 1998, Kalichman, 1999; Semple et al., 1999). In this sample, self-disclosure to most recent sex partners occurred more frequently with sex partners who themselves were HIV-positive (89.7%), as opposed to those with a negative serostatus (77.8%) or a serostatus never tested (46.1%). Over one half (50.7%) of the total sex partner experiences did not include a discussion by the respondent about his partner's serostatus. Of those 111 instances where no discussion of sex partner serostatus occurred, the vast majority (85.6%) was reported to be with casual or anonymous sex partners. And, for the over one hundred instances for which partner serostatus was not discussed, disclosure occurred less than one quarter (20.7%) of the time. This high frequency of non-discussion of sex partner serostatus is an important finding, as it is an indication of sexual communication patterns in general in this sample. This is especially important because partner serostatus has been shown to correlate with both self-disclosure (Zea et al., 2003) and with safer sex practices in this study and elsewhere (DeRosa & Marks, 1998). As Serovich and Mosack (2003) have suggested, the context of the sexual experience may not lend itself to discussions about HIV status or safe sex, as encounters that occur in public restrooms or other sex venues may be subsumed under a norm of silence rather than verbal exchange. Not talking about serostatus can lead to greater risk of HIV transmission as assumptions of serostatus and subsequent risk behaviors may ensue. Additional research is needed to further illuminate contextual factors associated with the sexual experiences of men who do not discuss their partner's serostatus.

Relationship status of the sex partner was significantly associated with self-disclosure. Consistent with research from the mainland United States (Ciccarone, 2003), in this sample of mostly gay and bisexual men in O'ahu, Hawai'i, self-disclosure before sex occurred more frequently in committed rather than less committed relationships, identified as regular, casual or anonymous. Despite reports of committed relationship status, five out of 25 respondents (20%) who reported "committed" relationships engaged in sex with more than one partner. This suggests that committed relationships for some men may last for a short period of time. This behavior has the potential of placing unknowing committed partners at risk for HIV, depending on the sexual activity occurring in- and outside the committed relationship. It also highlights the need for critical emphasis toward the nearly one-fifth (17.1%,  $n = 6/35$ ) of committed sex partners who were not disclosed to before sex. Future research focused on the dynamics of non-disclosure of serostatus is needed, to further understand the underpinnings of concealing a positive HIV-serostatus, as this dynamic was not explored in this research study, and may be quite different from self-disclosure.

*Aim 2: Describe Self-Efficacy for HIV Serostatus Disclosure and*

*Self-Efficacy for Negotiating Safer Sex*

The overall mean scores for each of the four self-efficacy variables were above the midpoint of the 0 – 100 scale, ranging from 68.6 to 79.1, which was similar in the Kalichman and Nachimson (1999) self-disclosure research. Keeping in mind that self-efficacy refers to a person's belief that he or she can effectively perform a specific behavior under specific conditions (Bandura, 1997), these scores suggest that, overall,

this sample of men had a sense of efficacy for disclosure decision-making and for negotiating safer sex. The two mean self-efficacy scores for disclosure decision-making were lower than the two negotiating-safer-sex mean scores. The lower disclosure decision-making scores suggest that disclosure of HIV serostatus to sex partners is more challenging for the men compared to discussing the need for safe sex and for refusing unsafe sex. This finding supports current research by Marks and Crepaz (2001) that highlights uninformed protection: some persons find it easier to negotiate safe sex than to disclose serostatus. Further research, focused specifically on informed and uninformed exposure and protection, is needed.

When viewing differences in the self-efficacy-for-disclosure-decision-making scores in light of disclosure behavior to most recent sex partners, more striking results emerged. Based on comparison of means for men who disclosed to most recent sex partners (up-to-three), men who disclosed scored significantly higher at self-efficacy for disclosing in the situations presented in the scenarios on which the self-efficacy-for-this-disclosure-decision-making scale was based. Also, those men who scored higher for “self-efficacy for knowing when it is safe to disclose,” who thus felt more efficacious about knowing when it was safe to disclose based on the given scenarios, were significantly more likely to disclose to first and second most recent sex partners, but not the third most recent partners. While mean scores for both of the self-efficacy-for-disclosure-decision-making scales were higher for the men who disclosed than for those men who did not disclose to most recent sex partners, the influence of other contextual

variables was not accounted for at this point, to be able to predict the associations of disclosure practices with self-efficacy ratings.

For the self-efficacy-for-negotiating-safer-sex variable “to bring up the need to practice safe sex,” the mean for men who disclosed to recent sex partners was 82.2, while the mean for those who did not disclose was 70.2. Those men who used condoms reported significantly higher self-efficacy scores for bringing up the need to practice safer sex with most recent, and second most recent, sex partners. Because the mean scores for men who did or did not use condoms with a third most recent partner were not significantly different, it is possible that those men having three sex partners in three months, rather than just two or one, felt less efficacious in their ability to bring up the need to practice safe sex than their counterparts with less than three sex partners. It would be important in future analyses to explore interactions between consistent condom use, number of partners, and self-efficacy for safer sex measures.

The overall mean self-efficacy scores for the safer sex variable “to refuse unsafe sex,” were 77.8 for the men who disclosed to most recent partners, and 62.6 for the men who did not. Those men who reported a third sex partner and did use a condom had a mean self-efficacy-to-refuse-unsafe-sex score that was significantly higher than that of men who did not use condoms with a third sex partner. Again, the interactions between number of partners, perceptions of self-efficacy for negotiating safer sex and consistent condom use need to be further explored.



Interestingly, for the variable, self-efficacy “to discuss the need to practice safer sex,” men who used condoms with most recent sex partners (up to three) scored high ( $Mean = 82.3, SD = 20.1, Range = 20 - 100$ ), while men who did not use condoms scored high as well ( $Mean = 71.9, SD = 24.4, Range = 22.5 - 100$ ). High scores for both categories may suggest that the men in the sample felt efficacious about their ability to discuss *the need* to practice safer sex, yet, they may not always perceive that practicing safer sex is needed. Perceived efficacy for discussing a need for condoms must be coupled with a perceived need for condoms and condom use. In an HIV-positive sample population for which sexual activity with serodiscordant or unknown serostatus sex partners occurred, high scores on self-efficacy to discuss the need to practice safer sex coupled with non-condom use raises concern from a clinical as well as a methodological standpoint.

The self-efficacy-for-negotiating-safer-sex variable with the lowest mean scores for both men who did or did not use condoms with most recent sex partners was “self-efficacy to refuse unsafe sex.” This result suggests that refusing to have unsafe sex is more challenging for the men in the sample than bringing up the need to practice safer sex—the second negotiating-safer-sex self-efficacy variable measured. It may be that a sense of self-efficacy exists for bringing up the need for condoms, but if a sex partner does not want to wear one, the subject feels less efficacious in his ability to refuse unsafe sex.

*Aim 3: Determine the Relationships Between Demographic, HIV-Illness, Self-Efficacy and Sex Partner Variables, and Self-Disclosure of HIV*

In this sample of predominantly gay and bisexual men, the independent variables significantly associated with self-disclosure before anal or vaginal sex included: 1) demographic variables of education and income; 2) the HIV-related health status variable of time since testing seropositive; 3) drug use history variables of cocaine use before sex and a trend for marijuana use before sex, and; 4) sex partner variables of sex partner serostatus and relationship status with sex partners. Indeed, these associations with disclosure of HIV seropositive status to most recent sex partners span the intrapersonal, interpersonal, socio-cultural, and contextual dimensions of an individual. The variables identified as significantly associated with self-disclosure to most recent sex partners (up to three) will be presented in order of statistical strength of association to disclosure. Of all the intrapersonal, interpersonal, socio-cultural and contextual variables assessed, sex partner serostatus and relationship status were the most strongly associated with disclosure to most recent sex partners.

*Sex Partner Serostatus:* Disconcertingly, the strongest significant association with disclosure was in a negative direction with sex partner serostatus: disclosure of serostatus by the subject was least likely to occur when the sex partner serostatus was not discussed. When a sex partner's serostatus was never tested (unknown serostatus), respondents were significantly less likely to disclose as well. The very high (79.3%) incidence of self-disclosure not occurring when there is no discussion of partner serostatus highlights one of the contextual complexities of serostatus self-disclosure. Not

discussing could signal a process of making assumptions. As Simoni and Panteloni (2003) point out, some seropositive men, who connect with seronegative men willing to engage in sex, may assume that the sex partner must also be seropositive because no one would intentionally put himself at risk for infection. On the other hand, the seronegative or unknown-serostatus partner may assume that his partner is also HIV-seronegative, as it is hard to think that someone would put others at risk. Discussion of research findings by Klitzman (1999), Zea et al., (2003) and Greene et al., (2003) point to the high-risk potential of assumptions made about partner serostatus that is coupled with non-disclosure and non-communication about serostatus. The high incidence in the O'ahu sample of what Zea et al. (2003) refer to as "not asking" and "not telling" with sex partners, poses a present danger to sex partners of men. Similar findings of low levels of disclosure to partners of unknown serostatus, coupled with higher rates of disclosure to seronegative partners, and highest levels of disclosure to seropositive partners, have been noted in previous studies (DeRosa & Marks, 1998; Somlai et al., 2001; Zea et al., 2004).

While noting the significant association of less disclosure with non-discussion of partner serostatus, it is important to note also that, from a disclosure standpoint, the sexually active HIV-seropositive respondents in the sample were more likely to disclose to a partner who they knew was seropositive, compared to partners of unknown serostatus. This could be associated with any of the myriad potential facilitators of SD presented in Appendix A, such as a sense of lowered risk of rejection, as highlighted by Klitzman's (1999) research findings.

*Sex Partner Relationship Status:* For this sample, disclosure of serostatus occurred significantly more frequently in relationships identified as committed, compared to less-committed relationships, with a significant trend of decreasing disclosure by men in casual, regular, and anonymous relationships. Over three-quarters of the sex partners in relationships considered to be committed were given the benefit of subject disclosure. About two thirds of sex partners in relationships considered to be regular were disclosed to by subjects in the study, while about half of sex partners in relationships considered to be casual received a disclosure, and only one in five sex partners in relationships considered to be anonymous were disclosed to before anal or vaginal sex. This finding is consistent with research from the mainland United States (Ciccarone, 2003; Kalichman & Nachimson, 1999). As in previous research (Misovich et al., 1997), “main,” “steady,” and “close” partnerships were more likely to involve disclosure. Also, as demonstrated among samples of both gay and bisexual men, sex without disclosure was more likely to occur in non-exclusive rather than exclusive partnerships (Ciccaroni et al., 2003). While partner number was not significantly associated with disclosure, it appears that the number of sex partners a subject reported could be influenced by relationship status. Thus, future research needs to explore the interaction and correlations between relationship status, number of partners and rates of disclosure. With the majority of men reporting more than one sex partner over a three-month period, there is great potential for sex occurring without disclosure in less than committed partnerships.

*Self-Efficacy and Disclosure Decision-Making*

Self-efficacy for knowing when it is safe to disclose was significantly associated with more self-disclosure of serostatus to most-recent sex partners. This strongly suggests that perceived self-efficacy influenced disclosure behavior. In concert with Social Cognitive Theory (Bandura, 1997), social, environmental and personal factors influence self-efficacy for knowing when it is safe to disclose, as behavior is determined by the reciprocal interaction of social, environmental and personal factors (Bandura, 1997). In this regard, there may be factors associated with self-efficacy for disclosure decision making that can be addressed by clinicians to help clients feel more efficacious in their ability to disclose. Yet to be determined, is the association between relationship status, for example, and efficaciousness. It may be that HIV-positive men in committed partnerships feel more efficacious to disclose because the relationship commitment brings about a sense of safety or assurance. It may also be that being in a committed partnership exerts some influence over efficacy because of accountability and subsequent motivation to disclose. Or, as Klitzman (1999) found, it may be that the fear of rejection is lessened in more-committed relationships. Data pertaining to the comparison of mean scores for self-efficacy for knowing when it is safe to disclose, and for the two self-efficacy-for-safer-sex variables, show inconsistencies in significance values based on partner number (most-recent to third most-recent). This suggests that self-efficacy can be influenced by the contextual influence of multiple partners. Further study of the associations between self-efficacy and disclosure decision-making is warranted, as a person's sense of efficacy is amenable to change. In the context of sexual relationships and sexual activity, it will be important to discern the personal factors associated with men's sense of

efficaciousness in their ability to know when disclosure is safe. Self-efficacy is a personal ability to cope with a given situation. Because self-efficacy for knowing when it is safe to disclose was positively associated with disclosure to recent sex partners, future research can serve to tease out the personal, social and environment factors that facilitate more disclosure.

#### *Demographics and Self-Disclosure*

The socio-demographic variables of income and education were significant predictors of self-disclosure to most-recent sex partners, which has not been documented in U.S.-mainland-based samples, and which may point to unique socio-economic influences facing the sample of men surveyed in Hawai'i. While most of the men were unemployed or receiving disability, mirroring male self-disclosure sample descriptions elsewhere, higher income was associated with higher self-disclosure rates in the survey sample. The association of income with self-disclosure to recent sex partners needs to be viewed with caution, however, because there were only four men in the highest income bracket, and each of them reported disclosing to all most-recent (up to three) sex partners.

The significant association of less disclosure to most-recent sex partners by men with higher levels of education in this Hawai'i-based sample is a unique finding. It may be that those with more education feel greater stigma about having contracted HIV, and are less likely to disclose because they have a reputation to uphold, and that this creates the potential for greater personal and psychosocial losses. Further research is needed to determine if this finding is unique to the limited sample population or more generalizable to men living with HIV in Hawai'i.

### *HIV-Health Related Factors*

The lack of an association between HIV-*illness* factors such as the number of HIV-related hospitalizations or symptoms, CD4 cell count or an AIDS diagnosis, suggests little support for the disease progression theory offered by Serovich (2001). The survey results suggest that HIV-illness is less influential in the process of deciding to disclose serostatus to sex partners than other factors. "Years since HIV diagnosis" was a significant predictor of self-disclosure. This may suggest that a temporal, rather than disease progression factor, influences disclosure to sex partners, such that time allows for a "coming to terms with," or greater acceptance of, being HIV-positive. The temporal factor appears to have facilitated disclosure in this sample rather than the progression of disease and outward evidence of disease manifestations.

### *Drug Use History and Self-Disclosure*

Based on the repeated measures multilevel modeling, the respondents' use of alcohol was not statistically significant in predicting self-disclosure to recent sex partners, as was the case in a similar study by Kalichman (1999). Non-alcohol substance use, including cocaine, and a trend for marijuana use prior to sex, does appear to be a contextual variable influencing disclosure behavior. Cocaine use by respondents was associated with less self-disclosure. In the context of sexual activity, the HIV-positive men in the sample who used cocaine may have felt less impulse control, less accountable and/or less responsible for their partner when under the influence of cocaine, as Klitzman (1999) suggested about substance use during sexual encounters. Cocaine use was also associated with less condom use with recent sex partners.

Although not reaching a level of significance in the multilevel regression analysis ( $p = .087$ ), there was a trend that men who used marijuana before sex disclosed more often. Marijuana use has not been associated with self-disclosure in previous research. Of interest is that the medical use of marijuana is legal in Hawai'i and thus marijuana use may be more socially sanctioned among those who suffer from the chronic illness of HIV. There may also be some quality associated with marijuana use, unmeasured in the study, which facilitates discussion of HIV-serostatus before sex.

*Aim 4: Determine the Relationships between Demographic, HIV-Illness, Drug Use, Self-Efficacy, Sex Partner Variables, Self-Disclosure, and Sexual Practices (Safe or Unsafe)*

In this sample of mostly gay and bisexual men in O'ahu, Hawai'i, the strongest association with condom use with most recent sex partners before anal or vaginal sex was use of cocaine before sex. Disconcertingly, this strongest association of cocaine use with condom use was in the direction of not using condoms: those men who used cocaine were significantly less likely to use condoms than the men who did not use cocaine before sex. Cocaine use was also associated with nondisclosure, making the use of cocaine "double trouble." Cocaine use was associated with uninformed exposure in this sample (non-disclosure and non-condom-use). Again, the effects of cocaine may influence impulse control and/or accountability toward the safety of others. It is important to view with caution the associations of less disclosure and condom use with cocaine use before sex, as there were only eight men in the sample who reported using cocaine. Yet, it is also important to keep a vigilant eye on cocaine use and disclosure and safe sex practices through future research.



The second strongest association with condom use in the sample was self-efficacy to discuss the need to practice safer sex. This suggests that of all the intrapersonal, interpersonal, socio-cultural and contextual variables, those men who indeed felt efficacious enough to talk about practicing safe sex were more likely to use condoms before anal or vaginal sex with recent sex partners. The time since sex occurred was also significantly associated with condom use. This suggests a direct relationship between condom use and time since last sex. In this sample, the more recent the sexual activity, the less likely condoms were used, with less than half (43.8%) of the men who reported sex in the last week using condoms. Condom use increased to 56.8% when sexual activity occurred within the previous one to three months. It may be that for some men in committed relationships, with only one most recent sex partner, condoms were not used because of the nature of the relationship. While more condom use was associated with greater time since last sex, it may be that number of partners is a confounding variable. Respondents' recall of sexual experiences greater than a month ago but within three months may lead to measurement error, or men who had multiple sex partners reported using condoms because of the response is more social desirable. As there is no comparable data to validate this association of more time since sex with more condom use, it must be viewed with caution. It may be that the period of recall has influenced the reliability of recall related to condom use, or social desirability influences responses. If a subject reported non-condom use with more recent partners, he may have been inclined to report at least one episode of condom use before anal or vaginal sex. Of greater importance is the research finding that about half of the most recent sexual encounters

occurred without use of a condom. This high rate of risk behavior raises the need for further investigation into the context in which these behaviors are occurring.

Similar to the multilevel regression results for self-disclosure, partner serostatus was associated with condom use. Compared to sex partners who tested HIV seropositive, and more so than partners whose serostatus was unknown or never discussed, men with sex partners known to be HIV seronegative were significantly more likely to have reported condom use with recent sex partners (up to three).

Informed protection (disclosure with condom use) occurred more frequently with second and third sex partners. Thus, there was a higher incidence of informed exposure to most recent sex partners. This may be explained in part by issues of sex partner relationship status, serostatus, and number of sex partners. For example, if a subject was in a long term committed relationship with a seropositive sex partner, the use of condoms may have been discussed and decisions made about ramifications of potential risk. In addition, the increasing incidence of informed protection with second and third sex partners accounts for the significant association between disclosure and condom use: a greater number of men who engaged in sex with multiple partners reported disclosing and using condoms. As the focus of this research was on self-disclosure, further elucidation of contextual factors influencing the interactions between disclosure and condom use is necessary.

These findings highlight the importance of communication in the context of sexual activity. When a partner's serostatus was discussed and identified as seronegative, condoms were used more frequently. But, for those sex partners whose serostatus was

not discussed, condoms were not significantly associated with non-discussion. This points to lower-risk sexual activity (more condom use with recent partners) related to disclosure and to discussing a partner's serostatus. Again, the context of the sexual activity in which this high-risk behavior is occurring needs further elucidation.

Of significance, a positive association did exist between self-disclosure and safe sex in this sample. These results were obtained after careful consideration for control of confounding variables cited in the literature (Simoni & Pantaloni, 2003) such as type of disclosure (oral or "other"), timing of disclosure (before or after sex), and type of sexual activity (anal and vaginal sex). Men who disclosed their serostatus to sex partners were more likely to use condoms for anal and vaginal sex. Results from previous research studies that examined the association between disclosure and safe sex are mixed, with several not finding a positive association between disclosure and condom use (Crepaz & Marks, 2003; Marks & Crepaz, 2001; Stein et al., 1998). The results of this study support the association between disclosure and condom use. Self-disclosure of an HIV-positive serostatus disclosure increased the safety of subsequent sexual behavior.

Despite finding a clear association between consistent disclosure and consistent condom use in this Hawai'i-based sample, it is not correct to imply that a causal relationship exists between self-disclosure and condom use. As Simoni and Panteloni (2005) cite, disclosure does not actually "cause" condom use any more than nondisclosure "causes" non-condom use. The implicit assumption that HIV serostatus disclosure leads to sexual safety may not be supported empirically, as detailed by Marks and Crepaz (2001) in their discussion about informed exposure (disclosure and unsafe

sex) and uninformed protection (non-disclosure and safe sex). In addition, there can always be a third variable, say, moral obligation, which might lead an individual to decide always to disclose and always to use condoms. In these cases, the self-disclosure, per se, is not the cause, or main reason for the safer sexual practices (Simoni and Panteloni, 2005).

Overall, it can be concluded that certain subgroups of HIV-seropositive men in the sample were more likely to disclose to recent sex partners (up to three). These included men who: discussed their partner's serostatus, and, partner serostatus was known to be negative or positive; were in more-committed relationships; were of higher education level; and possibly smoked marijuana before sex. In addition, men who had higher self-efficacy for knowing when it is safe to disclose were significantly more likely to disclose to recent sex partners. Men who were significantly more likely to *not* disclose were of lower socioeconomic status; used cocaine before sex; and had sex partners of unknown serostatus, or the serostatus of the partner was not discussed.

Men who were significantly more likely to use condoms were men who: had higher self-efficacy for discussing the need to practice safer sex and who discussed the partner's HIV serostatus and the serostatus was negative. In addition, the length of time since sex was directly associated with condom use: as the length of time increased since the sexual encounter, the likelihood increased that a condom would be used.

### *Limitations*

This research represents the first focused self-disclosure study in Hawai'i known to date, so it is especially important to highlight conceptual and methodological limitations that potentially influenced the findings. Identifying limitations in design and analysis will provide support for the development of methodologically sound and rigorous self-disclosure research in the future. Issues of concern for this study focus on aspects of design and analysis.

### *Design*

*Sample.* This study included a convenience sample of ninety-three men from O'ahu, Hawai'i, who completed the research questionnaire booklet at a local service site that provides lunches, and food, for clients with HIV/AIDS. Although recruitment efforts were broad-ranged and included list-serve and mass mailing of flyers to AIDS service organization contacts and others interested in HIV/AIDS, results cannot be generalized because of the limitations with recruitment procedures. Only those men who were open about their HIV illness enough to attend a public food distribution venue for HIV/AIDS clients made up the sample and two thirds were diagnosed with AIDS. Younger men, newly diagnosed with HIV, less open about their serostatus, or marginalized from mainstream social venues where the study was advertised are not fully represented in the analyses. The results may not pertain to hard-to-reach populations of men living with HIV in Hawai'i. In addition, all but five of the clients in the sample self-identified as being homosexual or bisexual. Therefore, results cannot be generalized to heterosexual men. Although an ethnically diverse sample of men was obtained that was fairly

representative of HIV-positive men in Hawai'i, probability sampling is needed to make any inferences about ethnicity. Addressing the identified recruitment challenges of reaching a marginalized population will add to the research results presented here.

*Procedure.* The study design was conceptualized to offer strict anonymity for respondents filling out the survey and to allow participants to respond privately to the questionnaires. In actuality, most men completed the surveys while comfortably spaced at lunch tables, where other diners could possibly view their responses. Having completed the surveys in a public venue may have influenced response bias. Such bias would serve to overestimate rates of self-disclosure and underestimate rates of unsafe sex and drug use. Although names were not needed to take the survey, and the anonymous data was grouped for analyses, personal contact with the principal investigator and other diners did occur, so that others were informed as to who was, or was not filling out the survey. The men were asked to review the inclusion criteria before acceptance into the study. Because having sex in the last three months was a requirement for participation, some men may have felt that taking a survey was a public acknowledgement of having had recent sex. This might have deterred potential participants, or may have biased the self-reported data in this study.

#### *Analysis*

*Instrumentation.* The questionnaire booklet, "Health, Social Relationships, and Sexual Behavior of HIV-Positive Men," was developed by the principal investigator based upon current knowledge from the prior research on serostatus disclosure to sex partners (Kalichman et al., 2001; Kalichman & Nachimson, 1999; Semple et al., 1999).

The only formal measures previously used were the self-efficacy for self-disclosure and safe sex measures developed by Kalichman et al. (2001) that were revised to include a wider range of responses (from 0 – 100 rather than 0 – 10). As such, there were aspects of the measurement tools that could have been better refined. A brief description follows:

Sex Partner(s) By Activity Check List: This portion of the survey was developed to focus specifically on self-disclosure and condom use during anal or vaginal sex with the three most recent sex partners in the last three months. However, the leading instructions to this section were: “Please think of the last time you had sex.” While the specific questions asked about self-disclosure before anal and vaginal sex, participants may have started to fill out the sex partner by activity data based on a sex partner with whom they did not have anal or vaginal sex. Although the question about condom use with anal or vaginal sex was clear, there is potential that the responses were misclassified by the non-specific description of sex in the directions. This may have created ambiguity in results about the type of sex that was protected or not. The key lesson from these limitations is the need for specificity in the directions.

Sexual Identity: The formatting for sexual preference included homosexual, bisexual, and heterosexual. While apparently not influential in this study with only five heterosexual respondents, there is a potential for misclassifying results with this sexual preference classification, as a man who has sex with both women and men may not self-identify as bisexual, but rather as heterosexual, and, has sex with men. A suggestion for

future research is to modify the response formatting to include a category of men who have sex with men.

*Measurement of self-efficacy for disclosure decision-making and for safe sex.* It was known a-priori that the Kalichman et al. (2001) self-efficacy scales had a potential for a ceiling effect. Thus, the scales were modified based on recommendations by one of the co-authors (Kalichman personal discourse, 2005). Although anticipated, the self-efficacy-for-disclosure-decision-making scales did show ceiling effects with mean scores ranging higher than would be expected. In addition, other factors not measured in this analysis may account for associations with self-efficacy for disclosure decision-making.

*Measurement of self-disclosure and safe sex.* Self-disclosure is a complex variable with measurement challenges. Both a percentage variable and a dichotomous rating (yes/no) were used for descriptive purposes, and for inferential statistics to measure self-disclosure. Utilizing the measurement of self-disclosure in a “yes/no” format, on a per partner basis, allowed for more detailed analysis of data (specific data across three different partners). Some HIV-prevention researchers may argue that the more discrete “to all/not to all?” measure of self-disclosure and condom use would highlight risk behavior (one instance of non-disclosure or non condom use). But, using this global disclosure measure has limitations as well, since the salient data accrued from the across-partner repeated measures would be unavailable, as “disclosed to all/not to all” is not usable with repeated measures, because, almost guaranteed, errors will be correlated. In addition, results would be skewed if the men disclosed to the majority but not to all sex partners. In deference to the challenge of measuring disclosure of a positive



HIV serostatus to sex partners, considerable deliberation, as well as trial-and-error, were expended on trying different methods of measurement. Ultimately, based on study design, the statistical approach of multilevel analyses, using repeated measures, provided a far better fit for the research design.

### *Results*

Results of this research should be reviewed with caution in regard to generalizability of findings, as they are based on a small sample size. Although there were sufficient subjects to obtain levels of significant findings, missing data and collapsing of categories for analyses potentially limited the significance of results. In addition, the cross-sectional descriptive study design was not able to measure the impact of all potential situational factors influencing self-disclosure. Although the multivariate analysis statistically controlled for several demographic and partner factors, any number of intra-personal, situational, or contextual variables also may have played a role in the findings, such as ethical or moral reasoning, social support, or sex environment for examples. Further research is needed with a larger sample for which contextual factors are better controlled, to validate significant findings associated with self-disclosure to sex partners and safe sex behaviors.

### *Strengths*

Despite these limitations, this research sheds light on dynamics of male self-disclosure of HIV-positive serostatus to sex partners in a population for which no such focused research has been documented. Significant associations were identified between the variables under study and self-disclosure, and with condom use. The research also

identified significant predictors of disclosure of HIV-positive serostatus to sex partners and safe sex practices by men in O'ahu, Hawai'i. The design and analysis was guided by a thorough and rigorous review of the scientific literature on self-disclosure. The anonymous format aided sample recruitment and limited the potential for response bias associated with reports of illicit drug use and potentially stigmatizing sexual behaviors. Administering the survey at one site drastically reduced the potential for respondents taking the survey twice, because the clientele provided peer pressure against repeat administrations. The resulting methodology limited misclassification errors on many predictor variables cited in the literature (Simoni & Panteloni, 2005), including timing and method of disclosure, partner serostatus, and relationship status of sex partners. The self-efficacy for-disclosure-decision-making and for-safer-sex scales demonstrated reliability and internal consistency. These factors provided for a sounder baseline study to refine and improve upon and to compare with future findings.

#### *Implications for Nursing Practice*

In 2003, fueled by social and cultural influences of the changing HIV epidemic, the Centers for Disease Control and Prevention shifted prevention efforts from populations at-risk for HIV, to those individuals already infected (MMWR, 2003). A goal of this initiative is to make HIV prevention a part of routine medical care for seropositive persons, and to discuss safer sex practices with clients while encouraging self-disclosure of serostatus (CDC, 2004). A major effort by nurses and other public health professionals, therefore, is to direct prevention efforts to HIV-infected individuals

and to encourage them to disclose their serostatus to intimate partners prior to engaging in sex.

Advances in medical treatment have allowed persons living with HIV to remain healthier and sexually active for longer periods of time. Clients who report multiple sex partners, unprotected sex, or who have sexually transmitted diseases, or signs of injection drug use may be placing themselves and others at greater risk. Providers in contact with such clients have a responsibility to routinely include sexual history-taking, including discussions about serostatus disclosure and safe sex practices. While health care professionals have license to discuss sensitive issues, addressing subject matters such as self-disclosure and risky sex is a task often neglected or avoided (DeRosa & Marks, 1998; Gerbert et al., 1999; Marks et al., 2002). Equipping health care providers with techniques and tools for exploring sensitive topics related to sexual communication with clients is essential in all health care settings. By conveying unconditional regard and a nonjudgmental attitude, care providers can help clients feel safe in disclosing sexual diversity and behavioral health risks, while potentially increasing self-efficacy for disclosure.

In light of the occurrence of informed exposure, where sex partners engage in unprotected sex even after a disclosure of HIV seropositivity, post-test counseling related to self-disclosure should be augmented by behavioral interventions that explicitly enhance skills with communicating about condom use and safe sex behavior. Marks and Crepaz (2001) emphasize that disclosure is a communication about serostatus, and this alone does not ensure the use of condoms, as it does not focus specifically on the target

behavior of safe sex. Enhancing self-efficacy for discussing the need for safer may prove beneficial, as this is significantly associated with safe sex behavior in this sample.

Even when men overcome myriad challenges, and disclose serostatus to sex partners, there is no guarantee of subsequent safe sexual behavior (Simoni & Pantalon, 2004). As supported in this research, self-efficacy for knowing when it is safe to disclose was associated with self-disclosure, and self-efficacy for discussing safer sex was associated with condom use. Development of health-related behavior programs based on Social Cognitive Theory appears to have potential for skill-building and reinforcing self-efficacy for engaging in the targeted behaviors of HIV disclosure and safer sex behavior, including consistent condom use. Clinicians can reinforce clients' self-efficacy to change behavior by focusing clinical efforts on enhancing self-efficacy appraisals in relation to the context of disclosures and condom use behaviors. This may include techniques such as modeling (role playing with self-efficacy appraisals), problem-solving exercises, and positive feedback.

In Hawai'i, interventions should target those who are economically disadvantaged and/or who use cocaine. The incidence of substance use among the sample population of HIV-positive men suggests that drug abuse treatment settings would be important venues for HIV risk reduction and interventions to enhance disclosure skills. Intervention studies on the effectiveness of HIV counseling and testing programs have typically found evidence of behavior change after self-disclosure counseling, particularly among subjects in heterosexual serodiscordant couples (Wolitski et al., 1997). Interventions for

addressing self-disclosure to sex partners include the use of motivational interviewing techniques (Harding, Dockrell, Dockrell, & Corrigan, 2001), and role playing to build self-efficacy for disclosure decision-making. Post-test counseling could elicit information about serostatus of sex partners and may enable counselors to identify those at risk for not disclosing and target them for more intense counseling.

#### *Recommendations for Future Research*

The findings of this research serve as a base for discussion among HIV/AIDS service providers, health care providers, and HIV prevention specialists about future directions in research with this population base. Methodologically rigorous studies with a larger sample size that specifically measure factors influencing disclosure practices coupled with instances of both protected and unprotected sexual behavior may shed further light on high-risk versus low-risk behaviors. The feasibility of offering anonymous telephone interviewing to reduce the potential for socially desirable responses could be explored.

From this analysis, the influence of substance use on disclosure of HIV seropositivity to sex partners is unclear. Significant findings about the negative influence of cocaine and seemingly positive effects of marijuana use on disclosure and safe sex behavior warrant additional research. Because nearly sixty percent of the sample used non-alcohol related substances, examination of the disinhibiting effects and the potential for risky sex while under the influence of substances like cocaine is needed. It is crucial to enlarge the sample to reach more heterosexual men and injection drug and ice using subjects. One notion to consider is whether substance use during sex serves as

justification for not asking or revealing HIV serostatus. Further research and analysis of personal, environmental, and contextual variables influencing condom use with disclosure practices is needed, as this research focused primarily on disclosure of serostatus to sex partners.

Additional empirical studies on theoretical aspects of HIV serostatus disclosure to sex partners is warranted as well, with further testing of the self-efficacy scales for self-disclosure (Kalichman et al., 2001). On an environmental dimension, drug use may be related to lower self-efficacy values for knowing when it is safe to disclose. It may be that men's beliefs about their ability to know when it is safe to disclose while under the influence of cocaine, for example, are lessened because of the effects of the drug, or that talking between sex partners in general decreased, leading to less discussion about serostatus. Comparative studies could be designed to examine similarities and differences in self-efficacy, self-disclosure and safe sex practices between differing at-risk groups such as homosexual and bisexual men, or cocaine and intravenous drug users.

Self-disclosure research has highlighted the challenges to empirically determining if disclosure of one's HIV-positive serostatus actually leads in a causal manner to safer sex. Marks and Crepaz (2001) suggest that sexual activity takes place "within the context of disclosure," and that there needs to be a method to tease out the social and psychological factors that are associated with unsafe and safe sex. In order to do this, people must be viewed in their socio-cultural contexts, including ethnic and sexual identity contexts. In this regard, the complex underpinnings influencing decisions to

disclose or to not disclose, and to protect or to not protect, might best be illuminated with qualitative methods of inquiry.

Qualitative research methods of inquiry using a smaller sample of men from O'ahu, Hawai'i, focused specifically on HIV serostatus disclosure to sexual partners, could address the idea of safer-sex negotiation with a partner after disclosure has occurred, and the influences of different substances of abuse on that process. Through snowball sampling, recruitment of men from the context of the community and public sex environments—rather than open venue health care agencies—may provide new data that proves enlightening.

### *Conclusion*

The phenomenon of disclosure of HIV in the context of sexual relationships is elusive. The process of self-disclosing a previously concealed and potentially stigmatizing HIV serostatus entails coming to terms with multiple intrapersonal, interpersonal, socio-cultural and environmental challenges. The research findings presented here shed light on dynamics of male self-disclosure of HIV positive serostatus to sex partners in a sample of men living in O'ahu, Hawai'i. The data presented suggest the need to strongly support primary prevention interventions with HIV-positive men that focus on disclosure and risk reduction behaviors. A significant finding in this study is that self-disclosure was associated with condom use. At the same time, many men in the sample reported instances of not self-disclosing serostatus and also not using condoms during anal or vaginal sex with sex partners at-risk for HIV. While self-disclosure plays a role in improving one's sense of psychological well-being and/or maintaining

relationship (Sullivan, 2001), it moves beyond these issues into the protection of life.

This study contributes to the current body of knowledge on male self-disclosure of HIV-positive serostatus to sex partners.



## Appendix A

### Potential Facilitators and Barriers to Self-Disclosure to Sex Partners

## **Facilitators to Self-Disclosure to Sex Partners**

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### **Intrapersonal**

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- Sense of self: esteem, acceptance, worth, integrated, attitude toward, well-being, “Out of the closet”
- Sense of control
- catharsis, emotional distress, depressive symptoms
- Self-efficacy
- Outcome expectancy
- Perception of responsibility
- Control
- Help seeking
- Coping

### **Interpersonal**

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- Depth of relationship/closeness
- Intimacy, emotional investment
- Relationship status, number of sex partners, number of times had sex)
- Support (social, spousal, HIV counseling), Understanding
- Communication (Partner, status, safe sex)
- Feelings of trust
- Shared responsibility
- Consideration of others
- Informed decision-making; establish concordance

### **Sociocultural**

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- Social support
- Support services
- Acceptance
- Membership
- Socio-economics
- Communication about sex (partner status, safe sex)

### **Situational**

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- Context of sexual exchange
- Condom use
- Serostatus of partner

## Barriers to Self-Disclosure to Sex Partners

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### Intrapersonal

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- Self: Blame, self-concept
- Need for sex
- Psychological distress (anxiety, fear of rejection)
- Threats to self (physical, emotional)
- Confidentiality: Third Party leakage
- Shame
- self-efficacy
- outcome expectancy
- causal attribution
- perception of responsibility sexual
- sexual compulsivity
- Sense of control

### Interpersonal

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- Sociocultural
- Confidentiality
- Stigma
- Relational quality
- Serostatus of sex partner

### Sociocultural

---

- Socioeconomics
- Cultural pride
- Stigma
- HIV
- Sexual orientation
- Loss of group membership
- Communication about sex (partner status, safe sex)
- Acculturation

### Situational

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- Substance use
- Economics
- Condom use
- Context of sexual exchange
- Serostatus of partner

## Appendix B

### Potential Outcomes Related to Self-Disclosure of HIV-Positive Serostatus to Sex Partners

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**POSITIVE OUTCOMES****NEGATIVE OUTCOMES**

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**Intrapersonal**

↓ Psychological distress:  
↑ Self-efficacy, mastery (perceived ability)  
Regain control: (over condition)  
Self-acceptance  
Confirm worth  
Integrated sense of self (self-acceptance)  
Changed attitude toward self  
Trust, Confidence  
Increased sense of well-being  
Concern for others  
Moral engagement

↓ Sex  
↑ Psychological distress (Anxiety, fear):  
Perceived or Actual:  
Stigma  
Threats (physical, emotional)  
Loss of  
Privacy/Confidentiality

**Interpersonal**

↑ Depth of relationship/ Closeness:  
↑ Support  
↑ Understanding  
↑ Communication:  
↑ Feelings of Trust  
↑ Intimacy  
↑ Connectedness, Mutuality:  
Shared responsibilities:  
Informed decision-making  
“Out of the closet”  
Consideration of others

Aggression  
Violence  
Isolation: (rejection, abandonment)  
Disappointing others  
Burdening others  
Overwhelming others

**Sociocultural**

Social Support  
Acceptance:  
Membership

Rejection  
Stigma  
Discrimination  
Embarrassing others

**Environmental**

Support Services

Loss of Employment  
Loss of Housing

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Guilt, shame: includable in all categories

Appendix C

Sample Recruitment Flyer

# NEEDED

- Who?** Men living in O'ahu, Hawai'i who have been HIV-positive for at least 6 months
- Eligibility: Men age 18 or over, who have been sexually active in the last three months, and who have not filled out the survey before.
- What?** Participation in a research study being conducted as a component of a dissertation for a doctoral degree in nursing – this consists of filling out three questionnaires that will take about 50 minutes
- \$20.00 will be given for participation
- Why?** To learn more about the health, social relationships and sexual behavior of HIV-positive men living in Hawaii.
- And?** No identifying information will be collected (no names, numbers, etc), allowing for completely anonymous responses.
- Where?** Questionnaires will be administered at or near a health care or social service agency in the Honolulu area.

If interested please call 734-9309 to confirm eligibility

Appendix D

Protection of Human Subjects Certification



**UNIVERSITY OF HAWAII**

Committee on Human Studies

**MEMORANDUM**

August 11, 2004

TO: Kathleen M. Sullivan, R.N.  
Principal Investigator  
Department of Nursing

FROM: William H. Dendle  
Executive Secretary



SUBJECT: CHS #13138- "Male Self-Disclosure of HIV-Positive Serostatus to Sex Partners"

Your project identified above was reviewed and has been determined to be exempt from Department of Health and Human Services (DHHS) regulations, 45 CFR Part 46. Specifically, the authority for this exemption is section 46.101(b)(2). Your certificate of exemption (Optional Form 310) is enclosed. This certificate is your record of CHS review of this study and will be effective as of the date shown on the certificate.

An exempt status signifies that you will not be required to submit renewal applications for full Committee review as long as that portion of your project involving human subjects remains unchanged. If, during the course of your project, you intend to make changes which may significantly affect the human subjects involved, you should contact this office for guidance prior to implementing these changes.

Any unanticipated problems related to your use of human subjects in this project must be promptly reported to the CHS through this office. This is required so that the CHS can institute or update protective measures for human subjects as may be necessary. In addition, under the University's Assurance with the U.S. Department of Health and Human Services, the University must report certain situations to the federal government. Examples of these reportable situations include deaths, injuries, adverse reactions or unforeseen risks to human subjects. These reports must be made regardless of the source funding or exempt status of your project.

University policy requires you to maintain as an essential part of your project records, any documents pertaining to the use of humans as subjects in your research. This includes any information or materials conveyed to, and received from, the subjects, as well as any executed consent forms, data and analysis results. These records must be maintained for at least three years after project completion or termination. If this is a funded project, you should be aware that these records are subject to inspection and review by authorized representatives of the University, State and Federal governments.

Please notify this office when your project is completed. We may ask that you provide information regarding your experiences with human subjects and with the CHS review process. Upon notification, we will close our files pertaining to your project. Any subsequent reactivation of the project will require a new CHS application.

Please do not hesitate to contact me if you have any questions or require assistance. I will be happy to assist you in any way I can.

Thank you for your cooperation and efforts throughout this review process. I wish you success in this endeavor.

Enclosure

2540 Maile Way, Spalding 252, Honolulu, Hawaii 96822-2303  
Telephone: (808) 539-3955/(808) 956-5007, Facsimile: (808) 539-3954, Web site: [www.hawaii.edu/irb](http://www.hawaii.edu/irb)  
An Equal Opportunity/Affirmative Action Institution

**Protection of Human Subjects  
Assurance Identification/IRB Certification/Declaration of Exemption  
(Common Rule)**

*Policy:* Research activities involving human subjects may not be conducted or supported by the Departments and Agencies adopting the Common Rule (56FR28003, June 18, 1991) unless the activities are exempt from or approved in accordance with the Common Rule. See section 101(b) of the Common Rule for exemptions. Institutions submitting applications or proposals for support must submit certification of appropriate Institutional Review Board (IRB) review and approval to the Department or Agency in accordance with the Common Rule. Institutions must have an assurance of compliance that applies to the research to be conducted and should submit certification of IRB review and approval with each application or proposal unless otherwise advised by the Department or Agency.

1. Request Type <input type="checkbox"/> ORIGINAL <input type="checkbox"/> CONTINUATION <input checked="" type="checkbox"/> EXEMPTION	2. Type of Mechanism <input type="checkbox"/> GRANT <input type="checkbox"/> CONTRACT <input type="checkbox"/> FELLOWSHIP <input type="checkbox"/> COOPERATIVE AGREEMENT <input type="checkbox"/> OTHER: _____	3. Name of Federal Department or Agency and, if known, Application or Proposal Identification No.
4. Title of Application or Activity  "Male Self-Disclosure of HIV-Positive Serostatus to Sex Partners"		5. Name of Principal Investigator, Program Director, Fellow, or Other  Kathleen M. Sullivan

6. Assurance Status of this Project (Respond to one of the following)

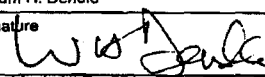
- This Assurance, on file with Department of Health and Human Services, covers this activity:  
Assurance Identification No. F-3526, the expiration date October 15, 2005 IRB Registration No. IORG0000169
- This Assurance, on file with (agency/dept) \_\_\_\_\_, covers this activity.  
Assurance No. \_\_\_\_\_, the expiration date \_\_\_\_\_ IRB Registration/Identification No. \_\_\_\_\_ (if applicable)
- No assurance has been filed for this institution. This institution declares that it will provide an Assurance and Certification of IRB review and approval upon request.
- Exemption Status: Human subjects are involved, but this activity qualifies for exemption under Section 101(b), paragraph 2.

7. Certification of IRB Review (Respond to one of the following IF you have an Assurance on file)

- This activity has been reviewed and approved by the IRB in accordance with the Common Rule and any other governing regulations.  
by:  Full IRB Review on (date of IRB meeting) \_\_\_\_\_ or  Expedited Review on (date) \_\_\_\_\_  
 If less than one year approval, provide expiration date \_\_\_\_\_
- This activity contains multiple projects, some of which have not been reviewed. The IRB has granted approval on condition that all projects covered by the Common Rule will be reviewed and approved before they are initiated and that appropriate further certification will be submitted.

8. Comments

CHS #13138

9. The official signing below certifies that the information provided above is correct and that, as required, future reviews will be performed until study closure and certification will be provided.		10. Name and Address of Institution  University of Hawaii at Manoa Office of the Chancellor 2444 Dole Street, Bachman Hall Honolulu, HI 96822	
11. Phone No. (with area code)	(808) 956-5007		
12. Fax No. (with area code)	(808) 539-3954		
13. Email:	dendle@hawaii.edu		
14. Name of Official  William H. Dendle		15. Title  Compliance Officer	
16. Signature 		17. Date August 5, 2004	

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Appendix E  
Consent Form

CONSENT TO PARTICIPATE IN RESEARCH PROJECT

University of Hawaii

**Principal Investigator:**

Kathleen M. Sullivan, RN, MS  
Dept. of Nursing  
Kapi'olani Community College  
4303 Diamond Head Road  
Honolulu, HI 96816  
(808) 735-0774 (phone and fax)  
email: [ksulliva@hawaii.edu](mailto:ksulliva@hawaii.edu)

**Faculty Sponsor:**

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Professor  
University of Hawaii at Manoa  
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(808) 956-5469  
(808) 956-3257 (Fax)  
e-mail: [mccubbin@hawaii.edu](mailto:mccubbin@hawaii.edu)

This study is being conducted as a dissertation requirement for a PhD degree at the University of Hawaii at Manoa School of Nursing and Dental Hygiene.

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## CONSENT TO PARTICIPATE IN RESEARCH PROJECT

**Project Information:** Male Self-Disclosure of HIV Status to Sex Partners  
**Principal Investigator:** Kathleen M. Sullivan, RN, MS  
Telephone 735-0774; Email: ksulliva@hawaii.edu)

### **Project Description:**

**Purpose and Benefits:** This research project is being conducted as a component of a dissertation for a doctoral degree. The purpose of this research is to learn more about the health, social relationships and sexual behavior of HIV-positive men living in Hawaii. Between 80 and 150 men will participate in this study. The information you provide will help us better understand factors influencing disclosure of HIV status to sex partners and related sexual behavior of men living in Hawai'i. It is hoped that the information you provide in this study will help us better understand risk for HIV and how to lessen the risk of HIV transmission.

**Procedures:** Participation in this research is voluntary. Men 18 years of age or older who live in Oahu, Hawai'i and have been diagnosed with HIV for at least six months are being asked to participate. Your participation in this research will involve completing several pages of questionnaires that require reading, filling in blanks, circling answers and some writing. A brief questionnaire will ask about background data such as age, ethnicity, level of education, time living in Hawai'i and issues concerning your HIV-positive status. Two additional questionnaires will ask about the nature of past and current relationships you've had with intimate partners. If at any time while completing the questionnaires you have questions, you may ask them. If you would like help filling out the form the researcher or assistant can help you. It is estimated that your participation in this study will last for approximately 50 minutes. No identifying information will be collected, allowing for completely anonymous responses. You will be given \$20.00 cash for your time and inconvenience.

**Risks, Stress, or Discomfort:** If you agree to participate in this research, it is possible that some of the questions asked may cause discomfort while answering them. If you feel uncomfortable, you can discuss this with the principal investigator who can provide a phone number for resources in the community.

**Confidentiality of Information:** The information you provide will be completely anonymous without your name being used on any documents. Your participation in this project will be held in complete confidence. You can withdraw from participation at any time with no penalty or loss of benefit to which you would otherwise be entitled. The information shared by you will become part of a grouped database and may be used by the principal investigator for future research activities and publications. If you have any questions about the study at any time you can contact the principal investigator (see information above)

### **Voluntary Consent**

**I certify that I have read and that I understand the foregoing, that I have been given satisfactory answers to my inquiries concerning study procedures and other matters, and that I have been advised that I am free to withdraw my consent and to discontinue participation in the project or activity at any time without prejudice.**

**I herewith give my consent to participate in this project with the understanding that such consent does not waive any of my legal rights nor does it release the Principle Investigator or the institution or any employee or agent thereof from liability for negligence.**

If you cannot obtain satisfactory answers to your questions, or have comments or complaints about the study, please contact: Committee on Human Studies, University of Hawai'i, 2540 Maile Way, Honolulu, Hawai'i 96822, phone: (808) 956-5007.

Appendix F

Background and Health Status Form

## Background and Health Status Form

1. Your Age \_\_\_\_\_

2. Your **Ethnicity** (Check all that apply):

✓	
	European (Caucasian)
	Japanese
	Chinese
	Korean
	Filipino
	Hawaiian/Part-Hawaiian
	Samoan
	Tongan
	Guamanian (Chamorro)
	Vietnamese
	Hispanic/Latino
	African American/Black
	Unknown/refused
Other (specify):	

3. Were you **born in Hawai'i**?      Yes      No

If not, what year did you move to Hawai'i? \_\_\_\_\_ (year)

4. Your **Education**: Circle the highest grade or year of school that you **completed**.

5    6    7    8    9    10    11    12    13    14    15    16    17+

5. Your **Employment**:    What is your current employment status?

Working      Disability      Unemployed      Student      Other \_\_\_\_\_

6. Your **Income**: Check the category that is closest to your current income from all sources.

\$0 - \$10,000 \_\_\_\_\_

\$10,001- \$20,000 \_\_\_\_\_

\$20,001- \$30,000 \_\_\_\_\_

\$30,001- \$40,000 \_\_\_\_\_

Over \$40,000 \_\_\_\_\_

**7. How would you describe yourself?**

- Gay/homosexual
- Bisexual
- Heterosexual/Straight

**8. When did you find out you had HIV?**

Month/Year \_\_\_\_\_

**Please answer all of the following questions about your health and relationships.**

Have you been diagnosed with AIDS?	Yes	No
What was your most recent CD4 cell count?		
Do you take anti-retroviral medications?	Yes	No
Have you ever been hospitalized for HIV-related problems?	Yes	No
What HIV-related symptoms have you experienced in the last three months?		

Have you ever used injection drugs?                      Yes    No

Have you ever shared injection drug equipment?    Yes    No

Have you used any of these substances over the last 3 months?

Alcohol            Yes    No

Ice (crystal meth.)    Yes    No

Marijuana        Yes    No

Crack/Cocaine    Yes    No

Others: \_\_\_\_\_  
 \_\_\_\_\_



Number of times in the past 3 months you drank alcohol  
before sexual intercourse \_\_\_\_\_

Which of the following best describes your relationship status at this time (Circle one)

- a) Not having sex
- b) Having sex, but with more than one partner
- c) Having sex with just one partner, but for less than 3 months
- d) Having sex with just one partner for 3 months or longer

Please list the number of partners you had vaginal or anal sex with in the last 3 months and whether or not you told them your HIV status. **Please be sure to write a number in every space. If you did not do a behavior, write a zero (0) in the space.**

Persons you had sex with in the last 3 months	Number in last 3 months	Number you verbally told your HIV status to	Number of those you did not tell your HIV status to, and also did not use condoms with during sex
HIV-positive male partners			
HIV-negative male partners			
HIV-unknown male partners			
HIV-positive female partners			
HIV-negative female partners			
HIV-unknown female partners			

**Appendix G**  
**Sex Partner by Experience Checklist**

**MOST RECENT SEX PARTNER INFORMATION:** Please think about the **last** time you had sex. Try to remember this experience the best that you can and please answer the following questions about that person and that experience.

1. How long ago was the last time you had sex?

In the last 2-3 days or less      About a week ago      More than a week ago      More than a month but less than 4 months ago

2. What was your relationship status to your most recent sex partner? (Check the most accurate description).

Committed	Spouse, primary partner, boyfriend, girlfriend.
Regular	Non-primary partner, but someone with whom you have had sex with more than twice (“affair,” “fling,”)
Casual	Person with whom you are acquainted, and have had a one-night stand or had sex only once or twice
Anonymous	Person whom you did not know (“trick,” hustler, someone encountered at a bathhouse, sex-in-exchange for something, etc)

3. Was this most recent sex partner a man or a woman?      Man      Woman

4. The last person I had sex with:

Told me they were never tested for HIV      Told me they were tested and said they did not have HIV      Told me they were tested and said they did have HIV      We never discussed if they were tested

5. Had either of you been drinking before having sex?

I was drinking      My partner was drinking      Both of us were drinking      Neither of us was drinking

6. Did you use any of the following substances prior to sex with this most recent sex partner?

“Ice” (Crystal meth)      Yes    No

Marijuana                      Yes    No

Crack/Cocaine                Yes    No

Others: \_\_\_\_\_

7.

Did you use condoms every time you had anal or vaginal sex with your most recent sex partner?	Yes	No
Did you tell this person your HIV serostatus?	Yes	No
If yes, did you tell him/her before having sex?	Yes	No
If yes, did you tell him/her by talking about your status?	Yes	No
If you did not tell him/her your HIV status, reason(s) for not telling		

**SECOND MOST RECENT SEX PARTNER**

Please answer the following questions as completely as possible as they relate to the **SECOND MOST RECENT SEX PARTNER** in the past 3 months with whom you had anal or vaginal sex.

1. How long ago was the last time you had sex?

In the last 2-3 days or less

About a week ago

More than a week ago

More than a month but less than 4 months ago

2. What was your relationship status to your most recent sex partner? (Check the most accurate description).

	Committed	Spouse, primary partner, boyfriend, girlfriend.
	Regular	Non-primary partner, but someone with whom you have had sex with more than twice (“affair,” “fling,”)
	Casual	Person with whom you are acquainted, and have had a one-night stand or had sex only once or twice
	Anonymous	Person whom you did not know (“trick,” hustler, someone encountered at a bathhouse, sex-in-exchange for something, etc)

3. Was this most recent sex partner a man or a woman?                      Man    Woman

4. The last person I had sex with:

Told me they were never tested for HIV

Told me they were tested and said they did not have HIV

Told me they were tested and said they did have HIV

We never discussed if they were tested

5. Had either of you been drinking before having sex?

I was drinking

My partner was drinking

Both of us were drinking

Neither of us was drinking

6. Did you use any of the following substances prior to sex with this most recent sex partner?

“Ice” (Crystal meth)      Yes    No

Marijuana                      Yes    No

Crack/Cocaine                Yes    No

Others: \_\_\_\_\_

7.

Did you use condoms every time you had anal or vaginal sex with your most recent sex partner?	Yes	No
Did you tell this person your HIV serostatus?	Yes	No
If yes, did you tell him/her before having sex?	Yes	No
If yes, did you tell him/her by talking about your status?	Yes	No
If you did not tell him/her your HIV status, reason(s) for not telling		

**THIRD MOST RECENT SEX PARTNER**

Please answer the following questions as completely as possible as they relate to the **THIRD MOST RECENT SEX PARTNER** in the past 3 months with whom you had anal or vaginal sex.

1. How long ago was the last time you had sex?

In the last 2-3 days or less      About a week ago      More than a week ago      More than a month but less than 4 months ago

2. What was your relationship status to your most recent sex partner? (Check the most accurate description).

Committed	Spouse, primary partner, boyfriend, girlfriend.
Regular	Non-primary partner, but someone with whom you have had sex with more than twice (“affair,” “fling,”)
Casual	Person with whom you are acquainted, and have had a one-night stand or had sex only once or twice
Anonymous	Person whom you did not know (“trick,” hustler, someone encountered at a bathhouse, sex-in-exchange for something, etc)

3. Was this most recent sex partner a man or a woman?                      Man    Woman

4. The last person I had sex with:

Told me they were  
never tested for HIV

Told me they were  
tested and said they  
did not have HIV

Told me they were  
tested and said they  
did have HIV

We never dis-  
cussed if they  
were tested

5. Had either of you been drinking before having sex?

I was  
drinking

My partner  
was drinking

Both of us  
were drinking

Neither of us  
was drinking

6. Did you use any of the following substances prior to sex with this most recent sex partner?

“Ice” (Crystal meth)                      Yes    No

Marijuana                                      Yes    No

Crack/Cocaine                                Yes    No

Others: \_\_\_\_\_

7.

Did you use condoms every time you had anal or vaginal sex with your most recent sex partner?	Yes	No
Did you tell this person your HIV serostatus?	Yes	No
If yes, did you tell him/her before having sex?	Yes	No
If yes, did you tell him/her by talking about your status?	Yes	No
If you did not tell him/her your HIV status, reason(s) for not telling		

Appendix H

HIV Serostatus Disclosure and Safer Sex

Self- Efficacy Scales

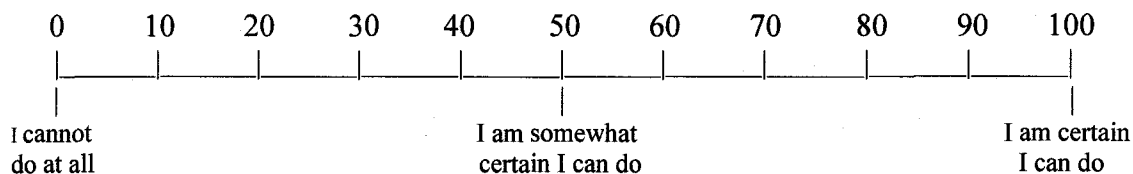


**INSTRUCTIONS.** In this section, you are asked to read a brief story and then answer questions afterward. The story is then repeated with some details changed to make it different. There are four sets of stories. Imagine that you are in the story and please **rate how confident you are that you could perform an action by marking an "X" on each scale below (between 0 – 100).** Use your imagination to put yourself in each story even if it is something that would be unlikely to happen to you. Please answer every question even if you are not currently sexually active.

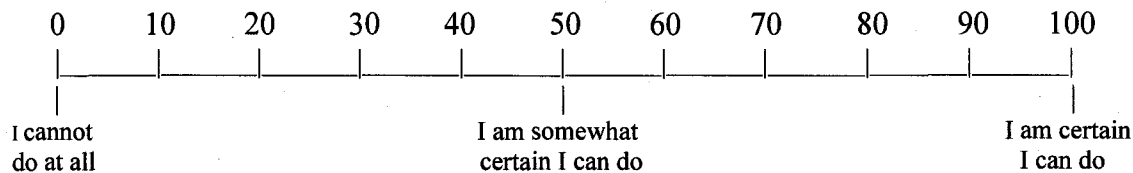
**Story 1 Version A**

This week has been difficult for you and you want to forget all of your problems for a while. You go out walking and met up with some people you know. You go off with them and have a drink to relax. Even though you haven't had much to drink you feel it affecting you. One of your friends introduces you to someone you have seen before and felt attracted to in the past. This person seems to be making it clear that they want to have sex with you. You feel interested.

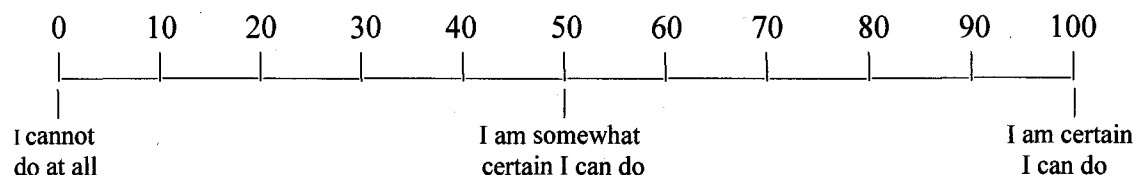
**How confident are you that you could make an effective decision of whether to tell this person you are HIV positive in this situation?**



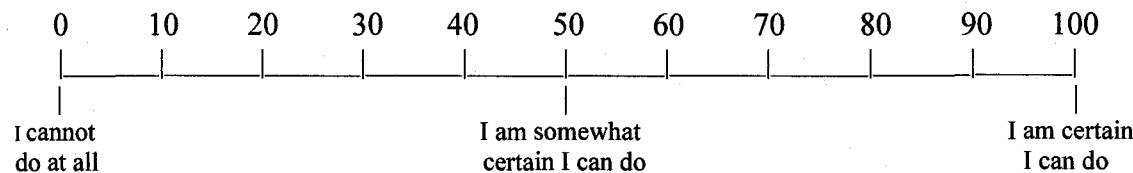
**How confident are you that you could know whether it was safe to tell this person in this situation that you are HIV positive?**



**How confident are you that you could bring up the need to practice safer sex in this situation?**



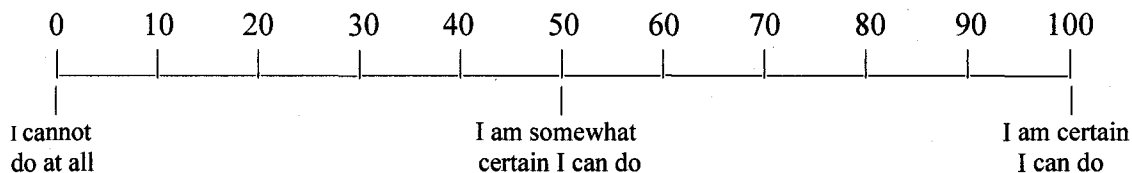
**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**



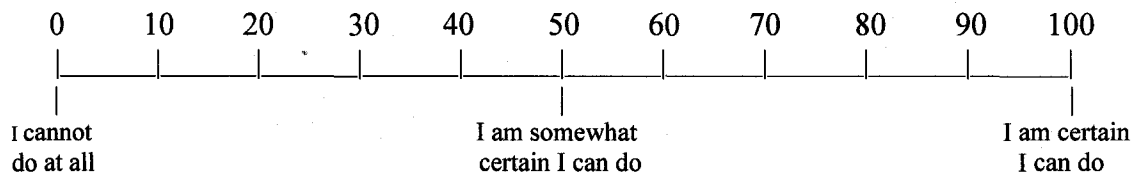
### Story 1 Version B

Just like in the previous story, imagine that this week has been difficult for you and you want to forget all of your problems. You go out walking and meet up with some people you know. You go off with them for a few drinks. You get to feeling pretty buzzed when one of your friends introduces you to someone you have been attracted to in the past. This person seems to be making it clear that they want to have sex with you. You feel like you are a little drunk. You also feel interested in being with them.

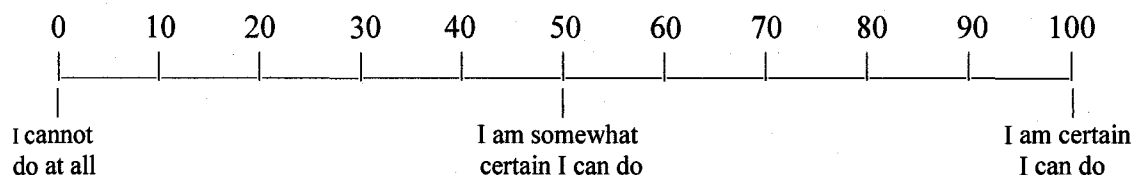
**How confident are you that you could make an effective decision of whether to tell this person you are HIV positive in this situation?**



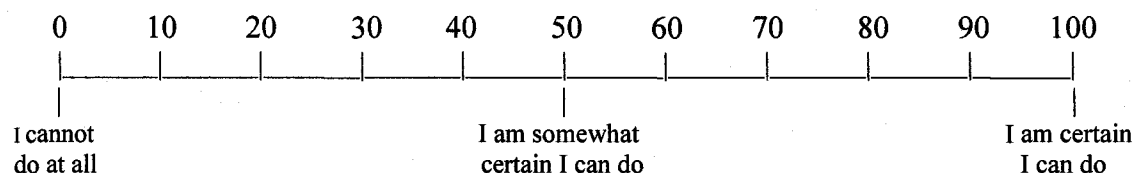
**How confident are you that you could know whether it was safe to tell this person in this situation that you are HIV positive?**



**How confident are you that you could bring up the need to practice safer sex in this situation?**



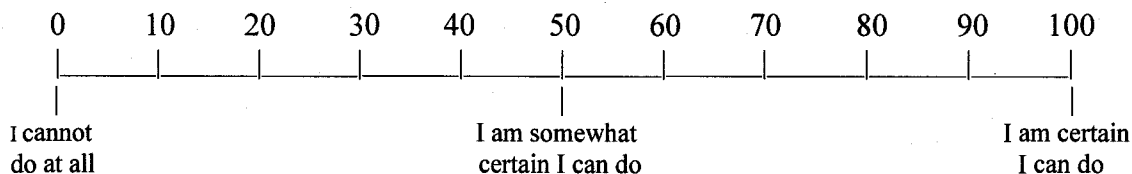
**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**



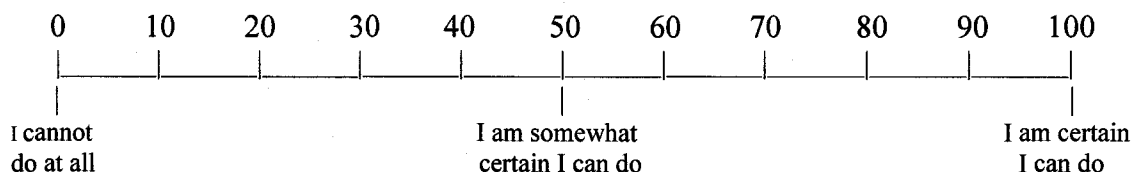
### Story 2 Version A

As in the previous story, imagine that you have had a difficult week. You have been feeling lonely and you realize that it has been some time since you had sex with anyone. You decide to go out and meet some friends to get something to eat. While you were out, you meet a person that you have seen around and think is attractive. They seem interested in you and seem to be flirty with you. Soon it becomes clear that they want to have sex with you.

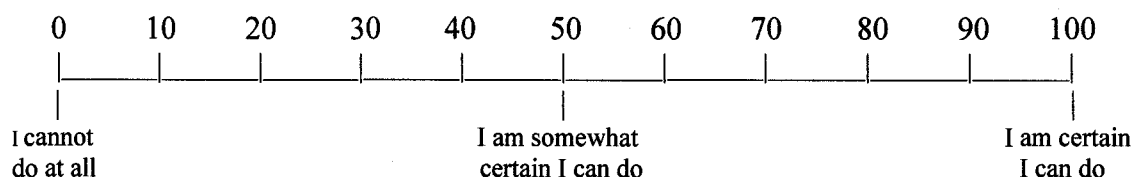
**How confident are you that you could make an effective decision of whether to tell this person you are HIV positive in this situation?**



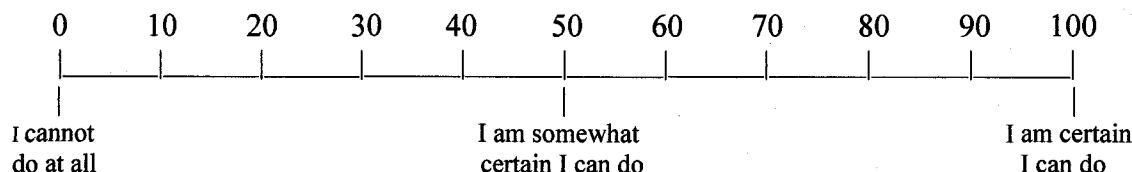
**How confident are you that you could know whether it was safe to tell this person in this situation that you are HIV positive?**



**How confident are you that you could bring up the need to practice safer sex in this situation?**



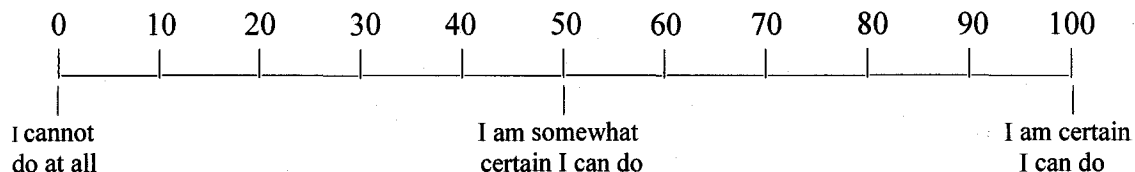
**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**



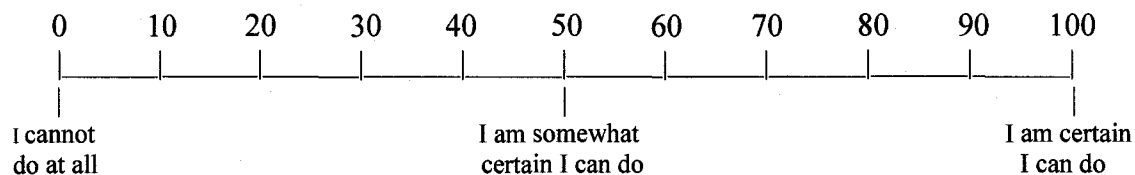
### Story 2 Version B

As in the previous story, imagine that you have been feeling lonely and depressed. You realize that it has been a long time since you were intimate with someone. While you are out you meet a person that you have seen around and think is attractive. They seem interested in you and you want to be with this person.

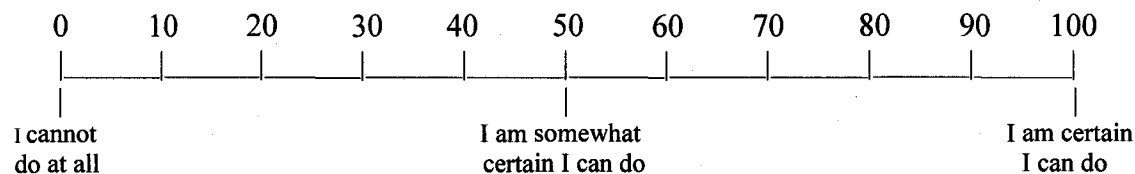
**How confident are you that you could make an effective decision of whether to tell this person you are HIV positive in this situation?**



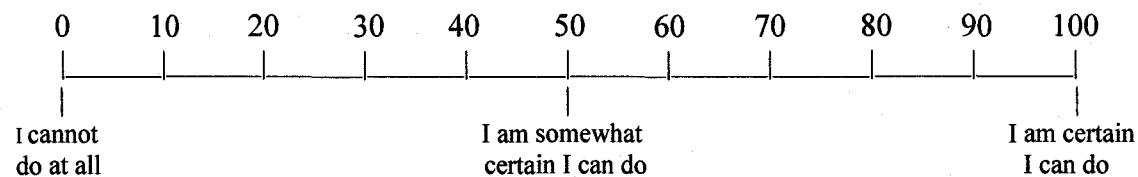
**How confident are you that you could know whether it was safe to tell this person in this situation that you are HIV positive?**



**How confident are you that you could bring up the need to practice safer sex in this situation?**



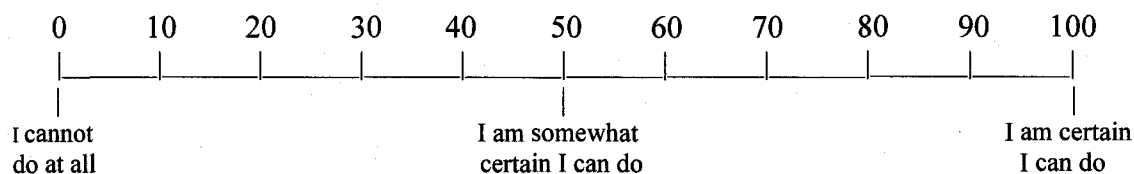
**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**



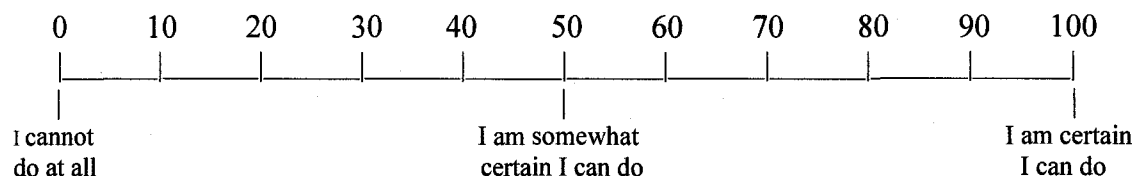
### Story 3 Version A

While you were out with some friends and having fun, you unexpectedly run into an ex-partner from your past. You had sex with this person many times long before you became HIV positive. They start telling you how much they missed being with you and that they think of you often. Then they say that they are not currently partnered. You are feeling good and the mood seems right for the two of you to get together. Because you still like this person and have feelings for them you are wanting to be with this person.

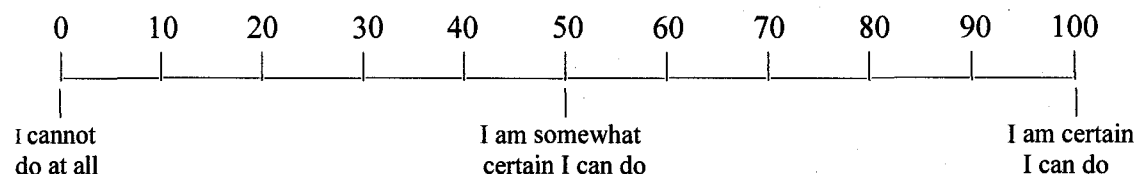
**How confident are you that you could make an effective decision of whether to tell this person you are HIV positive in this situation?**



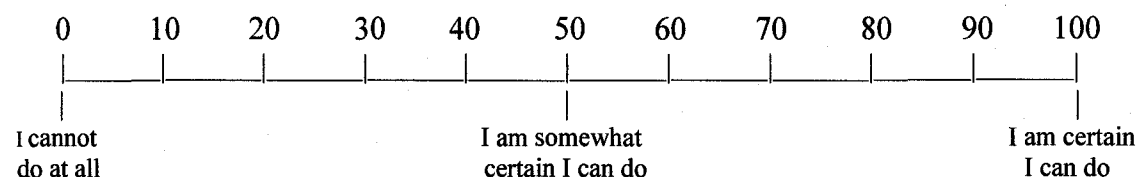
**How confident are you that you could know whether it was safe to tell this person in this situation that you are HIV positive?**



**How confident are you that you could bring up the need to practice safer sex in this situation?**



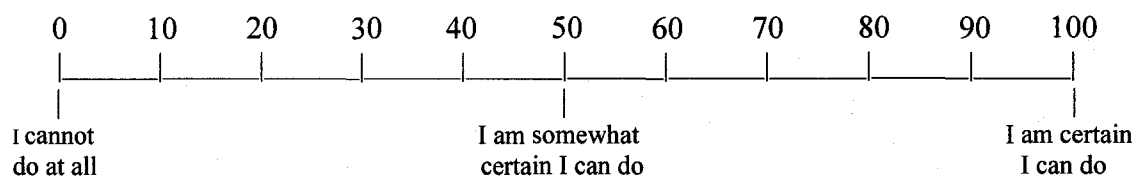
**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**



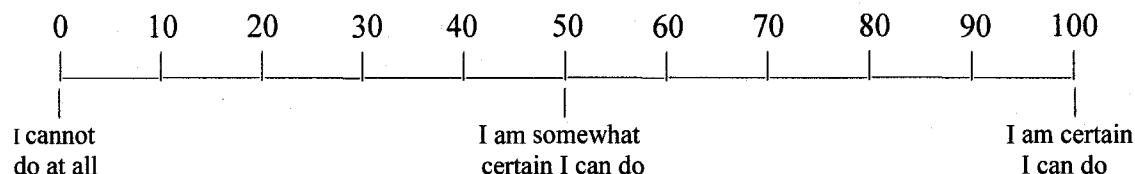
### Story 3 Version B

Imagine that you had been in a relationship with someone who just left you and ended it. You unexpectedly run into an ex-partner from your past who is visiting in town. You had sex with this person many times before you became HIV positive. After telling you how much they missed being with you and that they think of you often, this person asks you to come to their hotel room. You are feeling really good, the mood seems right, and you want to have sex with this person.

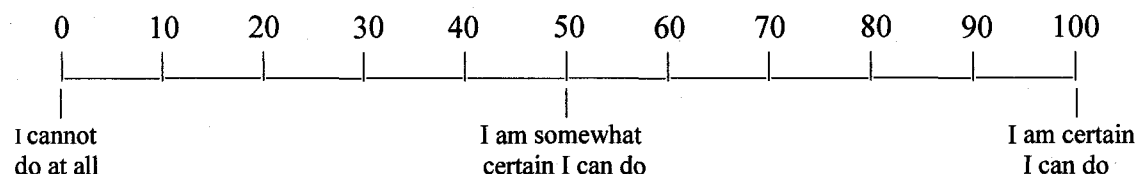
**How confident are you that you could make an effective decision of whether to tell this person you are HIV positive in this situation?**



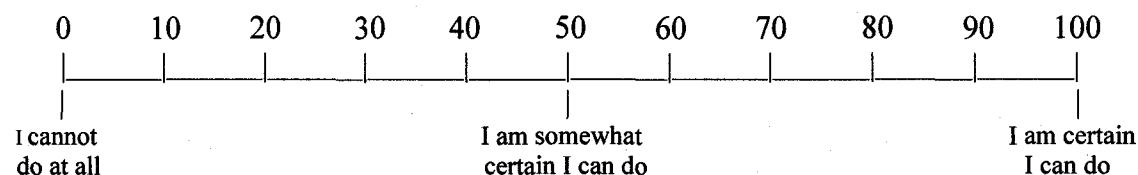
**How confident are you that you could know whether it was safe to tell this person in this situation that you are HIV positive?**



**How confident are you that you could bring up the need to practice safer sex in this situation?**



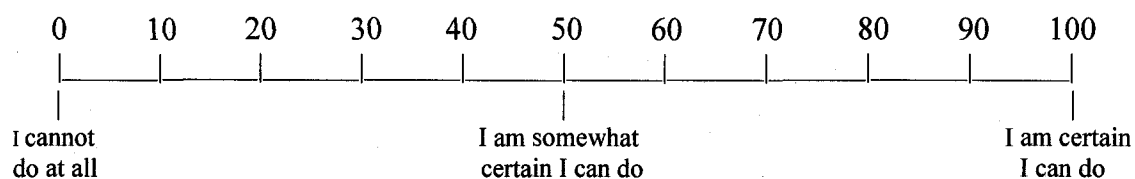
**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**



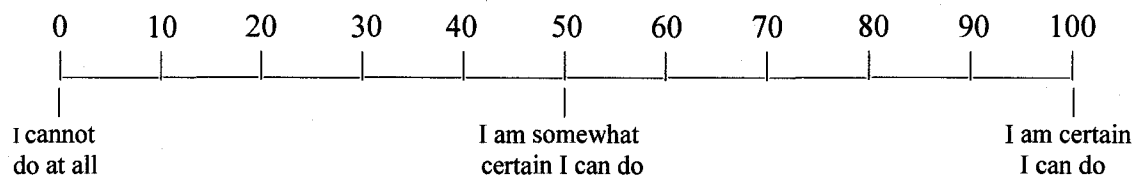
### Story 4 Version A

Imagine that you are in a long-term sexual relationship with a person who is HIV negative. The two of you always practice safer sex and have a very satisfying relationship. You feel particularly good about yourself and your life with your partner. One evening your partner tells you that they want to experience an even higher level of closeness with you and want to have unprotected intercourse, just this one time. You have very strong feelings for this person and the idea of taking your relationship to another level is very appealing to you.

**How confident are you that you could bring up the need to practice safer sex in this situation?**



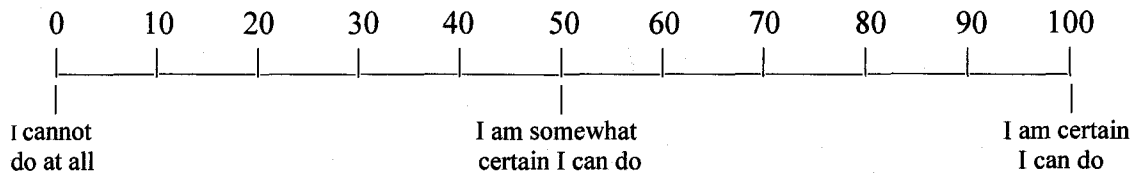
**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**



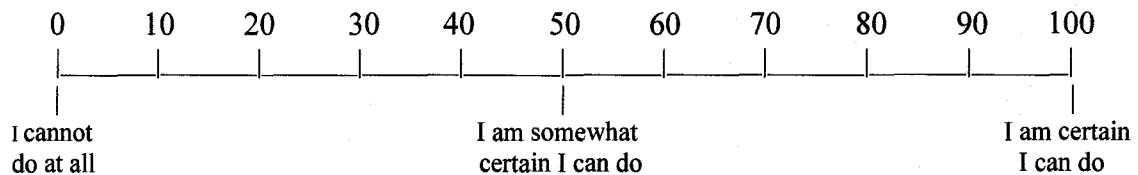
### Story 4 Version B

Like the previous story, imagine that you are in a long term sexual relationship. The two of you always practice safer sex and have a very satisfying relationship. You have been feeling good about your life with your partner. One evening in the midst of hot and passionate foreplay, your partner tells you that they want to experience you completely. Your partner moves toward having unprotected intercourse, saying, "Please, just this one time." You are caught up in the moment and feeling a strong sense of desire to give your partner what they want.

**How confident are you that you could bring up the need to practice safer sex in this situation?**



**How confident are you that you would refuse to have unsafe sex in this situation even if your partner pressures you to be unsafe?**





Appendix I  
G-Power Analysis

## G-Power Analysis

Effect size: Moderate

Analysis: A priori

### Chi-Square Test (Frequencies)

Effect size	.30 (Medium)
Alpha	.05
Power	0.80
Df	1
Critical Chi-square (1)	3.8415
Total sample size	88
Actual Power	0.8035

### T-Test for Correlations (Two-Tail)

Effect size	.30 (Medium)
Alpha	.05
Power	0.80
Delta	2.8478
Critical +	(80) = 1.9901
Total sample size	82
Actual Power	0.8033

### F-tests in Multiple Regression

Effect size	0.15 (Medium)
Alpha	0.05
Power	0.80
Predictors	4
Lambda	12.7500
Critical Value	F (4,80) = 2.4859
Total Sample Size	85
Actual Power	0.8031

### F-test for ANOVA

Effect size	F = .25 (Medium)
Alpha	.05
Power	0.80
Critical F	<1, 126> = 3.9163
Total sample size	128
Actual Power	0.8015

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