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The Influence of HIV Stigma and Disclosure on Psychosocial Behavior

James Minson
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Walden University
2014

Abstract

The Influence of HIV Stigma and Disclosure on Psychosocial Behavior

by

James Minson

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Health Psychology

Walden University

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Abstract

Human Immunodeficiency Virus (HIV) remains a serious public health issue, and many social factors are involved in virus transmission and treatment. The current conceptualization of how HIV status disclosure and perceived stigma of HIV diagnosis interact is undeveloped. This study was based on social cognitive theory and tested hypothesized positive relations between HIV serostatus disclosure, social support, and self-efficacy. In addition, self-rated HIV stigma was examined as a potential mediating variable. Participants were 109 HIV positive, mostly White gay men recruited via an online bulletin board. They completed the medical outcomes study social support survey, the general self-efficacy scale, the HIV stigma scale, a HIV serostatus disclosure questionnaire, and a demographic questionnaire. Linear regression revealed that social support significantly and positively predicted HIV serostatus disclosure. HIV stigma mediated this relation by lowering the perception of support. Sexual orientation disclosure significantly and positively predicted HIV serostatus disclosure and social support. It is recommended that future research examine the impact of HIV stigma in different groups (racial and sexual minorities, and women). Culturally-sensitive assessments may also be used to measure individual levels of perceived stigma, HIV status disclosure, and social support. Action for social change includes raising general public awareness regarding HIV misconceptions, such as transmission risk; lowering stigma and raising support through public education; and increasing sexual minority status self-identification via outreach in low self-disclosure communities.

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Chapter 1: Introduction to the Study

Many types of illness and disease are associated with stigma, and because social support is essential to optimal health (Vedhara & Irwin, 2005), stigma that interferes with support is a serious problem. Stigma may inhibit self-disclosure (Zea, Reisen, Poppen, Bianchi, & Echeverry, 2007), impede access and the utilization of healthcare services, and impinge upon self-efficacious behavior (Bandura, 1997). Although treatments for HIV and AIDS have improved (Pezzotti et al., 2003), many individuals living with HIV continue to face stigma and discrimination that may limit the receipt of support, negatively influence self care behavior, and increase disease transmission risk (Parker & Aggleton, 2003). Men who have sex with men (MSM) and racial minorities are at highest risk for HIV (Centers for Disease Control and Prevention [CDC], 2010a), and the stigma and discrimination associated with minority status may be compounded with the added stigma and discrimination associated with HIV seropositive status (Diaz, Ayala, & Bein, 2004).

The U.S. Census Bureau (2010) reported an increase in poverty in 2009. More than 40 million Americans were living in poverty, and more than half of all impoverished people were Black and Hispanic. Compared to Whites, Blacks were almost twice as likely not to have health insurance, and the percentage of Hispanics lacking health insurance was almost three times higher than nonHispanic Whites. Although African Americans made up around 13% of the overall population, the Black community experienced almost half of all AIDS cases (CDC, 2010a). The U.S. Department of Health and Human Services (2009) stated that Black men were nine times more likely to die

from AIDS than White men, and Black women were 20 times more likely to die from AIDS than White women. Regardless of social, educational, and medical investments, infection rates remained consistently higher for racial, ethnic, and sexual minorities (CDC, 2010c).

Stigma, discrimination, lack of education, and lack of access to healthcare for minority individuals may contribute to not being tested or receiving treatment for HIV and AIDS (CDC, 2010b). In 2008 around one in five MSM was HIV seropositive. African Americans had the highest rate of infection at 28%, followed by Latinos at 18%, nonHispanic Whites accounted for 16%, and multiracial or other race made up 17% of cases (CDC, 2010a). Close to half of all those who were infected were not aware of it (CDC, 2010b). The CDC (2010c) stated that if socially based issues continue to prevent individuals from being tested and treated for HIV, transmission rates will continue to be high, and survival rates will remain low, particularly for minorities.

Research has shown that higher self-esteem has been associated with safer sex practices in gay men (Preston, D'Augell, Kassab, & Starks, 2007), self-disclosure of HIV seropositive status between sex partners has been associated with the use of condoms (Sullivan, 2005), and social support is essential in fostering optimal health behavior (Vedhara & Irwin, 2005). Socially based phenomena including stigma and discrimination that potentially lower self-esteem, inhibit self-disclosure, and reduce social support may contribute to the problem of HIV and AIDS and explain why the prevalence is higher in minority groups who routinely experience stigma and discrimination (Parker & Aggleton, 2003).

Research on self-disclosure in HIV seropositive individuals has been limited (Serovich, Reed, Grafsky, Hartwell, & Andrist, 2011; Simoni & Pantalone, 2004). Research on social support and HIV has been inconclusive, and the psychosocial influence of self-efficacy in HIV seropositive individuals has received little research attention (Ironson & Hayward, 2008). The influence of stigma has been widely studied but continues to be a significant issue for many people living with HIV and AIDS (Parker & Aggleton, 2003; National Gay and Lesbian Taskforce, 2010). Because stigma, social support, self-disclosure, and self-efficacy are central concepts to social cognitive theory (Bandura, 1989), social cognition will comprise the theoretical base for this study in an attempt to fill a gap in the existing literature of how these concepts interact for those living with HIV.

Background of the Study

In the beginning of the AIDS epidemic, the HIV seropositive test result was considered to be a death sentence, and the decision to disclose HIV seropositive status to friends, coworkers, sex partners, and family weighed heavily (Black, 1986). There is no cure for AIDS, and in the early years before successful treatments patients experienced a wide range of devastating symptoms (Klosinski, 2013; Sepkowitz, 2001). Stigma spread rapidly, and with little guiding scientific understanding, fear and emotion clouded common perception (Black, 1986; Parker & Aggleton, 2003; Klosinski, 2013; Sepkowitz, 2001). HIV became known as the gay plague and was sensationalized in newspaper articles and television news (Black, 1986; Klosinski, 2013; Sepkowitz, 2001). Religious conservatives believed that AIDS was punishment from God in retribution for

promiscuity and sexual deviance (Black, 1986). Conservative politicians who were backed by the religious right did not want to be seen supporting a public health issue that was widely considered to stem from immoral behavior (Black, 1986). Misconceptions were common, and many people believed that HIV could be contracted through casual contact (Klosinski, 2013; Sepkowitz, 2001). HIV and AIDS patients and their families perceived overt social discrimination (Bogart et al., 2008), and discrimination was frequently perceived from providers within the healthcare setting (Rintamaki et al., 2007).

Being gay was automatically equated with having AIDS (Black, 1986). The high mortality rate from AIDS added fear to the shame, isolation, and ostracism many gay people experienced (Black, 1986; Parker & Aggleton, 2003). Although it was understood that HIV was transmitted through bodily fluids and could be prevented through the use of condoms, for many reasons, safe sex was not universally adopted in the gay community (Klosinski, 2013; Sepkowitz, 2001). In the larger cities, everyone in the gay community knew someone who had died from AIDS, and there was a sense of inevitability, combined with safe sex fatigue, survivor guilt, and low self-worth that caused many men to lapse in consistent condom use (Black, 1986; Klosinski, 2013; Sepkowitz, 2001).

The Reagan era saw reductions in healthcare funding, and because AIDS was a socially and politically charged issue, the overall response was sluggish (White, 2004). The social gains made by other minority groups in the 1960s and 70s were coming much slower for the gay community, and discrimination remained largely unchecked (Black, 1986). Legislation that protected and integrated minorities and brought women closer to

equality was missing for sexual minorities (National Gay and Lesbian Taskforce, 2010). The limited number of intervention programs aimed at reducing HIV and AIDS related stigma produced minimal results, and the stigma had become entrenched (Brown, Trujillo, & Macintyre, 2001).

Three decades later, stigma, discrimination, and a lack of legislative protection persist (National Gay and Lesbian Taskforce, 2010). There are only limited federal laws banning employment discrimination based on sexual orientation or gender identity (Human Rights Campaign, 2014; U.S. Equal Employment Opportunity Commission, 2009). It is legal in 29 states for employers to discriminate based on sexual orientation, and 38 states allow discrimination based on gender identity and expression. Many states have banned same sex marriage, and restrictions on adoption make it difficult to start a family. In 2008, more than \$83 million was put in by both sides of the Proposition 8 campaign to ban gay marriage in California, making it the most expensive social issue campaign in history (“Proposition 8,” 2010). Gay students are frequently harassed at school, and are more likely to suffer from depression and suicidal ideation (Goodenow, Szalacha, & Westheimer, 2006). Gay teenagers may be harassed at home by family members, and an inordinate number either run away from home or are thrown out by their parents to live in the streets where they become vulnerable to violence and abuse (Ray, 2006). Moreover, homeless youth are frequently exposed to drugs and sexual exploitation, placing them at risk for associated mental and physical health concerns. Additionally, an environment of antigay sentiment may generate the perception of discrimination and stigma in sexual minority youth (Diaz et al., 2004; Zea et al, 2007).

HIV has no cure, and treatment is expensive; therefore, prohealth maintenance and transmission reduction via social support and self-efficacious behavior has enormous potential. Because individual self-disclosure can mediate social support (Zea, 2008), and support is essential for the development of self-efficacy, these factors work together to reduce behavioral risk and increase prohealth habits (Bandura, 1997). On the other hand, stigma can have a negative impact.

Problem Statement

The problem is that HIV infection among minority groups including gay men, Latinos, and African Americans is disproportionately high compared to the general population and is not going down (CDC, 2010c). Around 18,000 people die each year from AIDS, and more than 1.1 million people living with HIV require a lifetime of medical care estimated at an annual cost of \$20 billion (CDC, 2010c). The complexity and nuance of the different minority and subgroups that are most affected by HIV and AIDS is frequently not taken into consideration in the design of treatment and prevention programs (CDC, 2009a). HIV and AIDS programs generally do not extend beyond educating individuals about the risks of unsafe sex and the various methods of prevention (e.g., safe sex and abstinence, CDC, 2009a). The traditional medical model does not adequately address issues of stigma and discrimination frequently faced by minority groups (Diaz et al., 2004; Parker & Aggleton, 2003), and culturally specific, community based HIV and AIDS programs have been limited (Brown et al., 2001; Johnson et al., 2008; Safren et al., 2010).

Purpose of the Study

This dissertation examines the interrelationships between self-disclosure, social support, self-efficacy, and stigma for HIV seropositive individuals. Because minority groups are at highest risk for HIV infection (CDC, 2010a), identifying differences in the interaction between these variables in these groups may help to build the case for HIV and AIDS interventions based on social cognition theory concepts. For example, stigma may be higher, and self-disclosure may be lower in some groups compared to others, thus limiting the amount of social support that is received, impeding the development of self-efficacy. A review of the evidence on the psychosocial influences on HIV and AIDS related behavior including disclosure, support, and self-efficacy has shown inconclusive results (Ironson & Hayward, 2008). Research analyzing the interaction of these factors has not been found. A review of 23 articles concerning 24 HIV stigma models showed that there was a lack of clarity in the conceptualization and measurement of HIV stigma at an individual level (Earnshaw & Chaudior, 2009). An extensive review of HIV serostatus disclosure models showed that most models dealt with the discrete disclosure event and not with the overall outcomes that followed disclosure (Chaudoir et al., 2011). This study attempts to fill a gap in the literature by showing how much these factors interact and vary. The purpose of the study is to examine the interrelationships between levels of disclosure, social support, self-efficacy, and stigma in HIV seropositive individuals in order to determine the existence and amount of mutual influence between these variables.

It is hypothesized that disclosure, social support, and self-efficacy have mutually positive interactions, and as the level of one of these variables increases, so does the levels of the other two. On the other hand, it is hypothesized that there is a negative relationship between stigma and disclosure, social support, and self-efficacy. As levels of stigma increase, levels of disclosure, social support, and self-efficacy decrease. The variables of age, time since testing seropositive for HIV, gender, sexual orientation, sexual orientation disclosure, education level, employment status, income level, relationship status, and ethnicity and race were included to add depth to the analysis and to monitor as potential confounders. The study was quantitative in the form of an anonymous survey that was completed electronically online. Anonymity helped to ensure truthful responses. The study group was a convenience sample of HIV seropositive adults over age 18 who could read and write in English. Electronic surveys were accessed through an e-mail link that was dispersed through the Walden University participant pool.

Nature of the Study

The following research questions have been created around the social cognitive theory concepts of self-disclosure, social support, self-efficacy, and stigma (Bandura, 1989). Because communication in the form of self-disclosure is necessary to gain support, and support is important for building self-efficacy, individuals who experience social stigma may also experience reduced openness for disclosure, receive less support, and may have lower levels of self-efficacy (Bandura, 1994; Zea et al., 2007). Because disclosure and self-efficacy are associated with lower sexual risk behavior and social support is associated with better health outcomes (Sullivan, 2005), understanding who is

experiencing more self-disclosure, social support, and self-efficacy, and less stigma may help to provide a better understanding of the psychosocial influences on HIV disease progression and transmission risk (Ironson & Hayward, 2008; Preston et al., 2004). Statistical support for the research questions were derived from data gathered from surveys comprising the medical outcomes study (MOS), social support survey (Sherbourne & Stewart, 1991), the general self-efficacy scale (Schwarzer & Jerusalem, 1995), the HIV stigma scale (Berger, Ferrans, & Lashley, 2001), an HIV serostatus disclosure questionnaire (Stutterheim et al., 2011), and a personal information questionnaire. The data were analyzed using bivariate correlations and linear regressions.

Research Questions and Hypotheses

Research Question 1: Are there significant positive relationships between disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy?

H1_a: There are significant positive correlations between disclosure of HIV seropositive status and perceived social support, disclosure of HIV seropositive status and perceived self-efficacy, and between perceived social support and perceived self-efficacy.

H1_o: There are no relationships between disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy.

H1_{b_a}: Perceived social support positively predicts disclosure of HIV seropositive status.

H1_{b_o}: Perceived social support does not predict disclosure of HIV seropositive status.

H1c_a: Perceived self-efficacy positively predicts disclosure of HIV seropositive status.

H1c_o: Perceived self-efficacy does not predict disclosure of HIV seropositive status.

Research Question 2: Is the experience of HIV-related stigma related to significantly less HIV seropositive status disclosure, lower social support, and lower self-efficacy?

H2a_a: There are significant negative correlations between perceived HIV stigma and disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy.

H2a_o: There are no relationships between perceived HIV stigma, HIV seropositive status, perceived social support, and perceived self-efficacy.

H2b_a: Perceived HIV stigma negatively predicts disclosure of HIV seropositive status.

H2b_o: Perceived HIV stigma does not negatively predict disclosure of HIV seropositive status.

H2c_a: Perceived HIV stigma negatively predicts perceived social support.

H2c_o: Perceived HIV stigma does not negatively predict perceived social support

H2d_a: Perceived HIV stigma negatively predicts perceived self-efficacy.

H2d_o: Perceived HIV stigma does not negatively predict perceived self-efficacy.

Theoretical Base

Social learning theory (Miller & Dollard, 1941; Rotter, 1954) established the concept that behavior is adopted through observation and is perpetuated by reinforcement. Both pro and antisocial behavior can be produced through observation, practice, and reward (Bandura, 1977). Based on social learning theory, Bandura (1989) established social cognitive theory to explain behavioral development in terms of the interplay between the individual and his or her social environment. According to social cognitive theory, the individual is not entirely under the control of environmental circumstances, and each person has the capacity to understand how his or her behavior can interact with, influence, and alter a given situation (Bandura, 1977). As well as being molded by the environment, each individual has the ability to shape the social setting through action.

This process may be easier when there is agreement between the individual and the social context and more difficult for the minority individual who is stereotyped and discriminated against based on ethnicity, race, gender, or sexual orientation (Sue & Sue, 2012). Because minority individuals may shift between different groups that adhere to different beliefs and values, the processes of social cognition may be less congruent compared to those who occupy majority or dominant status. For example, an individual may be openly gay to supportive friends whilst hiding his or her sexual orientation from family and at work where antigay sentiment is expressed. Adapting to different situations may become stressful when there is discord between the individual's inner values and beliefs and those of the group. Individuals from other cultures may also have difficulty

adapting to the differences in American society. For example, the Latino immigrant who was raised in a collectivist culture that emphasizes the needs of the group may find it difficult to adjust to the American individualist culture that places preference on the needs of the individual (Diaz et al., 2004; Shafiro & Hammer, 2004). The more discordant the needs and values of the individual are with those of the group, the more difficult it may be to balance the two, increasing the level of stress that may be involved (Sue & Sue, 2012).

The social cognitive theory concept of self-efficacy (Bandura, 1997) outlines the level of awareness and belief the individual has in his or her capacity to positively interact with the social environment. The individual who believes that he or she has little control over social and environmental circumstances would be described as having low self-efficacy, compared to someone with high self-efficacy who believes he or she has the capacity to change the situation for the better. For example, rather than living with the fear of how the disclosure of sexual orientation and HIV seropositive status might be taken by friends, family, or coworkers, the self-efficacious individual may preempt his or her disclosure with informative materials that raise awareness and education surrounding the issues to be disclosed. Moreover, the self-efficacious individual may take action to lower sexual risk and the transmission of disease, thus serving the interests of public health by lowering the number of new infections. Self-disclosure assists in garnering support that is essential for optimal health behavior, and social support helps to build self-efficacy that is integral in prohealth and prosocial behavior (Bandura, 1989). The concepts of social cognition, self-efficacy, and social support may be put to use in

enabling prohealth behaviors and combating stigma for vulnerable individuals and groups that include racial and sexual minorities confronting HIV and AIDS (Bandura, 1997).

Definition of Terms

Acquired Immunodeficiency Syndrome (AIDS): AIDS is the advanced stage of HIV disease where the immune system has been weakened to the point where it cannot fight infection and disease (Sepkowitz, 2001). AIDS patients are susceptible to a wide range of opportunistic infections. The CDC (1992) classified AIDS categories according to the number of CD4+ T-lymphocyte white blood cells per microliter of blood. Numbers lower than 500 cells represent compromised immunity and a level of AIDS progression where medical treatment is urgent.

Human Immunodeficiency Virus (HIV): HIV is the human retrovirus that causes AIDS by attacking the immune system and specifically CD4+ T-lymphocyte blood cells that protect the body against infection and disease (Sepkowitz, 2001). The virus may be detected in the blood through antibody tests and directly measured in terms of viral load.

Self-efficacy: A personal belief in having the capacity to perform at levels that are influential over life events. Self-efficacious beliefs influence thoughts, feelings, motivation, and behavior (Bandura, 1994).

Self-esteem: The subjective appraisal of inner traits, qualities, and abilities, and the perception of how these appear to others in the social circle (Baumeister, Campbell, Krueger, & Vohns, 2003).

Self-regulation: The involvement of understanding and acceptance of personal health issues in monitoring and directing emotions, behavior, and actions toward prohealth goals (Cameron & Leventhal, 2003).

Social cognitive theory: The individual is an emergent agent who develops through a process of reciprocal interaction with the environment. The individual is neither completely independent, nor entirely manipulated by his or her environment; rather he or she makes decisions and takes action based on a cognitive appraisal of each situation that is influenced by both personal and environmental factors (Bandura, 1989).

Social support: Having a belief that one is cared for and loved, is held in high regard, and is valued. Belonging to a network that communicates effectively and has a sense of mutual obligation (Cob, 1976).

Stigma: HIV-related stigma includes the adverse policies, beliefs, and attitudes that are directly associated with those who are perceived to have HIV or AIDS and those they are closely connected to. Stigma generates prejudice that devalues, discounts, discredits, and discriminates against individuals and groups, further adding to the detrimental effects of inequality based on gender, sexual orientation, and race (U.S. Department of Health and Human Services Health Resources and Services Administration HIV/AIDS Bureau, 2011).

Assumptions

This study is based on the assumption that there is a reciprocal relationship between self-disclosure, social support, and self-efficacy, and that stigma interferes with this relationship. Studies on the influence of social support have not produced conclusive

evidence (Ironson & Hayward, 2008), and in some situations disclosure may lead to increased rejection and reduced support (Diaz et al., 2004; Sullivan, 2005). Another assumption is that social support is beneficial, especially for optimal health (Vedhara & Irwin, 2005), but this may not always be the case. Some social networks may support unhealthy behavior such as drug and alcohol abuse and high-risk sexual behavior (Diaz et al., 2004; Halkitis & Parsons, 2003). Because HIV and AIDS are most prevalent in sexual and racial minority groups, it is assumed that levels of self-disclosure, social support, and self-efficacy will be lower in these groups and that levels of stigma will be higher compared to nonminorities. Minority status, however, does not represent clear or total values. For example, an individual may be a sexual minority and not a racial minority and vice versa.

The study group consisted of a convenience sample of anonymous volunteers with the assumption that the group was a true representation of the larger HIV seropositive population. Without personal contact and identifying information, it was difficult to gauge how faithfully the sample represents the population. It was also assumed that the information provided was truthful and accurate, and due to anonymity, this was not verifiable.

Limitations

Because social support can vary, especially over time, there are shortfalls to a study that is limited to a narrow time reference (Reilly, Woodruff, Smith, Clapp, & Cade, 2010). Individuals may gain or lose support at different times and the quality of support may change over time. Disclosure can also change over time. The newly infected

individual may initially keep his or her HIV seropositive status secret and then begin to disclose over time (Zea et al., 2007). The development of self-efficacy is also a process that can occur across the lifespan (Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001). An individual may exhibit low self-efficacy at one point in his or her life and then go on to develop higher levels at a later time. A longitudinal study that follows participants over a substantial period of time may produce a more detailed picture of disclosure, support, and self-efficacy compared to a single reference in time.

Data collected by the CDC (2010b) in 2008 showed that almost half of MSM who were HIV seropositive had no knowledge of being infected. Limiting this study to survey only participants who are aware of being HIV seropositive means HIV seropositive individuals who are unaware of this status will not be included, thus potentially reducing the scope of population that is represented. Because the sample size was relatively small compared to the size of the population, some groups (gender, ethnic or racial) may not have enough representation to enable statistical analysis to be performed based on that group category. Because the study is an online survey, individuals who do not have access to the Internet will not be able to participate, potentially reducing the sample to those who live in areas with Internet access and those who can afford to access the Internet.

Delimitations

Self-disclosure involves communication styles, methods, and forms of expression that may be influential but are beyond the scope this study. Questions about disclosure included sexual partners, friends, family, acquaintances, colleagues, and health care

providers for HIV seropositive status, and friends, family, and coworkers for sexual orientation. While this provided an overall picture of who is receiving disclosure about these two items, the quality, volume, and content of disclosure was not known. The full range and depth of disclosure were not studied, and there may be other influential factors that were not covered that require further research. Because racial and sexual minorities experience discrimination and stigma in many different domains, forms, and levels (National Gay and Lesbian Taskforce, 2010; Sue & Sue, 2012), and this study only surveyed the perception of HIV related stigma, the larger scope of discrimination and stigma experienced by these groups was not assessed. Discrimination and stigma related to factors other than HIV may influence the perception of HIV-related stigma; however, assessing all of the different types and levels of discrimination and stigma experienced by minority groups is outside the scope of this study.

Significance of the Study

Open communication is essential for building self-efficacy and social support (Bandura, 1997). Self-efficacy can assist in moderating HIV risk behavior and supports optimal self-care habits, and social support is essential for optimal physical and mental health (Vedhara & Irwin, 2005). Evidence that signifies an interrelationship between self-disclosure, social support, and self-efficacy, and how stigma may limit this interaction, may have numerous social and health implications. For example, finding a group who has higher than average HIV infection rates, lower than average levels of disclosure, social support, and self-efficacy, and higher than average levels of perceived stigma may support the development of social and cultural interventions that reduce stigma and raise

levels of these other factors. This significance may support further inquiry into identifying the specific nature of how stigma interacts with disclosure, support, and self-efficacy within particular groups.

Chronic illness raises challenges for healthcare providers and requires behavioral changes for the patient and his or her friends and family. The added element of stigma makes the challenge more complex and difficult. Long-term treatment plans require dedicated maintenance and diseases such as HIV may involve expensive medicines with frequent checkups and testing. Identifying where and how to reduce stigma and facilitate communication and social support that raises self-care and reduces disease progression may help to provide a better quality of life for HIV patients and lower the burden on those who take care of them. Identifying factors relative to increasing self-efficacy that helps to reduce disease transmission behavior may in turn reduce the number of new infections thus lowering the social and economic burden of care. Because self-disclosure, social support, and self-efficacy are traits that can be associated with any number of prosocial behaviors not limited to health care, the significance of results in this study may be transferable to other groups dealing with the impact of stigma.

Summary and Transition

Chapter 1 highlights that HIV and AIDS remains a global health crisis with a disproportionately high prevalence within minority populations in the United States. Three decades of prevention programs have not effectively addressed this entirely preventable disease. Issues of discrimination and stigma that are commonly experienced by HIV seropositive sexual and racial minorities may reduce self-disclosure, social

support, and self-efficacy. Because these are contributing factors for pro health behavior, lower levels may parallel higher HIV risk behaviors and negatively impact personal health maintenance strategies. Evidence supporting a positive interrelationship between self-disclosure, social support, and self-efficacy, and how this is impacted by stigma in different social and cultural environments is essential in broadening the understanding of the psychosocial factors involved in HIV risk behavior and health maintenance (Ironson & Hayward, 2008).

While medical treatments have raised the quality of life and prolonged life expectancy for HIV seropositive individuals, the psychosocial issues of stigma and discrimination continue to hinder social support that is essential for improved health, self-care habits, and risk reduction behavior (Parker & Aggleton, 2003). Research supporting the concept that HIV prevention strategies and self-care are socially contextual, and not solely the burden of the individual, may help to support the case for more community-based social and cultural intervention programs. Lowering stigma, raising disclosure, generating support, and raising self-efficacy can serve to complement and enhance the effectiveness of medical treatments for HIV as well as improving risk reduction. Chapter 2 is a literature review that relates to the concepts, theories, and ideas that were introduced in Chapter 1. Chapter 3 outlines the measures used in this study, the sample group that was surveyed, the types of descriptive and inferential statistics that were used, and how they were analyzed. Chapter 4 describes the results of the statistical analysis. Chapter 5 discusses the study findings, the implications for social change, and recommendations for potential research and action.

Chapter 2: Literature Review

Introduction

Chapter 1 briefly introduced some of the complex social issues associated with HIV and AIDS. HIV seropositive individuals often experience poverty, racism, homophobia, discrimination, and stigma (Diaz et al., 2004; Ironson & Hayward, 2008; National Gay and Lesbian Taskforce, 2010). The need for more interventions that focus on the social and cultural complexities surrounding HIV and AIDS has been established. However, research on the psychosocial factors that are involved is preliminary and more research is required (CDC, 2009b; Ironson & Hayward, 2008).

Because interpersonal communication is the basis for social interaction, self-disclosure is considered to be a key aspect in many of the psychosocial factors surrounding HIV (Serovich, Mason, Bautista, & Tovissimi, 2006). Nevertheless, only a few studies have been found concerning disclosure, and only one intervention designed to facilitate disclosure has been through pilot testing (Serovich et al., 2011). A study by Zea et al. (2007) on the predictors of disclosure in HIV seropositive gay Latinos comprised the starting point for the literature review search strategy in this chapter. Many of the studies cited in the Zea et al. study are referenced, along with some of the more recent work by the same authors. The research pool surrounding the psychosocial factors involved in HIV and AIDS is surprisingly small, and many studies are cross-referenced throughout the literature. The search strategy has been to find the most recent publications that also encompass this broader base. Pereira and Penedo (2005) compiled a list of 73 studies of empirically researched psychosocial constructs and the significance

of the outcomes relevant to HIV, mostly from the mid-1990s to the early 2000s. Ironson and Hayward (2008) published a comprehensive review of the evidence on the psychosocial predictors of HIV disease progression. Additionally, a review of the evidence on coping as a multisystem construct that was associated with the pathways mediating HIV disease progression and immune function was published by Temoshok, Wald, Synowski, and Garzino-Demo (2008).

The majority of studies referenced in this review were published in peer-reviewed journals, and some of the theoretical material has been sourced from books. A limited number of articles have been retrieved from web publications. Government sources such as the Centers for Disease Control, the Department of Health and Human Services, and the Census Bureau have been used to supply demographic and statistical information. The majority of the articles have been found through the National Center for Biotechnology Information (2012) website resource PubMed. For example, the key words *predictors of disclosure of HIV serostatus* produced 13 results. Clicking on the *related citations* link next to the Zea et al. (2007) article produced a further 153 results. The key words *HIV, AIDS, HIV seropositive, HIV serostatus, and HIV positive* were used in combination with the key words *self-disclosure, disclosure, self-expression, social support, emotional support, self-efficacy, self-esteem, stigma, social stigma, discrimination, psychosocial, socioeconomic, African American, Hispanic, Latino, sexual minority, minority, racial minority, community interventions, culturally specific interventions, stress and immunity, coping, and coping strategies*.

Studies have shown that self-disclosure is associated with lowered HIV risk behavior and with higher levels of social support; however, the results have not been conclusive, and many intersecting social and cultural factors may be involved (Ironson & Hayward, 2008; Serovich et al., 2011; Zea et al., 2007). Zea et al. (2007) found that the perception of negative consequences prevented HIV seropositive Latino men from being open, especially with casual sex partners, and often with family members, thus increasing the risk for disease transmission and lowering the potential for supportive relationships. The positive psychosocial factors of self-efficacy, active coping, self-expression, finding purpose and meaning in life, and connection with people and spiritual beliefs have all shown good preliminary evidence for beneficial HIV health outcomes and require further research (Ironson & Hayward, 2008; Pereira & Penedo, 2005). Research into how the confluence of negative social stigma and discrimination interacts with these positive psychosocial factors is limited, however, and requires more investigation (CDC, 2009b; Ironson & Hayward, 2008; Zea et al., 2007).

Self-disclosure is fundamental to positive psychosocial interaction. However, Serovich et al. (2011) found that the disclosure of HIV seropositive status between casual sex partners without adequate depth of communication may not be sufficient in reducing HIV risk behavior. Furthermore, although self-disclosure has been shown to raise levels social support, compared to other chronic diseases such as cancer and cardiovascular disease that have shown consistent positive health benefits associated with support (Berkman, 2000; Cohen, 1988; Uchino, 2004, 2006), the results for HIV and AIDS have been mixed (Ironson & Hayward, 2008). Of the 11 studies reviewed by Ironson and

Hayward (2008), five showed a positive relationship between social support and HIV health outcomes, five found no significant relationship, and one study found a negative relationship. The social issues including stigma and discrimination that sexual and racial minorities living with HIV and AIDS often confront may cause inordinate stress and complicate relationships (Ironson & Hayward, 2008; Zea et al., 2007). Simultaneously belonging to disparate groups may mean that support is not always aligned or consistent, and stress may be involved in moving between different social groups (Diaz et al. 2004; Ironson & Hayward, 2008).

This review covers how the stigma associated with racial and sexual minority status and having HIV or AIDS influences disclosure, supportive relationships, and self-efficacious behavior. Some of the reasons are put forward to explain why the disclosure of personal information and obtaining support is more difficult for some groups compared to others (Diaz et al., 2004; Zea et al., 2007). Moreover, the case is made for why disclosure is necessary for obtaining support and developing self-efficacy, and how this relates to optimal personal and community health (Bandura, 1997; Serovich et al., 2011; Zea, Reisen, Poppen, Bianchi, & Echeverry, 2005). The impact of stigma and the stress of withholding disclosure and its impact on health via the hormonal and immune systems are covered in this review. Furthermore, the moderating influence that social support has on stress through the process of disclosure is covered. Some of the physiological mechanisms coinciding with stress and HIV are briefly explained, along with how personality styles and methods of coping can moderate these effects. This literature review shows how many different variables including disclosure, support, self-

efficacy, and stigma interact within the social context and confirms the need that more research concerning these interactions is required. Establishing the literature gap surrounding these psychosocial interactions is the rationalization for this study. The review is organized under the following headings: theoretical antecedents, social cognitive theory, self-efficacy, self-regulation and sexual behavior, disclosure, social support, stigma, the effects of stress on health and immunity, conclusion and transition.

Theoretical Antecedents

Freud (1950) described how many ancient cultures organized social structure around totemic symbols. Before there was any understanding of genetics, totemic guides discouraged the practice of incest, encouraged genetic diversity, and strengthened familial genetic lines. Additionally, totemic culture served to arrange and explain social structuring and may have been a precursor for later developing moral, religious, and cultural practices (Freud, 1950). Freud advanced the concept that totemic society had assisted in the general progression of civilization with the development of early social and culturally guiding structures.

Western culture that values autonomy and individualism relies on social psychology to help explain social development (Freud, 1950). Erikson's (1981) theory of personality development relied heavily on Freud's (1962) construct of the ego as a mechanism that connected the individual with his or her environment, reconciling experience, emotions, and actions within the social context. Freud's psychoanalytic theory was centered on the assumption that the human psyche was divided between the conscious, and unconscious, and the ego was responsible for conscious behavior. The ego

negotiated the demands of the outside world with the individual's inner desires and repressed the unwanted contents of the unconscious. Anxiety derived when conflict developed between these agents. Freud's psychodynamic model served to explain how emotional unrest formed when personal inner desires became out of alignment with the demands of the social environment. For example, the gay individual may feel social pressure to conform to a heterosexual model that does not fit with his or her inner desires, leading to emotional conflict and negative psychological symptoms.

Gender and sexual orientation norms are often presented to children at an early age. Parents and caretakers model expected patterns of behavior and children begin to display gender appropriate play (Goodwin, 2010). Often within the first year, boys show a preference for toys such as trucks and fire engines, and girls develop a preference for dolls. Gender appropriate play may receive positive reinforcement from parents and caregivers, establishing and perpetuating accepted gender role behavior (Bussey & Bandura, 1999). Initially, the child is self-centered and not concerned with outside issues and this slowly gives way to the awareness of having a context and position within the larger setting (Piaget, 1971). The child develops mental schemas to represent the world that combine logic and abstract thought in a process of absorption and adaptation. The child that displays atypical behavior may become aware of being different through various forms of social feedback and may learn to adapt and conform.

Piaget (1971) found that newborns and infants had very little understanding of the outside world and little sense of self within that world. Self-awareness and insight into the world develops through the interactions the child has with the people and things in his

or her surroundings. In the beginning, objects come and go with little significance, and as the child sees, hears, touches, and smells, these objects begin to take on meaning. Piaget explained how the child begins to accept the continuous existence of things outside of him or herself and in the process slowly develops an understanding of the interactions and consequences that occur between the self and the environment. Not only does the child begin to understand the nature of objects in the surrounding environment, he or she learns about his or her individual nature through this relationship. Over time, self-centeredness gives way to curiosity and the child's egocentrism becomes tempered through social interaction.

Western society is largely attributed with an individualistic cultural style, and collectivism is considered to prevail in Asia, Africa, and Latin America (Shafiro & Hammer, 2004). Researchers comparing European American and Puerto Rican mothers found that European American mothers emphasized individuality and the importance of the self in child-raising (Harwood, Handwerker, Schoelmerich, & Leyendecker, 2001). On the other hand, Puerto Rican mothers placed emphasis on the identity of the social group above that of the self. Therefore, the child raised in an individualistic social environment may consider his or her personal needs before considering the needs of the group, and the child raised in a collectivist society may place the needs of the group before his or her own needs. Inner demands placed on the ego may take precedence for the individual in an individualist society, whereas the outer demands of the group might take priority in a collectivist culture. Furthermore, the child raised in a collectivist culture may consider self-expression to be less important than the child raised in an

individualistic society and he or she may exercise more personal censorship concerning issues that could be considered inappropriate for the group (Li et al., 2007). On the other hand, personal opinion and speaking one's mind may be more valued in an individualist society. The dynamic between the needs of the individual and the needs of the group may be different depending on whether the prevailing culture is individualistic or collectivist.

Piaget (1971) developed a series of distinct progressive stages to predict childhood development. For example, self-centeredness gives way to concern for how the self fits in with others. Erikson (1994) also developed a stage theory for identity development that included negotiating challenges between the inner self and the social group. Balancing inner desires with the demands of society helps to ensure healthy development into adulthood. In developing the theory of social cognition, Bandura (1969) suggested that both subjective and objective experiences coexist, rather than the former giving way to the latter. In all of these theories socially modeled behavior prevails over inner desires, however, in social cognition the child does not entirely abandon his or her subjective desires and experiences. Harkening back to Freudian (1962) theory, the amount of difficulty the child has in reconciling subjective experience with social objectivity may depend on the amount of dissonance that exists between the two.

Social Cognitive Theory

As the precursor for social cognitive theory, social learning theory framed the individual as someone who mimics the behavior that is observed in his or her surroundings (Miller & Dollard, 1941). Under social cognitive theory the individual engages with the environment to develop new and adaptive behavior (Bussey & Bandura,

1999). As well as being molded by family, biology, evolution, society, culture, and so forth, the internal processes of reflection, self-evaluation, conscious awareness, and the ability to think in symbolic and conceptual terms enable the individual to project onto his or her environment as well as act as its mirror. Trait acquisition through observation allows humans to quickly learn and adapt to the environment. Conversely, these acquired traits and skills then combine with the cognitive appraisal of each new situation to allow the individual to adapt and shape the environment (Luszczynska, Gutiérrez-Doña, & Schwarzer, 2005). The combination of trait acquisition and the creative application of behavior to shape the environment provide the flexibility to react in unique ways to social and environmental demands as they arise.

Social cognition heavily influences human development and identity expression including gender identity that is assimilated from birth and continues throughout the lifespan (Bussey & Bandura, 1999). Children are given little choice about which gender role they should adopt and both intrinsic and extrinsic motivators act to reinforce gender-appropriate behavior (Bussey & Bandura, 1999). Personality and dispositional traits combine with socially modeled behavior in developing the range and diversity of self-expression. The flexibility of the environment may therefore influence the range and depth of the individual's developmental experience (Bussey & Bandura, 1999). For example, a rigid social environment may stifle personal growth and self-expression. Environmental influences can both stimulate and dampen personal motivation and social interaction.

Social cognitive theory breaks from established theoretical models to provide a developmental framework that is flexible and contextually applicable (Bussey & Bandura, 1999). Social cognition and self-efficacy allow individuals, couples, and groups to break from rigid social imperatives that have been perpetuated and supported by outdated theoretical models. Bussey and Bandura (1999) used the example of the introduction of the contraceptive pill to show how the gender roles of men and women changed almost overnight. Couples could choose whether or not to have a family and the requirements of marriage and cohabitation became less pertinent. In another example, the Supreme Court of California (2011) stated that the argument against same sex marriage followed a similar theme to a 1967 Supreme Court ruling on interracial marriage that had been illegal in several states and supported by the argument that it was detrimental to society and against the laws of nature. The Supreme Court of California (2011) stated that because marriage was no longer considered to be necessary for cohabitation or procreation, the argument that marriage should be reserved for heterosexual couples did not reflect the values of contemporary society. Bussey and Bandura stated that biological, evolutionary, and learned behavioral models of development fail to account for rapid role adaptation and therefore perpetuate rigid and polarizing behavior. Social cognitive theory was developed to account for the flexible adaptation of roles in order to facilitate the needs of both the individual and the larger social group.

Self-Efficacy

Self-efficacy is one of the main tenets of social cognitive theory (Bandura, 1994). The perception of self-efficacy is reflected in an optimistic self-belief that has a positive

functional influence. The self-efficacious individual believes that he or she holds the ability to perform under adversity and can meet difficult and unique challenges.

Perceived self-efficacy supports goal setting, how effort is exerted, generates persistence in facing obstacles, and the ability to recover after a setback (Luszczynska et al., 2005; Bandura, 1982; Bandura, 1994). It is an operant, positive, and resistant resource that is relevant to subsequent behavior and is considered valuable for the adaptation of behavior to new circumstances.

Building on social learning theory (Miller & Dollard, 1941; Rotter, 1954) and the concept that behavior is influenced by observing others and reinforced with rewards, Bandura (1977) focused on the cognitive awareness of the transactional nature that is associated with any given behavior. Each individual has the potential to cognitively appraise each situation and his or her corresponding behavior is moderated through contrasting inner values with the values that are perceived to be inherent to the social situation (Bandura, 1977). For example, discrimination due to race, gender, or sexual orientation may be widely accepted as being morally wrong, but within a specific culture this moral tenet may be disengaged by the more powerful persuasion of rewards, support, and the acceptance of the group (Bandura, 1977; Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001). For example, antigay feedback and positive rewards for fitting in with the heterosexual group may persuade the gay individual to act in ways that are contrary to his or her inner identity. On the other hand, the individual with a strong sense of self and a high level of self-efficacy may believe that he or she has the ability to

influence the culture of the group through raising awareness and promoting the acceptance of diversity.

After the rise of behavioral psychology peaked in the second half of the 20th century, personality psychology began to integrate with social psychology and the concept of the self emerged in the study of human development (Swann & Seyle, 2005). Nonetheless, compared to behaviorism that was centered on experimental evidence, the concept of the self was difficult to define through research (Swann, Chang-Schneider, & Larsen McClarty, 2007). Without a consistent body of evidence, the wave of interest in the value of the self-concept and self-esteem that arose in the 1980s began to be viewed with skepticism (Swann et al., 2007).

Kirkpatrick and Ellis (2001) proposed that self-esteem was a function of evolutionary natural selection that covered multiple domains including motivation, social interaction, aggression, reproduction, and parenting. The self-concept and self-esteem were built around social feedback and comparisons with others in the group. For example, success at attracting a potential mate creates the motivation to raise a family whereas rejection stifles the motivation to reproduce. Compared to social cognitive theory that viewed social interaction and the evaluation of self worth as a transactional process, the concepts of the self and self-esteem were more heavily weighed on external feedback. In social cognitive theory, Bandura (1994) focused on the concept of self-efficacy that relies on both internal and external cues. Self-esteem is largely dependent on environmental circumstances (Kirkpatrick & Ellis, 2001) whereas self-efficacy relies on a stable set of internal beliefs that develop in accordance with environmental feedback and

remain consistent regardless of sudden or unforeseen changes (Bandura, 1994; Luszczynska et al., 2005).

Because the concept of self-esteem is multidimensional, has not been clearly defined, and may lead to a variety of outcomes (e.g., high self-esteem can lead to dominance and narcissism), this study uses the concept of self-efficacy that represents a trait that is consistently related to positive prosocial behavior (Bandura et al., 2001; Kreuger, Vohns, & Baumeister, 2008). Moreover, social cognitive theory and self-efficacy have an adequate research base and are theoretically bound to earlier forms of social and behavioral psychology (McAlister, Perry, & Parcel, 2008). In contrast, the concept of self-esteem has a more global reference and lacks a strong basis in evidence (Reeve, 2009).

The results of studies on the influence and associations of self-esteem and HIV are mixed. Some studies have shown a correlation between low self-esteem and a higher risk for HIV. Preston et al. (2007) found that low self-esteem resulting from the experience of stigma in 414 MSM living in rural settings correlated significantly with higher sexual risk. On the other hand, De Santis, Colin, Provencio Vasquez, and McCain (2008) found that high self-esteem correlated with higher sexual risk in a group of 205 ethnically diverse (79% ethnic minorities), largely foreign born (69%), MSM in South Florida. These highly differing results on the influence of self-esteem on sexual risk between groups in different locations and cultures suggest that the influence of self-esteem may be culturally and environmentally interpreted and imply that more research is warranted.

Sheon and Crosby (2004) found that regardless of the acknowledged high incidence of HIV and exposure to counseling, gay men in the San Francisco Bay area tended to practice unsafe sex. In the group of 150 men, those who were seronegative tended not to disclose this information so as not to be rejected by seropositive sexual partners. On the other hand, those who were HIV seropositive tended toward disclose as a way to relieve the responsibility for unsafe sexual behavior. The conclusion was the behavioral norms adopted by the group may have a prevailing influence over individuals who want to belong (Sheon & Crosby, 2004; Zea et al., 2007). According to DiClemente et al. (2008), HIV and AIDS education had little influence over the high level of sexual risk behavior practiced by minority adolescents. For teenagers, low self-efficacy was associated with poor decision-making and condom use was neglected after education about the risks of transferring HIV through unprotected sex. DiClemente et al. stated that intervention programs that do not consider the adolescent's social and cultural context provide poor competition to the high media content of sex and violence that routinely targets this audience. Self-efficacy concerns inner beliefs that can be developed and maintained in parallel with the demands of the social group, and is more resilient compared to externally motivated self-esteem (Reeve, 2006). Nonetheless, only a few studies have been conducted on self-efficacy and HIV-related behavior (Ironson & Hayward, 2008).

Ironson et al. (2005) tested the results of a cognitive behavioral intervention designed to improve self-efficacy skills in 56 women living with AIDS. Ironson and colleagues developed a self-efficacy measure using the subscales of AIDS self-efficacy

and cognitive behavioral skills self-efficacy with a trial group of 319 HIV seropositive women. Over a period of three months, half of the sample was given a cognitive behavioral intervention, and the other half was given a dummy intervention. The results showed that increases in AIDS self-efficacy in the cognitive behavioral intervention group were significantly related to increases in CD4 cell counts and lowered viral load. Cognitive behavioral self-efficacy increases in the intervention group were significantly related to decreases in both viral load and levels of distress. Furthermore, in an earlier 2-year study with 23 HIV seropositive men, Ironson et al. (1994) found that low adherence to a cognitive behavioral stress management intervention combined with higher levels of distress and denial was significantly related to poorer immune system functioning and higher levels of HIV disease progression.

A survey by Mao, Van de Ven, and McCormick (2004) that included 201 White, and 199 Asian gay men in Sydney, Australia found that higher levels of self-efficacy in avoiding casual sex and a lower number of gay friends was associated with lowered sexual risk. Furthermore, the study found that the Asian men were more collectivist-oriented and the White men were more individualistic and the recommendation was for more research into how cultural factors influence sexual risk behavior. The studies of Sheon and Crosby (2004) and Mao, et al. showed that the influence of gay culture correlated with an increase in sexual risk behavior. On the other hand, association and identification with the group can also provide positive psychological benefits for minority individuals. In three studies with ethnic minority high school students, ethnic minority college students, and gay and lesbian adults, Ghavami, Fingerhut, Poplau, Grant, and

Wittig (2011) found that the understanding and exploration of personal minority identity acted as the basis for developing a positive outlook and built a sense of attachment to the group. The conclusion was that developing a strong sense of minority identity may provide positive psychological wellbeing for the minority individual. Moreover, the affirmation of a dual identity with ties to both the minority group and the prevailing social group may provide the most psychological benefit (Ghavami et al., 2011).

Negotiating dual cultures, however, may not always be easy and may involve considerable stress. For example, gay Latinos may confront issues of immigration, language difficulties, discrimination in the gay community, and lack of acceptance in the culture of origin (Diaz et al., 2004). Bandura (1986) stated that the self-efficacious individual is not threatened by social challenges and is able to cope with these demands whereas the inefficacious individual feels threatened and inept at coping and thus becomes avoidant of challenging social interactions. The demands of living in dual or multiple cultures may be more or less difficult depending on the differences between the cultures and the level of self-efficacy of the individual. Self-efficacy and prosocial behavior rely on positive social support and some groups may be more flexible in providing support than others (Ashton et al., 2005; Mimiaga, Skeer, Mayer, & Safren, 2008). The recent social and political debate over the issue of same sex marriage frames one of these differences where legislation can serve to facilitate or hinder the affirmation of dual cultures for sexual minority individuals. The self-efficacious individual may feel that he or she has the power to interact with the social dynamic to enact positive change that benefits both the minority individual and the larger group. In a mutual relationship,

social support is essential to building an enduring sense of self-efficacy and self-efficacy encourages the supportive environment through reciprocal acts of prosocial behavior (Bandura et al., 2001).

As self-efficacy develops during childhood, not having access to healthy gay role models may impede development for the sexual minority youth. Nonetheless, the processes of social cognition and self-efficacy can develop at any time throughout the lifespan (Bandura et al., 2001) highlighting the need for interventions where and whenever social disparities occur. Coleman and Ball (2009) studied a sample of 130 HIV seropositive middle aged African American men and found that AIDS education and religiosity correlated strongly with high self-efficacy and condom use. Understanding the unique and complex social and cultural interactions that are involved for high risk groups is essential for the design and development of socially and culturally specific interventions. Ironson and Hayward (2008) stated that the evidence for psychosocial interventions in HIV and AIDS related health behavior showed promise. However, research into these psychosocial factors and how they interact for people living with HIV and AIDS was limited and preliminary. Johnson et al. (2008) reviewed 44 studies that evaluated 58 HIV interventions with a total of 18,585 participants and found only 11 interventions that were community based. Furthermore, most of the interventions included a majority of White male participants. Finding that the interventions were most effective at lowering HIV transmission among White men, Johnson et al. recommended that more studies were needed on interventions for African American and Hispanic populations.

Self-Regulation and Sexual Behavior

The studies of Sheon and Crosby (2004) and Mao et al. (2004) included data that suggested an increase in sexual risk behavior in urban gay populations regardless of the knowledge of the high risk for HIV and AIDS. Individuals who want to feel that they belong may adopt the behavior of the group. This suggests that self-regulation and the regulation of sexual behavior may be influenced by the social and cultural context. In confirmation, Bandura et al. (2001) and Bussey and Bandura (1999) found that self-regulation and self-determinism were highly dependent on the contextual social setting. Although the terms self-regulation and self-determinism imply independence, these traits are developed with support and influence from the social group. Therefore, the modulation of subjective experiences with reference to the social setting is an essential mechanism for the development of self-regulated behavior (Bandura et al., 2001; Luszczynska et al., 2005).

The gay liberation movement arose during the civil rights struggles of the 1960s with a culture of overt sexual expression that peaked in the late 1970s (Black, 1986). The first cases of disease that became attributed to AIDS were reported in 1981, and HIV was detected as the underlying cause in 1984 (Sepkowitz, 2001). AIDS quickly reached epidemic proportions within the gay community and became integrated into the cultural identity of many gay men, especially in the larger cities. As a result, a subculture formed around the knowing and willing transmission of HIV (Black, 1986). For some men, the voluntary exposure to HIV relieved the anxiety of trying to escape something that seemed inescapable (Black, 1986; Sepkowitz, 2001).

In the mid 1990s the introduction of HAART significantly reduced HIV and AIDS related illness and death (Pezzotti et al., 2003). Knowing that successful treatments were available and the mortality rate had lowered, the younger generation of gay men who had not witnessed the early effects of the AIDS epidemic, and the older generation that was weary of living with the threat of AIDS, became more casual about unprotected sex (Sheon & Crosby, 2004). Additionally, the Internet gave rise to chat rooms and forums for HIV seropositive men wishing to have unprotected sex with other seropositive men and men wishing to become seropositive (Halkitis & Parsons, 2003). Some seropositive men may seek out other seropositive men so that awkward disclosure does not compromise the sexual experience (Sheon & Crosby, 2004). Some sexually active seronegative men, fearing that seroconversion is inevitable, may seek out seropositive partners and engage in unprotected sex in order to knowingly become infected with HIV (Halkitis & Parsons, 2003). The willing exposure to HIV may ameliorate the fear of inevitability and not knowing if or when seroconversion will occur. Moreover, for some men, engaging in unprotected sex objectifies masculine identity and sexual power (Black, 1986). Additionally, sexual prowess demonstrated via penetration may also be a cultural trait. For example, in Latino culture penetration is strongly associated with masculinity (Diaz et al., 2004).

Subgroups of men and women desiring to intentionally infect others or be infected by others creates serious ethical, legal, and health concerns (Halkitis & Parsons, 2003). Furthermore, intentionally infecting another person with HIV is a criminal offense in many locations. For example, a HIV seropositive individual in Australia was charged

with more than 120 offenses related to the deliberate transmission of this virus (Johnston, 2008). A HIV seropositive man working as a prostitute in the Seattle area was charged with reckless endangerment for agreeing to have unprotected sex with clients after telling them he was HIV seronegative (“HIV-positive man,” 2010). The legislation of sexually transmitted diseases raises many questions including how the potential for criminal prosecution may force underground behavior deeper underground. HIV seropositive individuals fearing prosecution may avoid seeking medical treatment and engage in denial and nondisclosure. The mandatory reporting of HIV and AIDS cases by name may deter individuals from being tested and seeking treatment, and may reinforce the culture of nondisclosure.

Similar influences that promote prosocial behavior including modeling, rewards, and punishment may also encourage subcultural behavior that runs counter to the interests of the larger group. Moreover, the complexities of human personality allow multiple layers of behavior to coexist that are not always concordant. Men that have sex with men and women (MSMW) who do not consider themselves to be gay or bisexual, and who do not disclose same sex activity, are more likely to have unprotected sex with multiple partners (Siegel, Schrimshaw, Lekas, & Parsons, 2008). The term “down low” (CDC, 2004, p. 1) emerged in the African American community to describe nondisclosing MSMW. Although this is not restricted to any one social or ethnic group, the phenomenon of clandestine sex with men and women is prevalent in the African American community (Siegel et al., 2008).

Self-regulation and the regulation of sexual behavior rely on the support and influences of the larger social group and in a reciprocal manner the traits and complexities of the group may be reflected in the individual (Bandura et al., 2001). Moreover, lower levels of self-efficacy and a strong identification with the group may result in the individual adopting the behaviors of the group while setting aside personal values that are not concordant with the group (Mao et al., 2004). When different values from different groups become contrasted, the individual may have difficulty in adapting self-regulated behavior. For example, the gay Latino may not be accepted within his culture of origin because of his sexuality, and he may not be accepted in the gay community because of language difficulties and racial discrimination (Diaz et al., 2004). Self-regulated behavior results from a balance between an internal sense of self-efficacy and consistent identification with the social group (Bandura et al., 2001; Luszczynska et al., 2005).

Disclosure

A subculture of limited and nondisclosure exists within Latino culture that is frequently associated with machismo, religiosity, close family ties, and lack of acceptance of homosexuality (Diaz et al., 2004). Perceived rejection from family and church may cause gay and bisexual Latinos to lead double lives keeping gay sexual relationships secret. Additionally, the importance of machismo in Latino culture makes the decision for gay men to come out very difficult because this is considered to be feminine trait (Zea, 2008). As a result, Latinos that have sex with men will sometimes have sex with women in order to present as being heterosexual. Furthermore, self-

identifying gay Latinos may only be out to selective friends and family and not to others. The decision to disclose can be very complex, with consideration given to how each recipient may react, and to all of the potential consequences. Moreover, coming out is generally not a one-time event contributing to the stress involved as the individual discloses in different places, times, and to different people (Zea et al., 2007). Every circumstance has its own set of consequences and each individual may react differently to the disclosure making reactions and consequences difficult to foresee or predict. Although the news that one is gay and HIV seropositive may be received more positively than expected, it is the perception of potentially negative consequences and not the actual consequences that generate the major barriers to disclosure (Zea et al., 2007). In a study with 76 HIV seropositive MSM, Serovich et al. (2006) found that 63% experienced no regret disclosing HIV status to friends and family. Compared with friends, experiences of regret were greater with immediate family, coworkers, and casual sex partners. Of the 1,397 disclosure recipients, only 4.2% reported experiences of regret.

The anticipation of negative consequences related to self-disclosure may perpetuate nondisclosure (Zea et al., 2007). On the other hand, when personal information is received with approval and positive feedback the process of disclosure is encouraged (Greene, Derlega, Yep, & Petronio, 2003). As more information is shared, relationships deepen and support increases. Disclosure can help to improve the perception of self-efficacy and can lead to more positive personal and professional interactions (Tardy, Dindia, & Hargie, 2006). Nonetheless, for many minority individuals, issues of

language, culture, stigma, and discrimination may inhibit self-disclosure, social support, and self-efficacy.

In a study with 301 HIV seropositive gay and bisexual Latinos, Zea, et al. (2005) found that the stress of withholding the disclosure of HIV seropositive status significantly correlated with the negative psychological symptoms of depression and anxiety. With some differences depending on the target (e.g., to friends, sexual partner, mother, or father), disclosure was significantly related to increased social support, lower levels of depression, and higher self-esteem. Gay Latino men tended to be selective about the target of self-disclosure and the study findings indicated that increased social support mediated the relationship between self-esteem and depression, and the disclosure of HIV seropositive status. In another study with 205 predominately foreign born Hispanic MSM, De Santis et al. (2008) found that low income, lower levels of education, and low levels of comfort with speaking English were associated with higher levels of depressive symptoms. Additionally, low income was associated with lower self-esteem. Foreign birth and a preference for speaking Spanish were both associated with higher risk sexual behavior. Furthermore, depressive symptoms and high self-esteem were both associated with higher sexual risk behavior. De Santis et al. and Zea et al. recommended that further research was required into the cultural influences surrounding HIV, and culturally specific mental health interventions in Hispanic populations.

Because AIDS is a syndrome with a wide range of symptoms, it was initially difficult to recognize and isolate as one disease (Sepkowitz, 2001). The disease of AIDS became recognized when the symptoms, disease progression, and the highest risk

populations had been identified. Amidst widespread stigma and discrimination, AIDS patients had little choice concerning disclosure because without successful treatments the symptoms including Kaposi's sarcoma spots on the skin, pneumocystis pneumonia, and bodily wasting, became evident (Pezzotti et al., 2003; Sepkowitz, 2001). In response, the disease progression model was developed to describe how AIDS patients were forced into disclosure and into seeking treatment because the symptoms of the disease progression became obvious (Pezzotti et al., 2003; Serovich, 2001). By the late 1990s successful medication treatments reduced the incidence of symptoms and disease progression and therefore it was up to the discretion of the individual whether or not to disclose his or her HIV seropositive status. The disease progression model was no longer appropriate and in response Serovich (2001) proposed the consequence theory to explain how the disclosure of HIV seropositive status was moderated by the perception of the potential consequences related to the disclosure (Serovich, 2001; Zea, et al., 2007).

The consequence theory of disclosure was based on the assumptions from social exchange theory (Thibaut & Kelley, 1959) that most individuals avoid high-cost personal interactions and relationships in preference for relationships and behaviors that provide the maximum amount of reward and benefit in exchange for the least amount of personal expenditure (Serovich, 2001). The consequence theory of HIV serostatus disclosure suggested that the relationship between disclosure and disease progression was moderated by the anticipation of the level of consequences that resulted from the disclosure. Disease progression and the accumulation of added stress resulted in the need to evaluate the consequences of disclosure. Therefore, individuals living with HIV are

more likely to disclose to friends, family, and sexual partners when the rewards for disclosing are assessed to outweigh the associated costs (Serovich, 2001).

Zea et al. (2007) tested the consequence theory using an interview-based survey with 301 HIV seropositive Latino men with supportive results. The survey measures were designed to gauge the disclosure of seropositive status to the target groups of close friends, family, and to casual sex partners. Items in the survey covered the perceived consequences of disclosure that included both barriers to disclosure, and reasons for disclosure, as well as peer behavioral norms, level of acculturation, gay identity and community involvement, and experiences of discrimination. The variable of length of time since the initial HIV seropositive diagnosis had been shown in other studies to predict disclosure and was included along with disease progression, age, income, and education level for control purposes (Zea et al., 2007). The results showed that the fear of negative consequences to disclosure was an important factor in the decision making process. The perception that self-disclosure would result in positive consequences assisted the decision to disclose, and the relationship to the recipient was influential. For example, 85% of the group disclosed to friends, followed by 71% to family, and casual sex partners were least likely to be informed with only around 20% of the group consistently revealing seropositive status.

From a standpoint of social support, the results of the Zea et al. (2007) study showing a high level of disclosure to friends and family were encouraging. On the other hand, due to HIV infection risk, the low level of disclosure to casual sex partners raised concern. Latinos who were more acculturated and connected with the gay community

were more likely to adopt openness about disclosure, especially with close friends (Zea et al., 2007). However, the practice of nondisclosure to casual sex partners that has become a norm within the gay community has also been adopted (Sheon & Crosby, 2004; Zea et al., 2007). Experiences of discrimination were included as barriers to disclosure, along with the fear of rejection in relationships, and concerns over the loss of employment and health insurance coverage (Zea et al., 2007). Individuals who perceived positive consequences that included receiving support and the encouragement to be more honest and intimate were more likely to disclose to all target groups.

Shacham, Small, Onen, Stamm, and Overton (2012) conducted a study in the Midwest of 809 HIV seropositive mostly African American men with a mean age of 41 and found that 97% of the sexually active members had reported HIV status to sex partners. The high self-reported rate of disclosure to sex partners was attributed to a need to be socially desirable. This finding was contrary to the results of studies of groups in coastal cities with large gay communities where nondisclosure was reported to be more socially desirable (Mao et al., 2004; Sheon & Crosby, 2004). The Shacham et al. study showed that 359 members (close to half) had disclosed to one or more family members and 474 (60%) had disclosed to at least one friend. Disclosure to family members occurred more often among participants who were unemployed and who experienced depressive symptoms indicating a link between disclosure and the need for support. Disclosure to friends occurred more frequently among the participants who were White, female, and among those who had completed higher levels of education. Overall, the

factors of gender, level of education, ethnicity, and the need for financial and psychological support influenced disclosure and the choice of the target for disclosure.

While adding support for the consequence theory of disclosure, the Zea et al. (2007) study found that the perception of how the target will react to disclosure was only one aspect of a more complex process. The disposition of the individual making the disclosure, the characteristics of the associated culture, the social group, identification with the behavior of the peer group, and identification with gay culture were all involved in the disclosure process. For example, individuals who identified with gay culture were more open to close friends and less to family, and were much less likely to disclose to casual sex partners. Individuals who perceived that it was common among the peer group to disclose HIV seropositive status were more likely to disclose to all of the target groups. Individual agency combines with the processes of cognition and perception in interaction with the social environment and the cultural context. For gay HIV seropositive Latinos, there was a complex dynamic between identification with peers, identification with the gay community, family traditions and culture, and the culture of the larger social group (Zea et al., 2007).

Bairan et al. (2007) collected data from 104 HIV seropositive adults in three groups consisting of MSM, high-risk heterosexuals, and substance users and found that disclosure depended mostly on the type of social relationship. Fear and stigma were also found to be significant contributing factors. A model of HIV disclosure was described that categorized social relationships as either sexual or nonsexual with disclosure depending on the level of intimacy in the relationship. In a review of the literature on

HIV serostatus disclosure among heterosexual adults, Mayfield Arnold, Rice, Flannery, and Rotheram-Borus (2008) found that disclosure varied among groups and reflected the personal identity of the individual. Disclosure was higher for women than for men, was higher for Latinos and Whites than for African Americans, and was higher for younger adults than for older adults. The suggestion was that disclosure could be viewed in the context of how it fits with the personal communication strategy rather than within the context of relationships. The individual who makes wide serostatus disclosure considers this to be central to his or her personal identity. The individual who does not want to make HIV status central to his or her identity may seek anonymous support, and others may be selective about disclosure based on contextual considerations (Mayfield Arnold et al., 2008).

Bird and Voisin (2010) proposed a model of disclosure that was primarily based on the wide association of stigma with sexuality and HIV. Because of this association, MSM may be more likely to seek out casual and anonymous sexual encounters where nondisclosure is common and the responsibility for sexual risk is left up to the individual. Bird, Fingerhut, and McKirnan, (2011) proposed that higher levels of culture-bound stigma created higher barriers to disclosure for African American men. In a study of 317 ethnically diverse HIV seropositive MSM (101 African American and 150 White), the rates of sexual risk behavior were similar for the White and the African American participants, and the rate of HIV status disclosure was significantly lower for the African American group.

In order to create a conceptual framework around the disclosure process, Chaudoir and Fisher (2010) developed the disclosure process model (DPM) that consists of the initial disclosure goals, the disclosure event, the mediating factors and outcomes, and the reciprocal response (Chaudoir, Fisher, & Simoni, 2011). A review of the existing disclosure models showed that these models dealt more with the disclosure event and not with the overall outcomes that followed disclosure (Chaudoir et al., 2011). Both positive and negative motivation, the approach or avoidance of disclosure goals, the serostatus of the disclosure recipient, relationship factors, some disease progression, and the influence of stigma were all shown to be factors involved in the disclosure process. Therefore, the DPM was developed in order to provide a more flexible framework for understanding the various contextual disclosure processes (Chaudoir et al., 2011).

Because disclosure is necessary for improved support and reduced HIV transmission risk (Serovich & Mosack, 2003), interventions that encourage disclosure have been recommended (Shacham et al., 2012; Zea et al., 2007). Since the disclosure process is heavily influenced by the traits and characteristics of the target group, Zea et al. (2007) recommended that intervention design take into consideration the nature of the disclosure target. In a pilot study of a disclosure intervention with 62 HIV seropositive participants, Serovich et al. (2011) found that disclosure events with casual sex partners increased for the group that received the intervention, however, increased safe sex behavior was not significantly related to the increased levels of disclosure. The study was impeded by a small number of participants with 34 assigned to the intervention and 28 to the control group. Furthermore, a short follow-up interval of 3 months did not allow

enough time for the complete disclosure process to occur. Serovich et al. found that most of the disclosure was reported to have occurred at the end of the follow-up period.

Therefore, the conclusion was made that more time was needed and further research was recommended. The studies of Zea et al. and Serovich et al. concluded that disclosure can take many different forms, have different types of delivery, and the recipient targets can vary considerably. Because of the social and cultural complexities that surround the disclosure process, interventions that encourage disclosure should be contextually applicable (Serovich et al., 2011).

A national online survey of 2,865 MSM undertaken by Grov, Hirshfield, Remien, Humberstone, and Chiasson (2011) between 2004 and 2005 found that 62% of the participants had met their last sexual partner via the Internet. Among the 1,550 participants that reported having anal sex, half did not use condoms. A multivariate analysis showed that the venue where the men met was not significantly associated with unprotected sex, however, there was a significant association between the venue and the level of disclosure of HIV status. The level of disclosure of HIV status was highest among men who met their most recent partner online, and disclosure was lowest among men who met outdoors, in a park, or in a public place. The authors concluded that there were social and behavioral connections between the venue and the corresponding sexual encounter. HIV education, treatment, and prevention initiatives may be more successful when the relationship between the social environment and the corresponding sexual behavior is taken into account.

While disclosure is generally a personal decision it may sometimes be forced. For example, federal and state laws mandate that sexual partners are informed when they have had contact with an individual who is infected with a sexually transmitted disease (CDC, 2013). All states require the reporting of infectious disease statistics and HIV and AIDS cases are reported by name to local government health authorities and to the CDC. Government reporting, however, is strictly confidential (CDC, 2013) and the HIV seropositive individual may choose to disclose personal health information to some sexual partners, to selected family members and friends, and not to others (Zea et al., 2007). Furthermore, there are those who engage in casual sex without knowing the identity or contact information of their sexual partners, and others are unaware that they are seropositive for HIV (CDC, 2010b). Complicating the issue, nondisclosing sex partners are less likely to use condoms and are more likely to have multiple partners (Sullivan, 2005).

Because HIV infection is closely associated with being gay, men that do not want anyone to know they have sex with men may not reveal that they are HIV seropositive (Siegel et al., 2008; Zea et al., 2005). Some men may avoid the association between HIV and gay sexual orientation by not being tested for HIV. Whether gay or straight, HIV seropositive individuals are subject to stigma, discrimination, and rejection that may act to reduce the motivation to disclose (Radcliffe et al., 2010; Rintamaki et al., 2007; Sullivan, 2005). Individuals who communicate more openly to sex partners may tend to use more protection indicating a link between disclosure and self-efficacy in the form of higher adherence to safe sex practices (Sullivan, 2005).

Mutchler et al. (2008) stated that very little research has been conducted on the cultural correlates of the likelihood of unprotected sex in MSMW. In a study with 150 MSMW divided equally among Latinos, African Americans, and Whites, Mutchler et al. found that for African American men a low identification with gay sexual orientation and low self-efficacy for disclosure of HIV status with women correlated with a high likelihood of nondisclosure and unprotected sex with women. Among Latinos, negative attitudes about condoms and low identification with gay sexual orientation correlated with a high likelihood of nondisclosure and unprotected sex with women. The participants who identified more with gay sexual orientation, who had negative attitudes about condoms, and low self-efficacy for disclosure to women were more likely not to disclose HIV status and have unprotected sex with male partners. For MSMW, the fear of rejection and negative consequences from disclosure to female partners may increase nondisclosure and unsafe sexual behavior.

Mutchler et al. (2008) suggested that community-level culturally specific interventions were needed to help generate awareness about bisexuality and HIV and to lower stigma around HIV and sexual orientation. Increasing comfort in communication with female partners about sexuality, condoms, and HIV for Latino and African American MSMW was recommended. Furthermore, addressing norms for HIV status disclosure and condom use between male partners was recommended, especially for gay identified MSMW. According to Simoni and Pantalone (2004), White gay men have a lower perception of negative consequences associated with coming out and are more

likely to disclose than Latinos. Additionally, the more Latinos become acculturated, the more likely they are to disclose gay or bisexual orientation.

Shame and embarrassment is associated with the disclosure of HIV seropositive status for Asians, as well as many Latinos (Yoshioka & Schustack, 2001; Zea, 2008). A lack of understanding by the family that is largely due to limited access to HIV and AIDS educational materials and information not being available in some Asian languages can create barriers to disclosure (Yoshioka & Schustack, 2001). Additionally, a lack of education and understanding of HIV and AIDS can result in misconceptions and inappropriate reactions to the disclosure that a family member is HIV seropositive. In an individualist culture, shame may become a prevailing emotion for the individual but not necessarily for the entire family. However, in collectivist cultures such as Asian and Latino, the family shares the individual's sense of shame thus making the decision to disclose a matter that incorporates the emotions of the entire family as well as that of the individual (Li et al., 2007). This makes the decision to disclose very difficult because disclosure is a cultural imperative and gaining family support is essential. Nonetheless, the idea of bringing shame to the family can severely moderate the choice to disclose (Li et al., 2007). Moreover, Diaz et al. (2004) stated that the contemplation of familial rejection and shame among gay Latinos was frequently associated with increased drug and alcohol use that perpetuated self-destructive behavior that included unsafe sex.

The obligation of taking care of others may also moderate self-disclosure for the HIV seropositive individual. For example, elderly Latinos often turn to family for advice and support before receiving professional care (Mills & Henrietta, 2001). Many do not

have health insurance or substantial incomes placing the burden of care on the immediate family. Therefore, when the child is expected to remit money or provide care for family members, he or she may not want to raise concern about his or her personal health issues (Li et al., 2007; Zea et al., 2007). Additionally, concern may arise about how the disclosure of an HIV seropositive diagnosis will affect levels of support and intimacy. The stress associated with the HIV seropositive test result may be increased by the perception that this news will have a negative impact on relationships with friends, lovers, and family members (Sullivan, 2005; Zea et al., 2007).

Because of cultural differences and the fear of negative consequences, some individuals may self-disclose and use support from social circles as a means of coping more than others (Serovich et al., 2006; Temoshok et al., 2008). Ironson and Hayward (2008) suggested that the mixed results that have been found on the effects of social support and HIV may be due to the complex social and cultural factors that are associated with sexual and racial minority status. Social support is centered in the interaction between the individual and the group and is contingent on the many different characteristics and qualities of the individual and the group (Tardy et al., 2006). Ethnicity, race, culture, class, education, personality, and socioeconomics may all play roles in how and how much the individual discloses personal information, and in how it is received and responded to (Diaz, et al., 2004; Tardy et al., 2006; Zea et al., 2007).

Diaz et al. (2004) stated that the HIV seropositive individual may receive healthcare services whilst keeping his or her sexual orientation and HIV status secret from some or all friends and family members. Because HIV is a chronic illness, Shacham

et al. (2012) recommended that further research was required into the development of interventions that facilitate the timely disclosure of HIV seropositive status. According to the CDC (1992), medication was not recommended until the immune system began to show signs of compromise (e.g., lowered CD4 cells). However, intervention with HAART that reduces plasma viral load can also lower the risk of viral transmission and potentially reduce the number of new HIV cases (CDC, 2009b). Therefore, more recent CDC (2009b) recommendations are for earlier interventions with antiviral medications. Moreover, as medicines are reducing symptoms and increasing longevity for individuals living with HIV, health outcomes continue to be measurably improved with the presence of a supportive social network (Burgoyne, 2005). In a study of 373 psychiatric outpatients at an urban HIV clinic, Strachan, Bennett, Russo, and Roy-Byrne (2007) found that compared to people who did not disclose, individuals who were more open about their sexual orientation and HIV status were more likely to receive support and maintained a more robust immune system over time as measured by increased CD4 cell counts. Since HIV patients perceive stigma and discrimination in general, and within healthcare settings (Radcliffe et al., 2010; Rintamaki et al., 2007), these issues ought to be addressed if disclosure is to flow more freely, support is to be increased, and self-efficacious behavior is to be raised.

The disclosure of personal information can yield both positive and negative consequences (Zea et al., 2007). Disclosing the existence of a serious illness can help gain support and assistance. It may also result in losing employment and health insurance (Serovich, 2001). Employees may fear workplace discrimination if they disclose an

illness or disability (Serovich, 2001). Furthermore, while disability laws offer some protection for employees against discrimination in the workplace, there are only limited federal laws banning discrimination based on sexual orientation or gender identity expression (Human Rights Campaign, 2014; U.S. Equal Employment Opportunity Commission, 2009). Because there are many factors interacting in the process of self-disclosure, how, when, and to whom personal information is disclosed can have resounding consequences for both the discloser and the recipient.

Social Support

Testing seropositive for HIV signifies a lifestyle transition involving serious long-term health and interpersonal demands (Swendeman, Ingram, & Rotheram-Borus, 2009). Gathering social support, attending to personal wellness, and receiving professional healthcare services can make a difference to the quality and longevity of life for individuals living with HIV (Pereira & Penedo, 2005). However, in a review of the literature on the positive influence of optimistic psychosocial factors in slowing HIV disease progression, Ironson and Hayward (2008) found mixed results for social support. Social support has been one of the most widely studied predictors of health in HIV and other chronic illnesses. Yet when compared to other illnesses including cardiovascular disease, cancer, infectious disease, and the effects of aging where social support has shown to be a consistently positive influence, the results for HIV have not been as conclusive (Ironson & Hayward 2008). The reasons behind the mixed evidence for social support are complex and varied and the influence of stigma is a major factor.

Zea et al. (2007) found that social support was related to both disclosure and to the amount of time the individual had been seropositive for HIV. The seropositive test result may be accompanied by trauma and emotion that requires time to process. Therefore, the number of members in the social circle that receive disclosure may increase over time as the individual becomes more accustomed to the diagnosis. A pattern of change becomes evident from pre-infection sexual behavior, to the acceptance of the HIV seropositive diagnosis, to adopting a coping strategy that includes disclosure, and to social support that increases over time (Reilly et al., 2010; Zea et al., 2007).

A 12 month study with 65 men and women living with HIV and AIDS by Ashton et al. (2005) found that compared to active coping strategies involving emotional expression, social support was more effective at mediating HIV symptoms over the long term. Emotional expression was less effective when it was not accompanied by social support. In a study of 61 HIV seropositive women, Eisenberger, Kemeny, and Wyatt, (2003) found that compared to emotional inhibition, emotional expression within the supportive environment was associated with higher CD4 cell levels. Additionally, Belanoff et al. (2005) found that supportive expressive group therapy was related to increased CD4 cell counts and lower HIV viral load in a group of 59 HIV seropositive adults. Solano et al. (2002) studied 200 HIV seropositive asymptomatic men and women and found that in participants with a baseline of between 200 and 499 CD4 cells per cubic millimeter (that was the CDC, 1992 recommendation for an AIDS diagnosis), lack of emotional expression and a decreased recognition of personal needs and feelings was related to hastened disease progression. Emotional expression did not correlate

significantly with disease progression in the participants with healthier immunity indicated by CD4 cells greater than 500 per cubic millimeter. The indication was that the disease context was related to the psychological coping strategy.

In a study of 82 HIV seropositive gay men over 7.5 years, Lesserman et al. (2000) found that the risk of developing symptoms increased as support satisfaction decreased, as stressors increased, when denial was used as a coping strategy, and when serum cortisol levels increased. Further investigation into how this effect may influence the treatment approach was recommended. A study of 96 HIV seropositive gay men over 9 years by Lesserman et al. (2002) found that a higher cumulative average for stressful life events, higher levels of depressive symptoms, and a lower cumulative average for social support predicted the faster progression of clinical AIDS. Zea et al. (2005) found that among 301 HIV seropositive gay and bisexual Latinos, disclosure was related to higher quality social support, higher self-esteem, and lower levels of depression. Moreover, Ashton et al. (2005) found that when the level of social support was satisfying for the individual, other forms of coping became less significant in reducing HIV related health issues. The conclusion was that social support can help buffer against the negative effects of HIV and AIDS and further research into the pathways that mediate this effect was recommended.

Research has shown that social support is associated with lower disease progression and lower negative psychological symptoms in individuals living with HIV (Pereira, & Penedo, 2005; Zea et al., 2005). However, little attention has been paid to the difference between perceived and actual social support. McDowell and Serovich (2007)

stated that the perception of support may be more influential on health outcomes compared to the level of actual support. In a study that included 125 women and 232 men with HIV or AIDS, the perception of social support significantly predicted better mental health compared to actual social support that showed minimal effect. The women in the study were mostly African American (68%), the gay men were mostly White (68%), and the bisexual and straight participants were mostly African American (74.2%). The results suggested that there were no significant differences between the groups on the amount of perceived social support that was received. However, the results indicated that there were significant differences between the groups on the amount of perceived social support that was received from friends compared to family members. Gay men perceived receiving greater social support from friends compared to straight and bisexual men. Women perceived receiving greater social support from family than gay men. Additionally, the overall level of actual support did not vary significantly between the groups. However, levels of actual support from family members were significantly different between gay men, straight and bisexual men, and women. Gay men reported lower levels of actual support from family compared to straight and bisexual men, and women. There were no significant differences in actual social support from friends. Serovich, Grafsky, and Craft (2011) stated that familial rejection of sexual orientation and HIV serostatus may cause many gay men to seek support from a network of friends and rely less on support from family. Therefore, the difference between the influences of perceived versus actual support on health outcomes may be significant in creating treatment interventions for

individuals living with HIV, although research on this topic has been minimal (McDowell & Serovich 2007).

The emotional suppression that comes with keeping sexual orientation secret has been attributed to poorer health outcomes in gay men. A study with 273 participants by Wald, Dowling, and Temoshok (2006) found that coping via shame and repression with an emphasis on concealing HIV seropositive status was associated with lower CD4 cell counts. Furthermore, Ullrich, Lutgendorf, and Stapleton (2003) studied a group of 73 HIV seropositive men and found that the concealment of gay sexual orientation was associated with lower CD4 cell counts, increased depressive symptoms, higher social constraints, and less social support. Moreover, the association between the concealment of sexual orientation and CD4 cell counts varied according to level of social support. When compared to those with lower concealment, the participants who experienced higher levels of social support combined with greater levels of concealment had lower CD4 cell counts. Additionally, the concealment of sexual orientation was not related to CD4 cell counts among those participants who reported low social support. Therefore, the benefits of being open about sexual orientation may be most effective in the presence of quality social support.

How social support is engaged and used is also influenced by personality traits. The extrovert may be sensitive to situations where there is the perception of rejection however the rewards of social acceptance may seem to be worth the effort of social interaction (Reeve, 2009). The introvert may avoid social interaction due to feelings of negative arousal or skepticism surrounding the depth or sincerity of social acceptance. In

both cases social acceptance is related to an external locus of control. The individual who is fearful of rejection yet discloses to the social circle may feel that he or she has given up an internal locus of control. Simoni and Ng (2002) studied a group of 230 mostly poor African American and Hispanic women living with HIV who had reported a history of physical and sexual abuse. Early experiences of trauma correlated with later trauma and all forms of trauma were significantly associated with the present perception of health. The subscales of *powerful others* and *internal control* from the multidimensional health locus of control scales (Wallston, 2004) independently predicted the perception of health (Simoni & Ng, 2002). The recommendation was for the integration of personal history and the perception of control over physical health in the treatment approach for women living with HIV.

In a national sample of 3,670 individuals living with HIV, Mosack et al. (2009) found that individuals were likely to have different experiences with HIV based on the sociocultural associations with sexual identity. For example, straight men reported fewer symptoms compared to bisexual or gay men, and straight women reported fewer symptoms than bisexual women. Reports of symptom intrusiveness were higher for straight and bisexual women compared to straight or gay men. Additionally, Mosack et al. found that the measures of cognitive depression from the cognitive subscale of the Beck depression inventory (Beck & Steer, 1993) and coping self-efficacy (Chesney, Folkman, & Chambers, 1996) independently explained symptom intrusiveness and the report of symptoms for straight, gay, and bisexual men. Cognitive depression and coping self-efficacy explained symptom intrusiveness among straight women. Cognitive

depression contributed significantly to the number of reported symptoms for straight and bisexual women, and to symptom intrusiveness for lesbian and bisexual women.

Furthermore, statistically significant differences were found among the groups on the measure of social support. However, the degree of difference may not have had clinical significance. Compared to cognitive depression and coping self-efficacy, social support did not independently explain the reports of symptoms or symptom intrusiveness.

Mosack et al. stated that although social support is important in disease management and quality of life, subjective health status might be more adequately gauged using the measures of cognitive depression, coping self-efficacy, and the reporting of symptom intrusiveness.

Active versus passive coping styles have a positive influence over immune system functioning. Passive coping strategies have correlated significantly with lowered white blood cell counts including T lymphocytes that are crucial for immune defense (Lesserman et al., 2000). Temoshok et al. (2008) found that coping with HIV involved the interaction of multiple systems that include cognitive appraisal, emotional styles, active and passive patterns of behavior, and physiology (e.g., autonomic reactivity and recovery). Coping styles that include both problem and emotion-focused coping were correlated with a more robust immune system and slower progression of HIV symptoms (Temoshok et al., 2008). Ironson and Hayward (2008) found that active coping together with spirituality and an optimistic disposition were some of the most effective traits associated with slowing HIV disease progression. A review by Goforth et al. (2009) found that the stress of bereavement combined with poor coping abilities negatively

impacted immune system functioning in gay men who had lost a partner. However, bereavement did not appear to be associated with the progression of HIV symptoms when it was not associated with negative beliefs and expectations and a poor coping style.

Reilly et al. (2010) conducted one of the few long-term studies that followed a group of 120 ethnically diverse HIV seropositive men and women over 6 years. They found significant changes in the sociocultural factors that were associated with unsafe sexual practices occurring over time. Initially, factors including age, lack of education, unstable relationships, and being a Hispanic or African American MSM were associated with unsafe sexual practices. As social support increased over time, support became a significant moderator of unsafe sex and countered these other factors (Reilly et al., 2010). However, social support may not be consistent and may vary depending on the social context. The studies of Sheon and Crosby (2004) and Mao et al. (2004) showed that identification with urban gay culture and a belief in the protective power of HIV medication correlated with increased levels of casual and unprotected sex. Moreover, Holmes and Pace (2002) conducted a survey with 295 participants showing that compared to those who were pessimistic about the long-term HIV prognosis, those who were more optimistic were less compliant with medication and more likely to engage in unprotected sex. Additionally, while there is a culture of HIV seropositive individuals seeking to have sex with other seropositive partners in order to avoid awkward disclosure and lower transmission risk, Piantadosi, Chohan, Chohan, McClelland, and Overbaugh (2007) found that chronic HIV-1 infection may not provide immunity against re-infection. HIV seropositive individuals may experience super-infection with other strains

of HIV and exposure to other types of sexually transmitted disease as a result of unprotected sex with other HIV seropositive individuals.

Stigma

There is no cure for AIDS and initially the broad range of symptoms and unknown etiology baffled doctors who were not able find successful treatments (Klosinski, 2013; Sepkowitz, 2001). The AIDS diagnosis was considered to be a death sentence and with little guiding scientific understanding fear and emotion influenced common perception (Black, 1986; Klosinski, 2013; Sepkowitz, 2001). Gay men, sex workers, intravenous drug users, and Haitian immigrants were most frequently associated with HIV transmission (Klosinski, 2013; Sepkowitz, 2001). Many people believed that HIV could be contracted through casual contact (Klosinski, 2013; Sepkowitz, 2001). HIV and AIDS patients and their families perceived overt social discrimination (Bogart, et al., 2008) and discrimination was commonly perceived from healthcare workers (Rintamaki et al., 2007). President Reagan reduced funding for healthcare and the response to AIDS was slow (White, 2004). The sociopolitical progress that ensued the civil rights era was lagging for sexual minorities and legislation that had been introduced to reduce discrimination and provide equality for women and racial minority groups did not extend to sexual minorities (Black, 1986; National Gay and Lesbian Taskforce, 2010). The contemporary social and political debate over same sex marriage, and limited legal protection against discrimination at a federal level exemplifies how civil rights continue to lag for sexual minorities (Human Rights Campaign, 2014).

Because being gay is associated with HIV and AIDS, and other social issues including marriage and adoption, the gay youth may feel obligated to protect his or her family from these concerns by not disclosing sexual orientation (Li et al., 2007; Zea et al., 2007). Parents may feel concerned that if a child is gay he or she may be exposed to discrimination and the risk of HIV infection. The perceived disappointment over having a child that is not married and not having grandchildren are other common reasons for nondisclosure to family (Li et al., 2007; Zea et al., 2007). In a study of 40 young African American MSM, Radcliffe et al. (2010) found that 90% experienced stigma related to being a sexual minority, 88% reported HIV related stigma, and 78% reported stigma as a result of both of these factors. In a study of 414 MSM living in rural settings, Preston et al. (2007) found that stigma perceived from the community, family, and healthcare workers correlated significantly with low self-esteem and higher sexual risk. Stigma experienced within a close community can become internalized and perpetuate low self-esteem. Conversely, Preston et al. found that high self-esteem correlated with lower levels of sexual risk. Therefore, perceived stigma surrounding HIV and AIDS may contribute to behavior that increases the risk for HIV and AIDS. For example, many men, especially older and minority men are reluctant to reveal gay sexual orientation to their personal physician and therefore may not be tested for HIV (Lite, 2008). Furthermore, Rintamaki et al. (2007) studied 50 male military veterans with HIV and found that many had become sensitized to how they were treated by healthcare workers. There was a common perception of stigma and discriminatory bias within the healthcare setting.

Foster and Gaskins (2009) studied 24 African Americans over the age of 50 living in the South and found that most of the stigma that was experienced was related to internalized shame associated with HIV and AIDS. The study participants reported little or no experiences of direct stigma, however, the experience of internalized shame was moderated through nondisclosure, selective disclosure, and through receiving treatment at centers that were distanced away from the immediate community. Foster and Gaskins recommended improved social support strategies for this age group. Grov, Golub, Parsons, Brennan, and Karplack (2010) studied 914 HIV seropositive men and women over the age of 50 and found that 39.1% showed symptoms of major depression. Loneliness and stigma related to HIV emerged as significant independent predictors of the symptoms of major depression. In an analysis of study data from 50 individuals with HIV, and 50 individuals without HIV, Vance (2006) found that the HIV seropositive group reported more experiences of negative affect. The factors of HIV-related stigma, older age, and loneliness were associated with the experience of negative affect. Furthermore, while an optimistic disposition, an active coping strategy, and spirituality have been attributed to slowing disease progression (Ironson & Hayward, 2008), internalized stigma may inhibit individuals from reaching out for the social support that may be required to encourage these traits.

Low-income families often rely on informal care provided by relatives who may also suffer physically and mentally from the demands of providing long-term AIDS care (Mitchell & Knowlton, 2009). Social support is a necessary element for the caregiver as well as the patient and the stigma associated with HIV and AIDS may prevent the

caregiver from seeking support. A study by Bogart et al. (2008) found that members from all of the 33 families interviewed experienced HIV-related stigma, almost all of the families were fearful of experiencing discrimination, and almost 80% of the families had experienced discrimination. In a study of 145 men and women living with HIV, stigma was associated with many of the factors involved in the choice not to disclose HIV seropositive status including; "...self-blame, fear of rejection, communication difficulties and a desire to protect the other person" (Derlega, Elwood, Greene, Serovich, & Winstead, 2002, p. 415). Conversely, stigma did not factor into any of the reasons that may promote open disclosure such as seeking support or a sense of obligation (Derlega et al., 2002).

Not wanting to place a burden of stigma or financial strain on family members, the newly diagnosed individual may decide to seek help elsewhere, or not at all. When there is a strong identification with the gay community, close friends may be told before family (Zea et al., 2007). Alternately, the perception of stigma in the community may reduce disclosure to within the immediate family (Derlega et al., 2002) and then only to selected family members. For example, Latinos may feel compelled to disclose personal information more with their mother than their father (Zea et al., 2005). Logie and Gadalla (2009) reviewed 24 studies of people living with HIV and found that high levels of stigma were consistently associated with significant decreases in social support, poorer physical and mental health, the advance of age, and lower income. Moreover, Logie and Gadalla found the significance of these correlations to be of medium size and recognizable to the individual in daily life. Because stigma can take many different forms

and manifest in many different ways, the recommendation was for the development of a more comprehensive range of HIV-related stigma scales. The integration of HIV stigma-related interventions and social support programs into the treatment approach was also recommended.

Although Logie and Gadalla (2009) found that stigma had a wide influence on a range of social, demographic, physical, and health factors, stigma may not always be direct or obvious and may become internalized for many minority individuals (Foster & Gaskins, 2009; Preston et al., 2007). Capodilupo and Sue (2012) described the concept of microaggressions that was first introduced by Pierce, Carew, Pierce-Gonzalez, and Willis (1978) to represent a subtle form of racism and discrimination. Microaggressions include speech mannerisms, facial expressions, and other forms of subtle behavior that communicate racism and discrimination in ways that are less overt compared to historic forms of racism and discrimination that were more obvious and identifiable. Examples of microaggressions include racial profiling by the police, the excessive surveillance of Black people while shopping, delayed or substandard service in shops and restaurants, being asked where one was born, being complimented on having good English, and being assigned low value tasks in the workplace (Capodilupo & Sue, 2012; Constantine, Smith, Redington, & Owens, 2008). Because microaggressions are common and integrated into normal social behavior, the aggressor may not be aware that his or her behavior is discriminatory, and the recipient may have difficulty recognizing the exact nature of the behavior. Due to the subtle nature of microaggressions, the recipient may feel that it was his or her fault or something that was imagined, thus making the problem difficult to openly address (Capodilupo & Sue, 2012). The stress of microaggressions on minority

individuals is cumulative, persistent, and may have significant long-term psychological and physical health consequences (Capodilupo & Sue, 2012).

In a review of 23 articles concerning HIV stigma measures, Earnshaw and Chaudior (2009) found that at an individual level there was a lack of clarity in the conceptualization and measurement of HIV stigma. The conclusion was that without an existing framework designed to adequately conceptualize and measure HIV stigma, HIV prevention and treatment efforts would continue to be significantly hindered. Because stigma influences different groups in different ways over time, the recommendation was that the emphasis for stigma research be guided by three questions: who is affected, how are they affected, and what are the outcomes of HIV stigma? For the individual living with HIV, stigma may hinder transmission reduction and interfere with treatment. Due to stereotypes surrounding HIV and AIDS, HIV seronegative individuals who feel that they do not fit the stereotype may believe that they are at lower risk and therefore engage in higher risk sexual practices and have lower HIV testing behavior. The HIV seronegative individual who holds prejudice around HIV may engage in negative emotional and avoidant behavior towards people living with HIV. Stigma-related discrimination may also be evident in the form of outward behavior toward people living with HIV. Earnshaw and Chaudior described the need for a conceptual framework that explains the formulation and operation of stigma and proposed a model that described how stereotyping, prejudice, and discrimination intersect in the development and maintenance of stigma. Because of the potential for different stigma-related influences and outcomes, it was deemed necessary to differentiate between these functionally similar factors.

The Effects of Stress on Health and Immunity

Environmental and emotional stress can have a direct impact on physical health through various physiological systems and pathways (Jacobs, 2001). Cannon (1963) identified the hypothalamic-pituitary-adrenal axis (HPA) as the self-regulating interaction between environmental stimuli and the nervous system. Sensory information from the environment passes through the limbic system and subsequent physiological reactions are modulated via the stimulation of hormones such as cortisol and norepinephrine (Jacobs, 2001). The amygdala in the limbic system has specifically differentiated nuclei that are dedicated to learned emotional responses (Calandreau, Desmedt, Decorte, & Jaffard, 2005). Due to this biological basis, learned responses can become integrated into normal behavior and the brain can become conditioned to react to both contextual and discrete stimuli. The HPA activates during stress by modulating hormone levels that return to normal during periods of relaxation. Individuals who experience prolonged and chronic stress may suffer from excessive HPA activation leading to health issues related to the central and peripheral nervous systems and the immune system (Jacobs, 2001). In an examination of the evidence, Jacobs (2001) found that stress has been shown to increase heart rate and blood pressure and lower blood flow to the heart. Stress, particularly related to job strain, lack of social support, and the trait of hostility, has been associated with hypertension, heart disease, and death. Stress has also been associated with headaches, back pain, gastrointestinal disorders, insomnia, anxiety, and depression. Furthermore, stress has a role in autoimmune disease and has been shown to cause

immunosuppression that could be detrimental to health in the individual with compromised immunity due to HIV (Jacobs, 2001).

The interaction of environmental and physiological stressors associated with HIV is complex. HIV is associated with social stigma and discrimination that may cause both acute and chronic stress (Sue & Sue, 2012). Stress-related hormones shape and restrain the immune response, viral infection engages the immune system, and HIV impairs immunity (Kumar et al., 2002). Cole et al. (2001) stated that the presence of neurotransmitters *in vitro* accelerated HIV replication. In a study of 21 HIV seropositive men aged from 25 to 54 with median CD4 cell levels of 449 and a median plasma viral load of 46,717, Cole et al. found that after taking HAART, participants with low autonomic nervous system (ANS) activity showed a better response to the medication than the participants with high ANS activity. The low ANS activity individuals showed a median decline in plasma viral load of more than 40-fold compared to less than 10-fold among participants showing high ANS activity. The low ANS activity individuals showed a median increase in CD4 cell levels from 396 cells per cubic mm to 551 after HAART. In contrast, the individuals with high ANS activity showed no significant increase in CD4 cell levels. Furthermore, the ANS neurotransmitter norepinephrine enhanced the replication of HIV-1 *in vitro* suggesting that neural activity may directly promote residual viral replication (Cole et al., 2001).

Petitto et al. (2000) studied a group of 94 HIV seropositive men and found that high cortisol levels in combination with severe life stress significantly correlated with the modulation of immune system parameters. Lesserman et al. (2002) studied 96 HIV

seropositive men over 9 years and found that elevated serum cortisol predicted the progression of clinical AIDS. Walburn, Vedhara, Hankins, Rixon, and Weinman (2009) stated that the impact of stress has been shown to have a negative effect on the healing process and the most evident impact occurs through the effects of stress on cellular immunity. Cellular immunity plays a large role in the regulation of wound healing through the production and regulation of pro-inflammatory and anti-inflammatory cytokines that may be compromised due to the interaction of stress on the neuroendocrine system (Walburn et al. 2009).

Gruenwald, Kemeny, Aziz, and Fahey (2004) posited that situations that threaten the social self gave rise to feelings of shame, lowered social self-esteem, and resulted in increased levels of cortisol. The premise was tested with 81 participants who were randomly assigned to perform stressful speech and mental arithmetic tasks. Half of the participants performed the tasks in a situation of social evaluation and half had no social evaluation. The participants who performed in the situation of social evaluation demonstrated lower social self-esteem and experienced higher feelings of shame compared to the group that had no social evaluation. Levels of salivary cortisol were increased for the participants in the social evaluation group and cortisol increases were greater for those who experienced greater levels of shame and lower levels of social self-esteem. Dickerson, Mycek, and Zaldavar (2008) tested 89 undergraduate students who were asked to give a speech to either an evaluative audience, to an inattentive associate, or alone in a room. The results showed that the students who presented under the threat of social evaluation had significantly increased cortisol responses compared to the students

that did not present in the evaluative condition. Furthermore, the students in the social-evaluative group who reported greater post-task levels of cognitive and emotional self-consciousness demonstrated the highest cortisol increases. Dickerson, Gruenwald, and Kemeny (2004) focused on the emotional response of shame to threats against the social self in a series of studies that have shown that acute threats to the social self and the experience of shame were related to increased proinflammatory cytokine activity and levels of cortisol. Moreover, persistent, chronic threats to the social self and experiences of cognitive and emotional shame have predicted immunological and disease-related health outcomes for individuals with HIV (Dickerson et al., 2004).

Lazarus and Folkman (1984) refined the concept of the stress response to be more than a function of the ANS by incorporating the concept of individual cognition. The coping strategy may be influenced through the cognitive appraisal of each particular situation. By determining the nature of the threat and appraising the available resources, the individual is able to make a cognitive decision on the best type of coping strategy for each situation. McEwen and Stellar (1993) conceptualized allostasis to define coping as the ability to maintain stability by engaging the ANS, the HPA axis, and the immune, metabolic, and cardiovascular systems in response to both internal and external stressors. Temoshok et al. (2008) described coping with HIV-related immune function and disease progression in terms of a construct of multiple systems that encompass emotion, cognition, behavior, the social environment, the immune, endocrine, and cardiovascular systems adapting to changing internal and external conditions, including stressors, to maintain homeostasis. In a review of the evidence, Lesserman (2000) found that the

combination of stressful events, depression, lack of social support, and the use of denial as a method of coping predicted the progression of HIV.

Early in the AIDS epidemic, Solomon and Temoshok (1987) proposed a psychoneuroimmunologic (PNI) approach to the disease progression of HIV. In a panel report from a diverse group of scientists, Kopnisky, Stoff, and Rausch (2004) found that the joint consensus was that psychological status mediated via biological systems played an important role in mediating HIV disease progression. This was particularly true for subgroups of vulnerable patients such as minorities and individuals with low income. Kopnisky et al. found that psychological factors including stress and depression influenced immunity and hence the susceptibility to viral and other types of infection was increased. Furthermore, the response to viral infection and replication via innate and acquired immunity through the release of pro-inflammatory cytokines and other antiviral mediators may negatively affect mood, emotion, and cognition, and may potentially precipitate a psychiatric disorder. Additionally, HIV may have a similar influence on the HPA axis to stress (Chang et al., 2005; Kumar et al., 2002). Because the physiological response to HIV infection is similar to the stress response, long-term HIV patients may develop the symptoms of chronic stress that include cardiovascular issues and immune system impairment (Pereira & Penedo, 2005).

Borghetti et al. (2009) found that because glucocorticoid (e.g., cortisol) hormone production can be directly related to stress and glucocorticoid hormones regulate inflammation, many types of disease involving inflammation may carry a stress-related component. Black and Garbutt (2002) reviewed evidence that suggested certain types of

cardiovascular disease such as atherosclerosis were the result of stress-related chronic inflammation. Additionally, social isolation has been attributed to higher mortality in individuals with heart disease. In a 5-year study of 430 individuals with heart disease, Brummett et al. (2001) found that compared to those with a social network of more than three people, individuals living in isolation were almost 2.5 times more likely to die. Factors including the severity of the disease, demographic factors, level of physical functioning, and the amount of psychological distress did not vary significantly between the isolated and nonisolated individuals. However, higher rates of smoking, higher levels of hostility, and lower income levels predicted mortality in both groups. The issue of cardiac heart disease is further complicated for HIV seropositive individuals using HAART due to potential metabolic side effects. A study of 95 individuals using HAART by Salyer, Lyon, Settle, Elswick, and Rackley (2006) found that 20% of the group had a 10-year risk of 10% or greater for developing coronary heart disease.

Collazos, Mayo, Martinez, and Ibarra (2003) studied a group of 197 HIV seropositive individuals and found that the metabolic side effects of certain types of HAART were associated with raised serum cortisol. Christeff, Numez, and Gougeon (2000) found that the ratio of cortisol to the steroid hormone dehydroepiandrosterone (DHEA) became elevated in HIV seropositive individuals including those taking HAART. Changes in the cortisol to DHEA ratio (higher cortisol and lower DHEA) were negatively correlated with CD4 cell counts, with increased lipids (cholesterol, triglycerides, and apolipoprotein B) that are associated with lipodystrophy syndrome

(loss of fat or the redistribution of fat), and with the malnutrition markers such as fat mass and body cell mass.

The psychoneuroimmunological model is especially pertinent to HIV because of the complex interaction of factors that govern disease progression, particularly for vulnerable individuals. Sexual and racial minorities frequently experience stigma and discrimination that can lead to chronic stress and the production of hormones that modulate metabolism and restrain immunity (Pereira & Penido, 2005; Sue & Sue, 2012). Stress-related hormones may lower immune resistance to HIV and enhance viral replication (Cole et al., 2001; Kumar et al., 2002). HIV infection can produce physical and psychological effects that are similar to the effects of stress (Chang et al., 2005; Kumar et al., 2002). Furthermore, due to metabolic side effects, taking HAART may lead to increased levels of stress-related hormones (Collazos et al., 2003; Salyer et al., 2006). The influence of stress affects multiple intersecting domains that contribute to the progression of HIV disease and other deleterious health conditions.

Conclusion and Transition

This literature review has attempted to cover the concepts from social cognitive theory of self-disclosure, self-efficacy, social support, and stigma in the context of HIV. Next to stress, lack of social support is one of the most significant predictors of pathological progression for HIV and AIDS (Ashton et al., 2005; Pereira & Penido, 2005). Because disclosure is a moderator of social support (Zea et al., 2005), these concepts have considerable overlap. The development of self-efficacy also relies heavily on disclosure and support (Bandura, 1994; 1997). While the psychosocial predictors of

HIV disease progression have shown promise, research is limited and preliminary (Ironson & Hayward, 2008). Only a limited number of community based psychosocial HIV interventions have been implemented, and most interventions have been studied using a majority of White participants (Johnson et al., 2008). Not enough has been done to address the culturally contextual psychosocial issues that are associated with HIV and the ramifications for treatment (Johnson et al., 2008; Safren, et al., 2010).

The chronic illness diagnosis requires a shift in behavior and attitude for the patient, his or her family, the community, and for health care providers (Swendeman, et al., 2009). The long-term self-care strategy for the HIV seropositive individual involves following a medical treatment plan, maintaining physical and mental health, and fostering positive social support. However, stigma may influence how the individual facing a chronic illness both receives and utilizes healthcare services and support (Swendeman et al., 2009). The management of the impact of stigma is an essential element in the individual self-care plan, how healthcare professionals deliver care, and how support is provided through family and the community. This review has shown how the concepts of self-disclosure, self-efficacy, social support, and stigma coincide and interact in ways that cannot be described as mutually exclusive. Accordingly, this study was designed to measure the relationship between each of these factors in individuals living with HIV. The following chapter (3) explains the survey instruments that were used, the population and sample that was surveyed, and how the gathered statistics were described and analyzed.

Chapter 3: Research Method

Introduction

This chapter describes the study design and the rationale for why this particular design was chosen. The study population characteristics, the sample size, and sampling method are covered, along with a detailed description of the survey instruments that were be used. The methods of data collection and the process of data analyses are also covered. Furthermore, aspects of participant confidentiality, safety, and data protection are described.

Research Design and Approach

Because being gay and HIV seropositive is accompanied with negative stigma, self-disclosure for HIV seropositive individuals and gay HIV seropositive individuals may be limited in order to avoid prejudice and discrimination. An anonymous survey design was chosen for this study so that the participants could respond without the potential for consequence. Research design in general calls for a minimum level of researcher bias where interactions between the participants and the researcher may influence the results (Creswell, 2008). Participants may feel that they are giving the “right” answers the researcher is looking for, and the researcher may interpret responses in ways that favor the outcome he or she is looking for. The self-administered, anonymous survey design limits researcher bias, and participants may feel free to respond in a forthright manner that is not pressured or subject to positive or negative consequences. Other than adding to the existing research in this area and potentially contributing in a way that may be socially beneficial in the long term, there was no direct

positive incentive or associated avoidance of negative consequences attached to completing the survey. The variety of questions and statements in the survey and the range of potential responses allowed participants to adequately express how they felt about each item while maintaining confidentiality and anonymity.

The survey method was also chosen for reasons of practicality and economy. A survey can be administered online to reach a broad sample group in multiple locations with minimum time and expense. The HIV seropositive population is very large; therefore, the larger the sample group is, the more accurately it will reflect trends within the population. For example, a qualitative interview based research design may help to find valuable pieces of personal information about specific members of the HIV seropositive population but may not adequately reflect patterns occurring within the larger group. Furthermore, the number of participants who can be interviewed in any one place and time by a single researcher is very limited. Levels of researcher bias may increase in personal interview scenarios, and bias may also influence the interpretation of the interview material (Creswell, 2008).

The surveys were available online using the Survey Monkey (2011) web site, and a link was posted on the Walden University participant pool bulletin board. Tracking the source address of returns was disabled in Survey Monkey (2011), making them completely anonymous. The survey cover page consisted of the standard Walden University consent form (see Appendix B). This form briefly covered the background information of the study, the participation and exclusion criteria, information about the measures used and how long it takes, the voluntary nature of the study, the potential risks

and benefits, privacy information, and contact information for me and Walden University. The cover page consent form could be printed and saved by the study participants. The consent form contained a link to the actual survey, and the participants implied agreement to the terms listed on the consent form by clicking on the link.

In terms of analyses and hypotheses testing, the survey format was an appropriate choice. The three scales (see Appendices C, D, and E) were developed independently and could be used in combination in a survey format, creating the flexibility required for testing multiple variables without warranting the development of any new measures. Demographic and HIV serostatus disclosure information was included in two questionnaires (see Appendices F and G). Instrument scoring allowed the scale responses to be transformed into numeric values that were used for the statistical analyses. The HIV serostatus disclosure questionnaire included a 5-point scale, and the answers were transferred to numeric scores for analysis. The categorical items in the demographic survey were coded for analysis.

Setting and Sample

The population represented in this study was adults who have tested seropositive for HIV. To be eligible, the participants must have tested seropositive for HIV, be over age 18, and be able to read and write in English. Anyone who was under age 18, seronegative for HIV, and could not read and write in English was excluded from participation. Because the represented population was specific, but large and widespread, the method of sampling was convenience (Creswell, 2008). No single sample frame could provide access to the entire population. Therefore, the sample was obtained from

individuals who were easily accessed via the Internet. The study invitation message (see Appendix A) with a link to the consent form and survey was accessed via the Walden University (2012) participant pool. The Walden University participant pool is a virtual bulletin board with more than 5,000 users where researchers can connect with a diverse community of individuals who are interested in research study participation. Because online surveys can have wide distribution, it was expected that the sample group would be a reasonable representation of the HIV positive population.

The Null Hypotheses 1 and 2 assumed that there would be no significant relationship, or correlation, between the tested variables (Cohen, 1988). The power of a statistical test lies in the probability that the results will be significant enough to reject the null hypotheses. The significance criterion, the population effect size, and the size of the sample group are crucial to obtaining significant results. Because the population effect size could not be known until after the study data had been collected and analyzed, the necessary sample size must be established using existing research. In a similar study investigating predictors of HIV seropositive status disclosure among gay Latino men with a sample size of 264 participants, Zea et al. (2007) used multiple regression analyses to compare 11 independent variables with the three variables of disclosure to casual partners, to close friends, and to family members. The independent variables were time since HIV diagnosis, AIDS diagnosis, age, income, education, barriers to disclosure, reasons to disclose, peer norms, U. S. acculturation, gay community involvement, and discrimination experiences. The effect sizes were 0.20 for disclosure to casual partners, 0.43 for disclosure to friends, and 0.20 for disclosure to family (Zea et al., 2007). For the

type of analysis used, this represented medium effect sizes for disclosure to casual partners and family and a large effect size for disclosure to friends (Cohen, 1992). In order to test Hypotheses 1 and 2, to find significance using a multiple regression analysis in a population with a medium effect size, at a statistical power of 0.80, and an alpha level of .05, with eight or more variables, Cohen (1992) recommended a sample size of 107 participants.

Instrumentation and Materials

The study materials consisted of a 5-part anonymous self-administered survey using the medical outcomes study (MOS) social support survey (Sherbourne & Stewart, 1991), the generalized self-efficacy scale (Schwarzer & Jerusalem, 1995), the HIV stigma scale (Berger, Ferrans, & Lashley, 2001), an HIV serostatus disclosure questionnaire (Stutterheim et al., 2011) and a personal information questionnaire. Each of the scales has documented high reliability and validity, and the reliability of the returns can be substantiated via comparison with the published values. The three scales are available in the public domain and were downloaded from the Internet (Peer Center, 2011; Rand Health, 2011; Schwarzer & Jerusalem, 2010). Permission for reproduction and use of the MOS social support survey and the general self-efficacy scale was not required; however, authorship citation was required on all reproductions of all of the scales. Permission to use the HIV stigma scale was received from the author (see Appendix H). Permission to use the HIV serostatus disclosure questionnaire was received from the author (see Appendix I). The cover page (see Appendix B) briefly described the purpose and contents of the survey and the details associated with participation.

Social Support Survey

The MOS social support survey (Sherbourne & Stewart, 1991) was used to measure the individual's perceived level of support (see Appendix C). The MOS social support survey was developed to be a short multidimensional instrument appropriate for use with patients living with chronic illness. The medical outcomes study (Sherbourne & Stewart, 1991) was a 2-year longitudinal study of the treatment and results of patient care obtained from a sample of 2,987 participants. The emphasis was on the perception of functional available support (Sherbourne & Stewart, 1991). Similar, previously developed instruments focused more on the functional aspects of support without the incorporation of personal perception. The perception of the availability of support was considered to be paramount because available support may or may not parallel the personal perception of support. For example, support may be available that is not taken advantage of, and available support may not be enough to adequately satisfy an individual with high support needs. Therefore, the nature of interpersonal relationships and how support is used was considered to be more important than objective observations of available support resources (Sherbourne & Stewart, 1991). Various support types and how they related to the outcome on health was also taken into consideration.

The resulting battery comprised of 19 items measuring the perception of five functional aspects of social support (Sherbourne & Stewart, 1991). The five dimensions were emotional, informational, tangible, positive interactive, and affectionate support. Participants were surveyed on the availability of each form of support as was required. There were five potential responses for each item, "none of the time, a little of the time,

some of the time, most of the time, and all of the time” (Sherbourne & Stewart, 1991, p. 707). The 19 items were formatted as statements, for example, “someone you can count on to listen to you when you need to talk” (Sherbourne & Stewart, 1991, p. 713).

Subscale discriminant validity was determined using a correlation between the items. The internal consistency of scores was gauged to be reliable using Cronbach’s alpha coefficients. The results (Sherbourne & Stewart, 1991) found strong reliable internal consistency and stability over 1 year for the social support subscales of emotional/informational (alpha = 0.96), tangible support (alpha = 0.92), positive interaction (alpha = 0.94), affection (alpha = 0.91), and for the overall support index (alpha = 0.97). Item stability varied but was generally fair with all correlations being significant at $p < 0.01$. Validity of the social support scale was measured against the validity of the variables from 14 other health concepts measures (Sherbourne & Stewart, 1991). Social support correlated significantly ($p < 0.01$) with all of the 14 other measures with Cronbach’s alpha coefficients ranging from 0.74 to 0.93.

The survey items are simple, short, and can be easily administered to individuals with chronic illness. The five answer levels are sensitive to a wide range of participant responses. Testing showed high levels of discrimination and convergence of item validity that supported the multidimensionality of the measures (Sherbourne & Stewart, 1991). The higher the score for the four social support subscales or for the overall functional support index indicates a higher level of social support (Rand Health, 2011). Subscale scores are obtained by calculating the average of the scores of each subscale item. The overall support index score is obtained by calculating the average for all of the 18 items

contained in the four subscales, and for the single last additional item in the survey. A simple formula that converts the score to a value between 0 and 100 can be used to compare individual results with the established means published by Sherbourne and Stewart (1991). The scores from the overall support index were used in the statistical analysis for this study.

Generalized Self-Efficacy Scale

Perceived self-efficacy was measured using the Schwarzer and Jerusalem (1995) generalized self-efficacy scale (see Appendix D). Designed as an appraisal of the overall perception of self-efficacy, the scale focused on predicting the level of coping with normal day-to-day stress and the ability to adapt to a variety of stressful life event experiences. It is self-administered and can be added to a larger survey. The average response time is less than 5 minutes on a 4-point scale, not at all true, hardly true, moderately true, and exactly true. Two example items are “I can always manage to solve difficult problems if I try hard enough, and when I am confronted with a problem I can usually find several solutions” (Schwarzer & Jerusalem, 2010, p. 3). The score is the sum of all 10 items ranging from 10 up to 40. Recoding of the scores is not necessary.

Scholz, Gutiérrez-Doña, Sud, and Schwarzer (2002) tested the psychometric properties of the generalized self-efficacy scale (GSE) with 19,120 respondents from 25 countries (7,243 men, 9,198 women, and 2,679 gender not indicated). The internal consistency among the total sample was alpha .86. The lowest score resulted from the Indian participants (.75), and the highest score came from the Japanese group (.91). A confirmatory factor analysis tested the GSE for unidimensionality with supportive results.

The conclusion was that the GSE measured the single dimension of self-efficacy, and was suitable as a multicultural assessment (Scholz et al., 2002). Leganger, Kraft, and Roysamb (2000) tested the GSE with 421 respondents aged 16 to 79, and a group of 1,576 18-year-olds and found satisfactory levels of test-retest reliability, construct validity, internal consistency, and factor structure. Luszczynska et al. (2005) tested self-efficacy as a global, unidimensional psychological construct using the GSE scale with 8,796 respondents in five countries with both men (47.2%) and women. Cronbach's alphas were consistently high with .79 in American students, .85 in Costa Rican workers, .90 in Costa Rican students, .86 in German teachers, .88 in East German immigrants, .79 in German students, .81 in Polish students, and .82 in Turkish students. Luszczynska et al. (2005) also tested the GSE for relationships between other psychological constructs and found positive correlations between the measures of self-regulation (Luszczynska, Diehl, & Gutiérrez-Doña, 2004), dispositional optimism (Gutiérrez-Doña, 2003; Sherer et al., 1982; Wieland-Eckelmann & Carver, 1990), self-esteem (Feffing & Filipp, 1996; Rosenberg, 1965), orientation towards the future (Luszczynska, Gibbons, Piko, & Tekozel, 2004; Stratham, Gleicher, Boninger, & Edwards, 1994), quality of life (Power, Harper, & Bullinger, 1999; Gutiérrez-Doña, 2003) and life satisfaction (Diener, Emmons, Larsen, & Griffin, 1985). Negative correlations were found with the measures of anxiety (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974; Gutiérrez-Doña, 2003), depression (Derogatis et al., 1974; Gutiérrez-Doña, 2003), negative affect (Gutiérrez-Doña, 2003; Watson, Clark, & Tellegen, 1988), and anger (Schwarzer & Schwarzer, 1982; Spielberger, 1979).

HIV Stigma Scale

The HIV stigma scale (see Appendix E) was developed in response to the available literature on the psychosocial aspects including stigma that were confronted by people living with HIV (Berger, Ferrans, & Lashley, 2001). The scale measures the perceived stigma of individuals living with HIV in the United States. The scale was constructed using the remaining items after two content elimination reviews. A published booklet containing 40 items was distributed to HIV-related groups across eight states. The items focused on the feelings, opinions, and experiences of people living with HIV relative to how they perceived the way they were treated. The HIV seropositive individual responds to each item on a 4-point scale ranging through strongly disagree, disagree, agree, to strongly agree (Berger et al., 2001). An example of one item is, “in many areas of my life, no one knows that I have HIV” (Peer Center, 2011, p. 3). The scores range from a minimum of 1 point each with a total of 40 up to 4 points each with a maximum of 160.

Three hundred and eighteen participants (19% women, 21% African-American, 8% Hispanic) were used to conduct a validity and reliability confirming psychometric analysis (Berger et al., 2001). An exploratory factor analysis produced four factors; 1) public attitudes toward people living with HIV, 2) disclosure concerns, 3) personalized stigma, and 4) negative self-image. Construct validity was established through relationships with the prior established psychosocial constructs of social conflict, social support, depression, and self-esteem. Coefficient alphas ranged between 0.90 and 0.93 for the subscales, and 0.96 for the overall 40-item instrument providing strong evidence of

internal consistency and reliability. The HIV stigma scale was deemed to be reliable and valid with a large sample of diverse individuals living with HIV (Berger et al., 2001). Emlert (2007) tested the HIV stigma scale with adults aged over 50. The 25 respondents included 10 women and 40% of the group was nonwhite. The stigma scale and the four subscales showed good internal consistency with alphas ranging from .92 to .96. Good convergent validity was found between the stigma scale and the Center for Epidemiologic Studies depression scale (Radloff, 1977). Sixty four percent of the respondents indicated that the scale adequately measured their experiences of stigma and made no recommendations for change. The total scores from the overall 40-item instrument were used in the statistical analysis for this study.

HIV Serostatus Disclosure Questionnaire

The HIV serostatus disclosure questionnaire (see Appendix F) includes 10 items and is a modified version of a questionnaire developed by Stutterheim et al. (2011) for a study on the psychological and social correlates of HIV status disclosure. Because disclosure can occur with different targets and at different times, it is not considered to be a discrete yes or no variable. For example, the culture, gender, sexual orientation, and level of education of the individual may influence which and how many targets receive disclosure (Mutchler et al. 2008; Shacham et al. 2012; Sheon & Crosby, 2004; Zea et al., 2007). The Stutterheim et al. questionnaire was chosen because disclosure to groups is measured on a 5-point scale thus more accurately reflecting how disclosure might occur across the individual's extended family and social circle. Furthermore, the 5-point scale allows the disclosure results to be measured on an interval scale, and the mean scores can

be compared to those of the other variable scales using parametric analysis. In terms of analysis, because social support, self-efficacy, and stigma are continuous variables that are measured on interval scales, the analysis is more efficient when disclosure is also measured as a continuous variable on an interval scale. Because studies have shown that nondisclosure is more common with casual sex partners, and stigma may influence disclosure to the primary health care provider (Lite, 2008, Zea et al, 2007), the items of casual sex partner and health care provider were added to the original questionnaire. The first five individual target items, (mother, father, long-term partner, casual sex partner, and health care provider) are answered yes, no, or not applicable. The group items of immediate family, extended family, friends, acquaintances, and colleagues are answered on a 5-point scale (almost no one, less than half, around half, more than half, and almost everyone).

Personal Information Questionnaire

A 10-item (see Appendix G) questionnaire obtained, age, the amount of time since initial HIV seropositive testing, gender, sexual orientation, sexual orientation disclosure, education level, employment status, income level, relationship status, and ethnicity and race. The variables of length of time since the initial HIV diagnosis (Zea et al. 2007) and sexual orientation disclosure (Garcia, Lechuga, & Zea, 2012) have been found in prior research to predict HIV status disclosure and were included in this study along with the other items in the questionnaire to control for potential confounding variables.

Data Collection and Analysis

The survey responses were accessed online via a secure uniform resource locator (URL) dedicated specifically to this study. The results from the survey scales and the HIV serostatus disclosure questionnaire were calculated and entered into a SPSS data set, along with the coded categorical information from the personal information questionnaire.

The scores from the instrument scales and the HIV serostatus disclosure questionnaire represented continuous variables that were analyzed using bivariate correlations and linear regressions. Pearson product moment correlation coefficients were used to test for correlations between the dependent and independent variables. For Hypothesis 1 the independent variables were perceived social support and perceived self-efficacy, and the dependent variable was HIV serostatus disclosure. For Hypothesis 2 the dependent variables were perceived social support, perceived self-efficacy, and HIV serostatus disclosure, and the independent variable was perceived HIV stigma.

Before the data were analyzed, tests were performed to determine that the data met the assumptions for Pearson correlations and linear regression (Gravetter & Wallnau, 2007). All of the instrument scores were measured in intervals and a goodness of fit test was applied to determine that the data had normal distribution. Scatter plots were used to determine that the variables had linear distribution and outlying scores that did not fit within the linear model were eliminated. Each independent variable was tested for relationship significance with the dependent variables. The independent variables from the personal information questionnaire (see Appendix G) including the length of time

since the initial HIV diagnosis (Zea et al. 2007) and sexual orientation disclosure (Garcia et al., 2012) that have shown in prior research to predict HIV serostatus disclosure were tested using Pearson (for continuous variables), and Spearman (for categorical variables) correlations. If any of the potential confounding variables were significantly correlated with the dependent variables, they were also included in the regression. Scatter plots were used to determine that the error terms between the independent variables and the dependent variables were homogenous. The error terms for the independent variables should be equal across the regression.

The alpha level of .05 represents the outside probability of scores if the null hypothesis remains true. An allowable 5% of the scores may fall in this critical region while the null hypothesis is upheld (Gravetter & Wallnau, 2007). When more than 5% of the scores fall in the critical region and the balance shrinks below 95%, the null hypothesis comes into question. The allowable probability that 5% of the sample scores will fall in the critical region before rejecting the null hypothesis lowers the potential for a type I error of falsely rejecting the null hypothesis (Gravetter & Wallnau, 2007). However, the number of variables used in the analyses also increased the probability for a type I error and was counteracted using the Bonferroni method for lowering the allowable probability level.

Hypothesis Testing

Directional Hypothesis 1a was the following: There are significant positive correlations between disclosure of HIV seropositive status and perceived social support, disclosure of HIV seropositive status and perceived self-efficacy, and between perceived

social support and perceived self-efficacy. The dependent variable of disclosure of HIV seropositive status and the independent variable of perceived social support were assessed for a significant positive correlation using the Pearson product moment correlation coefficient test. The data for the analysis came from the results of the HIV serostatus disclosure questionnaires (Stutterheim et al., 2011) and the MOS social support surveys (Sherbourne & Stewart, 1991). The dependent variable of disclosure of HIV seropositive status and the independent variable of perceived self-efficacy were assessed for a significant positive correlation using the Pearson product moment correlation coefficient test. The data for the analysis came from the results of the HIV serostatus disclosure questionnaires (Stutterheim et al., 2011) and the generalized self-efficacy scales (Schwarzer & Jerusalem, 1995). The dependent variable of perceived self-efficacy and the independent variable of perceived social support were assessed for a significant positive correlation using the Pearson product moment correlation coefficient test. The data for the analysis came from the results of the generalized self-efficacy scales (Schwarzer & Jerusalem, 1995) and the MOS social support surveys (Sherbourne & Stewart, 1991).

Directional Hypothesis 1b was the following: Perceived social support positively predicts disclosure of HIV seropositive status. The data from the results of the HIV serostatus disclosure questionnaires (Stutterheim et al., 2011) and the MOS social support surveys (Sherbourne & Stewart, 1991) was assessed using a linear regression analysis to describe the predictive relationship between the dependent variable of HIV seropositive status disclosure and the independent variable of perceived social support. Potential

confounding variables that were significantly correlated with HIV seropositive status disclosure were added at the beginning of the regression, followed by perceived social support.

Directional Hypothesis 1c was the following: Perceived self-efficacy positively predicts disclosure of HIV seropositive status. The data from the results of the HIV serostatus disclosure questionnaires (Stutterheim et al., 2011) and the generalized self-efficacy scales (Schwarzer & Jerusalem, 1995) was assessed using a linear regression analysis to describe the predictive relationship between the dependent variable of HIV seropositive status disclosure and the independent variable of perceived self-efficacy. Potential confounding variables that were significantly correlated with HIV seropositive status disclosure were added at the beginning of the regression, followed by perceived self-efficacy.

Directional Hypothesis 2a was the following: There are significant negative correlations between perceived HIV stigma, and disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy. The dependent variables of disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy, and the independent variable of perceived HIV stigma were assessed for significant negative correlations using Pearson product moment correlation coefficient tests. The data for the analysis came from the results of the HIV serostatus disclosure questionnaires (Stutterheim et al., 2011), the MOS social support surveys (Sherbourne & Stewart, 1991), the generalized self-efficacy scales (Schwarzer & Jerusalem, 1995), and the HIV stigma scales (Berger et al., 2001).

Directional Hypothesis 2b was the following: Perceived HIV stigma negatively predicts disclosure of HIV seropositive status. The data from the results of the HIV stigma scales (Berger et al., 2001) and the HIV serostatus disclosure questionnaires (Stutterheim et al., 2011) was assessed using a linear regression analysis to describe the negative predictive relationship between the independent variable of HIV stigma and the dependent variable of HIV seropositive status disclosure. Potential confounding variables that were significantly correlated with HIV seropositive status disclosure were added at the beginning of the regression, followed by HIV stigma.

Directional Hypothesis 2c was the following: Perceived HIV stigma negatively predicts perceived social support. The data from the results of the HIV stigma scales (Berger et al., 2001) and the MOS social support surveys (Sherbourne & Stewart, 1991) was assessed using a linear regression analysis to describe the negative predictive relationship between the independent variable of HIV stigma and the dependent variable of perceived social support. Potential confounding variables that were significantly correlated with social support were added at the beginning of the regression, followed by HIV stigma.

Directional Hypothesis 2d was the following: Perceived HIV stigma negatively predicts perceived self-efficacy. The data from the results of the HIV stigma scales (Berger et al., 2001) and the generalized self-efficacy scales (Schwarzer & Jerusalem, 1995) was assessed using a linear regression analysis to describe the negative predictive relationship between the independent variable of HIV stigma and the dependent variable of perceived self-efficacy. Potential confounding variables that were significantly

correlated with self-efficacy were added at the beginning of the regression, followed by HIV stigma.

Confidentiality and Ethical Considerations

Each return was given a number and no names were attached. Although the study participants were anonymous, my contact information was provided on the cover page that could be retained by the participant so they could make contact for any reason. There was no financial or other incentive to complete the survey. Although the survey instruments required the reporting of some personal, sensitive, and subjective information, the survey content was not considered to be overly intrusive, stressful, or unusually demanding. It would not be unusual for any of the survey questions to come up in a close personal conversation. It was highly unlikely that completing the survey might produce any harm or adverse reactions. In the event that the survey did produce concern or distress, participants were able to make contact and could be provided with referral information for support services in their location where the issue can be professionally addressed. Additional HIV and AIDS related support services were listed on the consent form. The names of the participants were never asked and while the demographic information was specific, it was not specific enough to be considered to be personally identifying information. The completed study materials and resulting password protected computer data were stored in a locked cabinet in a locked room. The study results were made available to any of the participants on request. Any participant contact information that was volunteered was securely stored separately from the study materials and was not labeled with any connecting or corresponding information. For example, if a study

participant requested a copy of the study results his or her contact information would be stored separately from the study materials and without any reference to the individual's participation.

Summary and Transition

Because being HIV seropositive has been associated with stigma and discrimination, this study has been designed as an anonymous survey. The study group was a convenience sample of HIV seropositive adults who can read and write in English. The effect sizes from a study on the predictors of HIV seropositive status disclosure among gay Latino men (Zea et al., 2007) were used to determine the necessary sample size of 107 participants (Cohen, 1992). The survey was available online and participation was accessed via a link included in an invitation message posted on the Walden University (2012) research participant pool bulletin board. The survey included the MOS social support survey (Sherbourne & Stewart, 1991), the general self-efficacy scale (Schwarzer & Jerusalem, 1995), the HIV stigma scale (Berger, Ferrans, & Lashley, 2001), an HIV serostatus disclosure questionnaire, and a personal information questionnaire. The HIV serostatus disclosure questionnaire was adapted from a questionnaire developed by Stutterheim et al. (2011). The three scales have been thoroughly tested and have been shown to have strong validity and reliability.

Before taking the survey the participants were provided with an informed consent form that explained the nature of the survey. A link to the survey was included on the consent form and clicking on the link implied consent for participation. The consent form contained the contact information for me and the Walden University research office, and

could be printed and retained by the participants who were encourage to make contact for any reason.

The online survey results were printed and numbered in the order that they were received, and were retained for data analysis. Hypotheses 1 and 2 concerned potential relationships between the dependent variable of HIV serostatus disclosure, and the independent variables of perceived social support, perceived self-efficacy, and perceived HIV stigma. The scores from the three surveys and the HIV serostatus disclosure questionnaires were analyzed using bivariate correlations and linear regressions to show positive and negative relationships and prediction. The results of the bivariate correlations and linear regressions provided the basis for the results and discussion sections, Chapters 4 and 5 of this dissertation.

Chapter 4: Results

Introduction

The purpose of this study was to examine potential predictive relationships between levels of the dependent variable of HIV serostatus disclosure and the independent variables of HIV-related stigma, perceived social support, and perceived self-efficacy. Research Question 1 was as follows: Are there significant positive relationships between the disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy? Research Question 2 was as follows: Is the experience of HIV-related stigma related to significantly less HIV seropositive status disclosure, lower social support, and lower self-efficacy? It was hypothesized that disclosure, social support, and self-efficacy have positive relationships, and as the level of one of these variables increases, so do the levels of the other two. On the other hand, it was hypothesized that there is a negative relationship between stigma and disclosure, social support, and self-efficacy. As levels of stigma increase, levels of disclosure, social support, and self-efficacy decrease. Because disclosure and self-efficacy are associated with lower sexual risk behavior and social support is associated with better health outcomes (Sullivan, 2005), understanding how the psychosocial influences on people living with HIV and AIDS interact may lead to a better understanding of HIV disease progression and transmission risk (Ironson & Hayward, 2008; Preston et al., 2004).

The study design was described in Chapter 3. It included the research population and sample, the data collection method, and the plan for statistical analysis. A convenience sample of 109 HIV seropositive adults completed an anonymous 5-part

online survey. The first four parts of the survey consisted of instruments independently designed to measure the dependent and independent variables in the research questions and hypotheses. These were the medical outcomes study (MOS) social support survey (Sherbourne & Stewart, 1991), the general self-efficacy scale (Schwarzer & Jerusalem, 1995), the HIV stigma scale (Berger, Ferrans, & Lashley, 2001), and an HIV serostatus disclosure questionnaire (Stutterheim et al., 2011). Part 5 was a personal information questionnaire that was included for demographic statistics and to cover potential confounding variables. Prior research has shown that the amount of time since the initial HIV diagnosis (Zea et al., 2007) and the disclosure of sexual orientation (Garcia et al., 2012) had positive relationships with HIV serostatus disclosure. Therefore, these items were included for control purposes. The data were analyzed using SPSS. Bivariate correlations and linear regressions were conducted. The results of these analyses are presented in this chapter in three sections: descriptive statistics, hypothesis testing, and summary and transition.

Descriptive Statistics

Demographic Variables

A total of six items (less than 2% for any variable) were missing across the demographic data and may be considered missing completely at random (McKnight, McKnight, Sidani, & Figueredo, 2007). Kolmogorov-Smirnov tests for goodness of fit and scatter plots were used to determine that all of the variable data followed normal linear distribution and to check for outliers. The majority (73.4%) of the survey

respondents were White, 89.9% were male, and 82.6% reported being gay. Black, Latino, and Hispanic representation was only 3.7%, 7.3% and .9% respectively (see Table 1).

Table 1

Demographic Variables

Variable		Frequency	Percent
Race and Ethnicity (<i>N</i> = 109)	White	80	73.4
	Non-Hispanic Latino	1	.9
	Hispanic Latino	8	7.3
	Black	4	3.7
	Asian	2	1.8
	American Indian or Alaska Native	1	.9
	Hawaiian Native or Pacific Islander	5	4.6
	White and Non-Hispanic Latino	2	1.8
	White and Hispanic Latino	2	1.8
	White and American Indian	2	1.8
Gender (<i>N</i> = 108)	American Indian and Hawaiian Native	2	1.8
	Male	98	89.9
Sexual orientation (<i>N</i> = 108)	Female	10	9.2
	Gay	90	82.6
	Bisexual	10	9.2
Sexual orientation disclosure (<i>N</i> = 98)	Straight	9	8.3
	Undisclosed	8	7.3
	Low	13	11.9
	Medium	20	18.3
Education level (<i>N</i> = 107)	High	57	52.3
	No Diploma	1	.9
	High School	8	7.3
	Some College	26	23.9
	College/Undergraduate	39	35.8
Income level (<i>N</i> = 108)	Post Graduate	33	30.3
	Less Than \$25000	39	35.8
	\$25000 to 50000	32	29.4
	More Than \$50000	37	33.9

Note. Respondents who answered straight for sexual orientation were not required to answer sexual orientation disclosure. Percent is for the entire sample.

(table continues)

Variable		Frequency	Percent
Employment status (N = 109)	Employed	47	43.1
	Self-employed	11	10.1
	Unemployed	35	32.1
	Retired	16	14.7
Disabled (N = 109)	Yes	40	36.7
	No	69	63.3
Relationship status (N = 109)	Committed relationship	37	33.9
	Open relationship	12	11.0
	Single	60	55.0

Note. Respondents who answered straight for sexual orientation were not required to answer sexual orientation disclosure. Percent is for the entire sample.

The average age of the survey respondents was 52.7, and only three respondents were under age 30. The group had a wide range of time since the initial diagnosis of HIV (2 months to 32 years), with an average of 17 years (see Table 2). Nine of the respondents reported being HIV seropositive for more than 30 years, dating back to before the standardized tests for HIV were introduced in 1985 and only shortly after the first case of AIDS was indentified in 1981 (Kaiser Family Foundation, 2013). A Pearson correlation test showed a positive relationship between age and time since the initial HIV diagnosis, $r(108) = .48, p < .000$.

Table 2

Age, Time Since Initial HIV Diagnosis

Variable	Range	Minimum	Maximum	Mean	Std. Deviation
Age (N = 108)	54.00	21.00	75.00	52.72	9.39
Time since initial HIV diagnosis (N = 108)	31.80	.24	32.00	16.99	9.53

Note. Measurement is in years.

Because MSM constitute the largest group for HIV and AIDS risk (CDC, 2013), it was expected that the majority of the study group would respond as gay or bisexual. Gay respondents ($n = 90$) made up 82.6% of the group, and 9.2% ($n = 10$) were bisexual (see Table 1). Of the 100 gay and bisexual survey participants, 98 responded to the sexual orientation disclosure questionnaire. The scores were coded with zero as undisclosed, low for one point, medium for two points, and high for three points. As shown in Figure 1, 57 (58.2%) participants in this subgroup had high levels of sexual orientation disclosure. Of the eight participants who had not disclosed, five were bisexual (four male and one female), and three were gay males. The participants who were gay tended to have higher levels of sexual orientation disclosure than the bisexual participants (see Figure 1). Nineteen (19.4%) respondents had disclosed to friends and family, 12 (12.2%) had disclosed only to friends, and three (3%) had disclosed only to family. None of the participants had chosen to only disclose at work. Of the 10 female respondents (9.2%), two were bisexual (1.8%), and eight (7.3%) were heterosexual. There were eight bisexual males (7.3%), and only one (0.9%) heterosexual male survey respondent.

All of the study participants ($N = 109$) completed the HIV serostatus disclosure questionnaire (Stutterheim et al., 2011, see Table 3). Nineteen (17.4%) participants reported both parents to be deceased, 17 (15.6%) had no father, and three (2.7%) had no mother. One or both parents were deceased for more than one third of the group (35.8%). Of the three participants with no mother, two (1.8%) had not disclosed to their father, and of the 17 who had no father, seven (6.4%) had not disclosed to their mother. Among the participants with both parents living, 16 (14.7%) had not disclosed to either parent. Only

two (1.8%) respondents had disclosed to their mother and not to their father, and two had disclosed to their father and not to their mother. The remaining 41 (37.6%) participants had disclosed to both parents. Forty participants (36.7%) had high disclosure to both immediate and extended family members and to friends. Ten participants (9.2%) had high disclosure to immediate family and friends. Ten participants (9.2%) had high disclosure to immediate family only. Nine participants (8.3%) had high disclosure to friends only. Three participants (2.7) had high disclosure to extended family and friends but not to immediate family. Only one participant (0.9%) had high disclosure to immediate and extended family members and not to friends. The remaining 36 participants (33%) had low disclosure to immediate family, extended family, and to friends.

More than half of the group was single ($n = 60$, 55%), one third ($n = 37$, 33.9%) were in committed relationships, and 11% ($n = 12$) were in open relationships (see Table 1). Of the 84 (77%) participants who reported to have casual sex partners, 70 had disclosed HIV serostatus and 14 had not. Among the 76 (69.7%) participants who reported to have had long-term partners, only two had not disclosed their HIV serostatus.

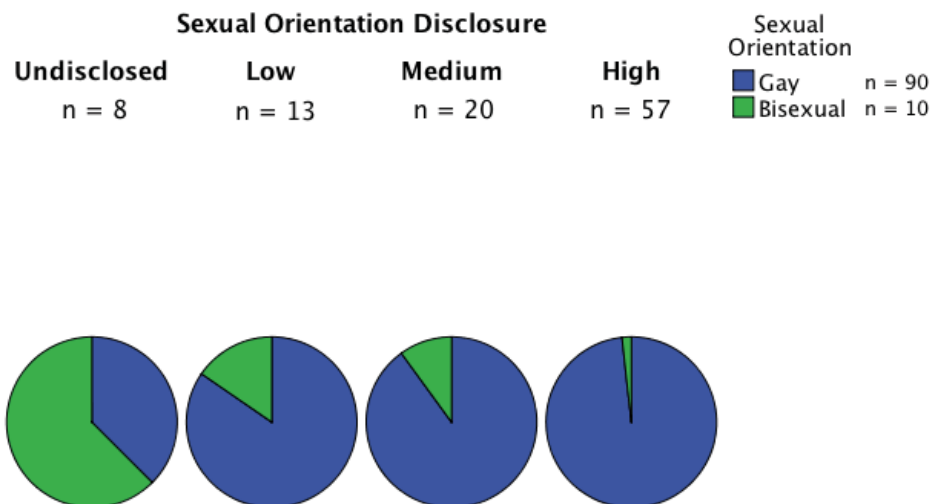


Figure 1. Sexual orientation disclosure for gay and bisexual participants ($n = 98$).

The majority of the survey respondents had received some level of college education (see Table 1). According to the US Census Bureau (2012), for the overall U.S. population, 57.28% had attended some college, 30.94% had a Bachelor's degree, 8.05% held a Master's degree, and 3.07% had Doctoral or Professional level degrees. For the respondents in this study, 23.9% had attended some college, 35.8% had a Bachelor's degree, and 30.3% had attained a post-graduate level education. Income levels across the group ranged from 35.8% earning less than \$25,000, to 29.4% earning between \$25,000 and \$50,000, and 33.9% earning more than \$50,000 (see Table 1). Almost one third of the respondents ($n = 35$, 32.1%) were unemployed: however, 16 participants (14.7%)

were retired (see Table 1). More than one third of the respondents ($n = 40$, 36.7%) were disabled and of this number 25 were unemployed.

Survey Measure Scores

The scores on the measures are listed in Table 3. The mean score for social support was 65.4 ($SD = 21.37$, range 23-95). The mean score for self-efficacy was 31.4 ($SD = 5.21$, range 10-40). The mean score for HIV serostatus disclosure was 17.4 ($SD = 7.36$, range 6-30). The mean score for HIV-related stigma was 96 ($SD = 23.54$, range 42-153).

Table 3

Survey Measure Scores

Variable	<i>N</i>	Range	Minimum	Maximum	Mean	Std. Deviation
Perceived social support	109	72.00	23.00	95.00	65.42	21.37
Perceived self efficacy	109	30.00	10.00	40.00	31.41	5.21
HIVserostatus disclosure	109	24.00	6.00	30.00	17.41	7.36
HIV stigma	109	111.00	42.00	153.00	95.99	23.54

Because there were outlying scores evident in several of the box plots (see Figures 2, 6, & 8), comparative analyses were conducted to check if the inclusion of the extreme scores influenced the results. The differences due to the extreme scores were minimal and there was no significant influence for the majority of the results. One extreme low score on perceived self-efficacy (see Figure 2) was removed to measure the significance of the relationship with perceived social support. Before the extreme score

was removed the correlation was $r(109) = .32, p = .001$, and it was $r(108) = .28, p = .003$ after the score was removed.

There were some differences in the survey measure scores based on gender and sexual orientation. There was a significant difference between males ($M = 31.8, SD = 4.9$) and females ($M = 27, SD = 6.3$) on perceived self-efficacy, $t(106) = 2.87, p = .005$ (see Figure 2). Given a violation of Levene's test for the equality of variances, $F(106) = 9.14, p = .003$, a t -test not assuming equal variances was computed indicating a significant difference between males ($M = 17.7, SD = 7.54$) and females ($M = 14.1, SD = 4.15$) on HIV serostatus disclosure, $t(15.91) = 2.35, p = .032$ (see Figure 3). There was also a significant difference between males ($M = 93.9, SD = 23.15$) and females ($M = 117.7, SD = 17.06$) on HIV-related stigma, $t(106) = -3.16, p = .002$ (see Figure 4). Based on these results the conclusion can be made that males had higher levels of perceived self-efficacy and HIV serostatus disclosure, and lower levels of HIV-related stigma than females.

Given a violation of Levene's test for the equality of variances, $F(98) = 4.45, p = .038$, t computed not assuming equal variances indicated a significant difference between the gay ($M = 18.1, SD = 7.62$) and bisexual participants ($M = 13.4, SD = 5.6$) on HIV serostatus disclosure, $t(13.09) = 2.44, p = .03$ (see Figure 5). Given a violation of Levene's test for the equality of variances, $F(97) = 9.72, p = .002$, a t -test not assuming equal variances indicated the gay participants were more likely to have disclosed their HIV serostatus ($M = 18.1, SD = 7.62$) than the heterosexual participants ($M = 14.8, SD = 4.05$), $t(14.5) = 2.13, p = .05$ (see Figure 5). The gay participants had significantly lower

perceptions of HIV-related stigma ($M = 92.8$, $SD = 22.97$) than the bisexual participants ($M = 111$, $SD = 23.95$), $t(98) = -2.37$, $p = .02$, or heterosexual participants ($M = 111.4$, $SD = 17.3$), $t(97) = -2.38$, $p = .02$ (see Figure 6). There were no statistically significant differences on any of the measures between the bisexual and heterosexual participants. HIV serostatus disclosure was higher for gay men than bisexual and heterosexual individuals, and gay men had lower levels of HIV-related stigma than bisexual and heterosexual individuals.

Additionally, participants in the medium income range of \$25,000 to \$50,000 ($M = 21.06$, $SD = 6.4$) had significantly higher levels of HIV serostatus disclosure than those in the low income range of less than \$25,000 ($M = 17.36$, $SD = 7.32$), $t(69) = -2.24$, $p = .028$, as well as those in the high income range of more than \$50,000 ($M = 14.32$, $SD = 7.01$), $t(67) = 4.14$, $p < .000$ (see Figure 7). There was no statistically significant difference on HIV serostatus disclosure between the low and high income range groups. Based on these results the conclusion can be made that individuals in the medium income range of \$25,000 to \$50,000 had higher levels of HIV serostatus disclosure than those in lower or higher income ranges.

Single participants had lower perceptions of social support ($M = 55.43$, $SD = 21.37$) than those who were in open relationships ($M = 76.6$, $SD = 16.5$), $t(70) = 3.23$, $p = .002$, as well as those who were in committed relationships ($M = 78$, $SD = 13$), $t(95) = 5.79$, $p < .000$ (see Figure 8). There was no statistically significant difference on perceived social support between the participants who were in open and committed relationships. Based on these results the conclusion can be made that single individuals

living with HIV perceive lower levels of social support than those who are in open or committed relationships. Levels of social support did not vary significantly across the group based on any other factor.

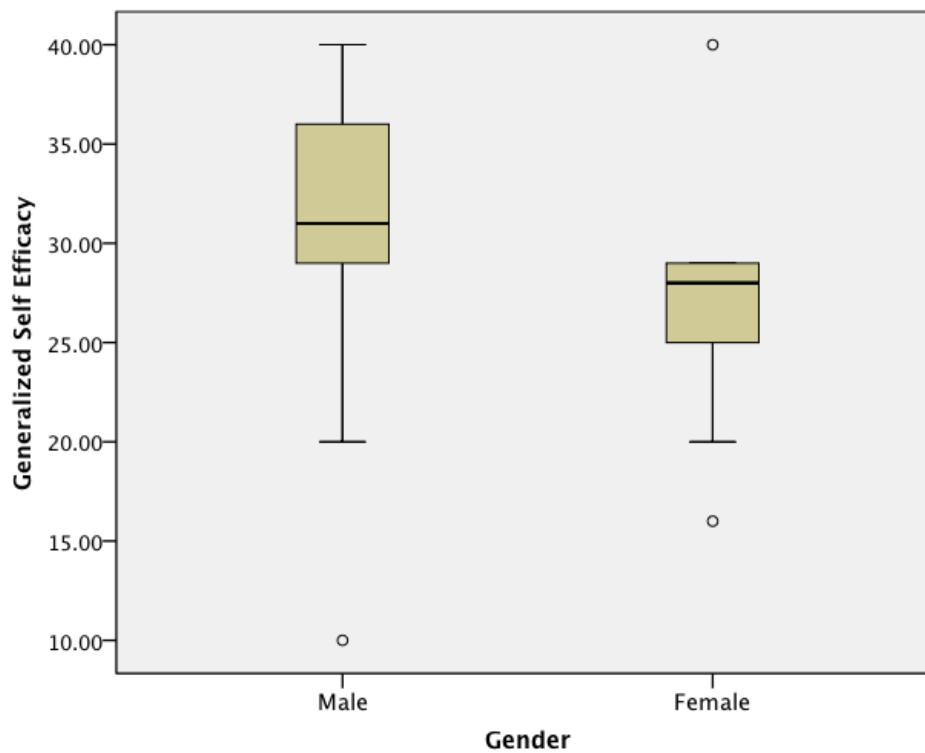


Figure 2. Gender and perceived self-efficacy (Male $n = 98$, Female $n = 10$).

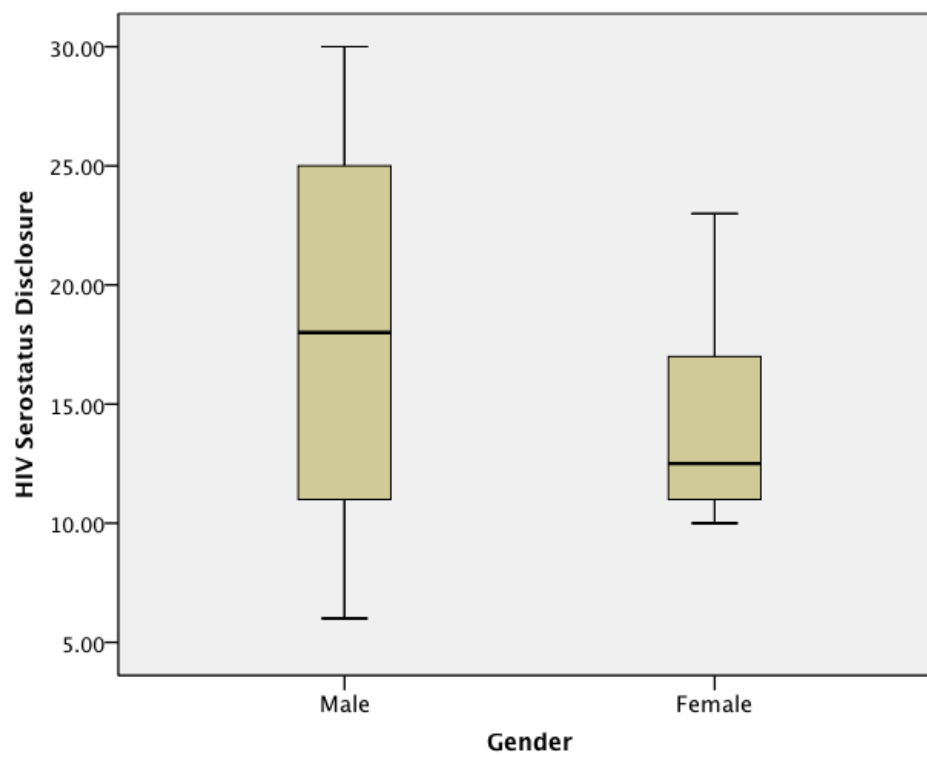


Figure 3. Gender and HIV serostatus disclosure (Male $n = 98$, Female $n = 10$).

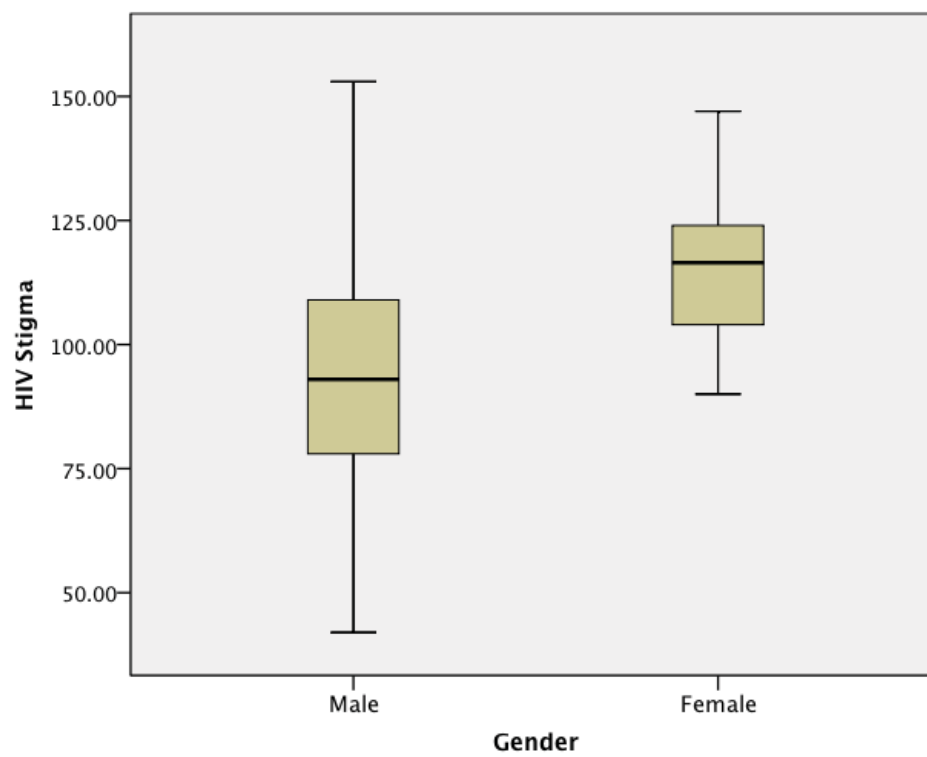


Figure 4. Gender and HIV stigma (Male $n = 98$, Female $n = 10$).

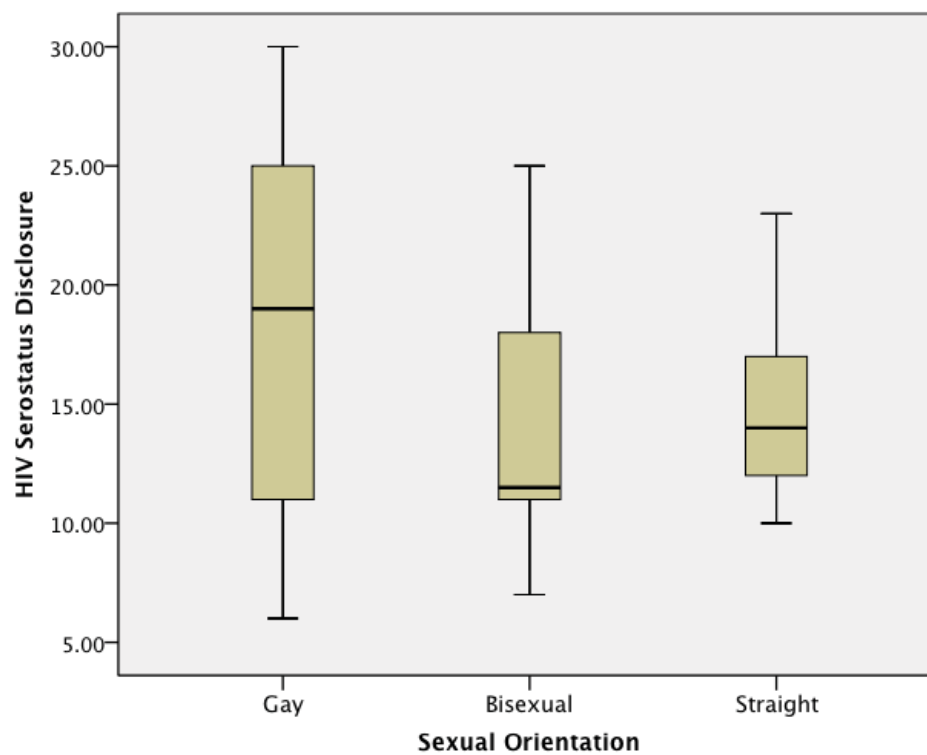


Figure 5. Sexual orientation and HIV serostatus disclosure (Gay $n = 90$, Bisexual $n = 10$, Straight, $n = 9$).

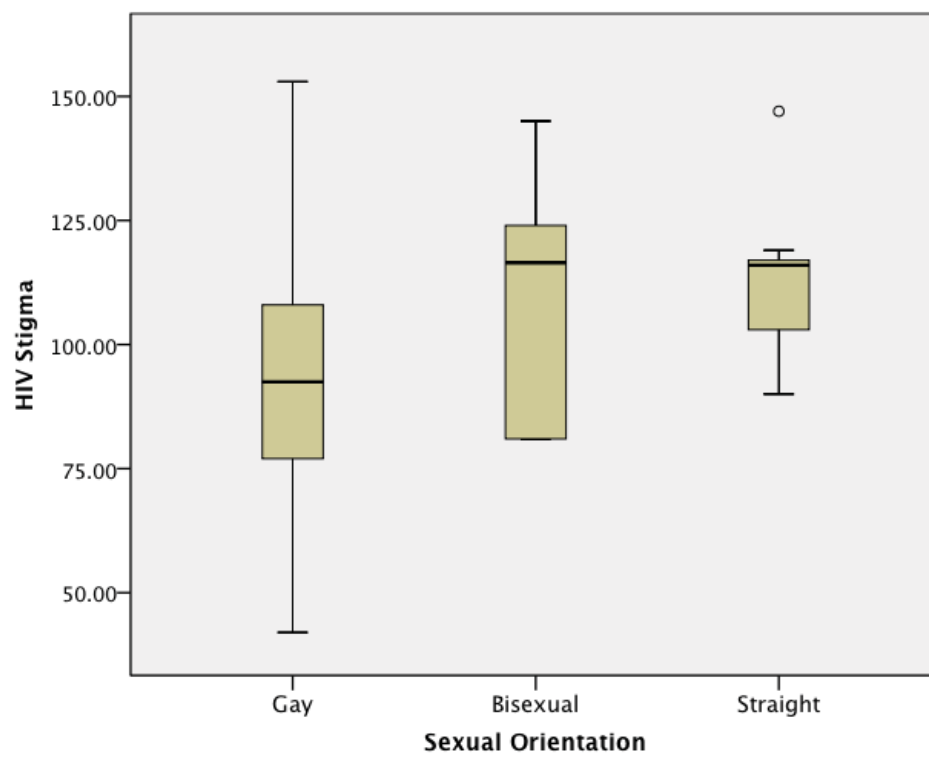


Figure 6. Sexual orientation and HIV stigma (Gay $n = 90$, Bisexual $n = 10$, Straight, $n = 9$).

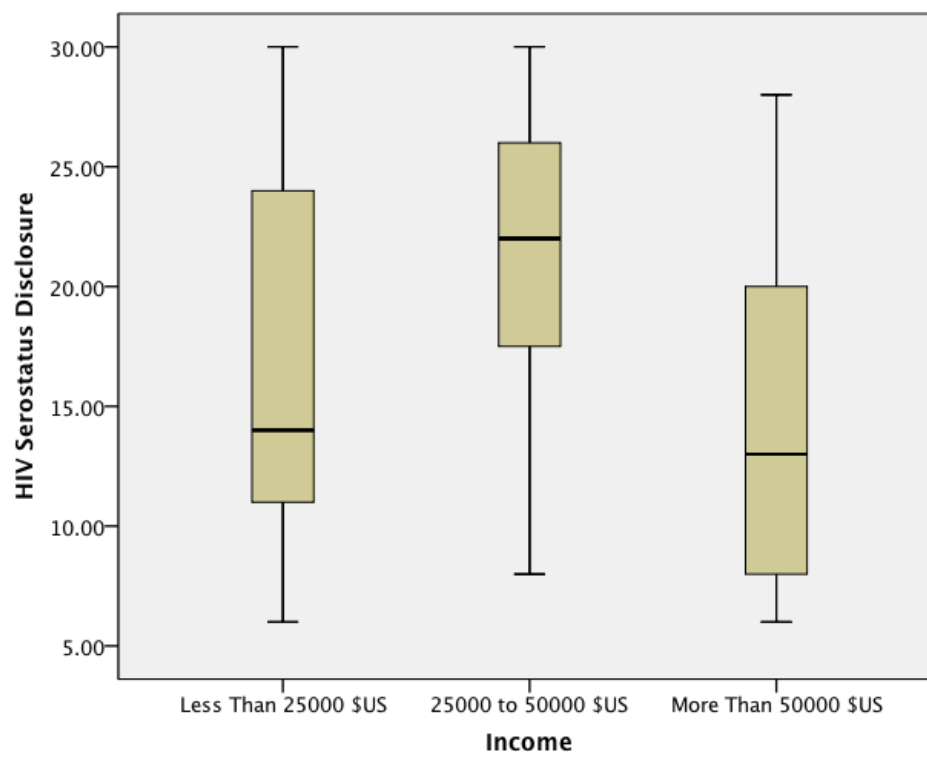


Figure 7. Income and HIV serostatus disclosure.

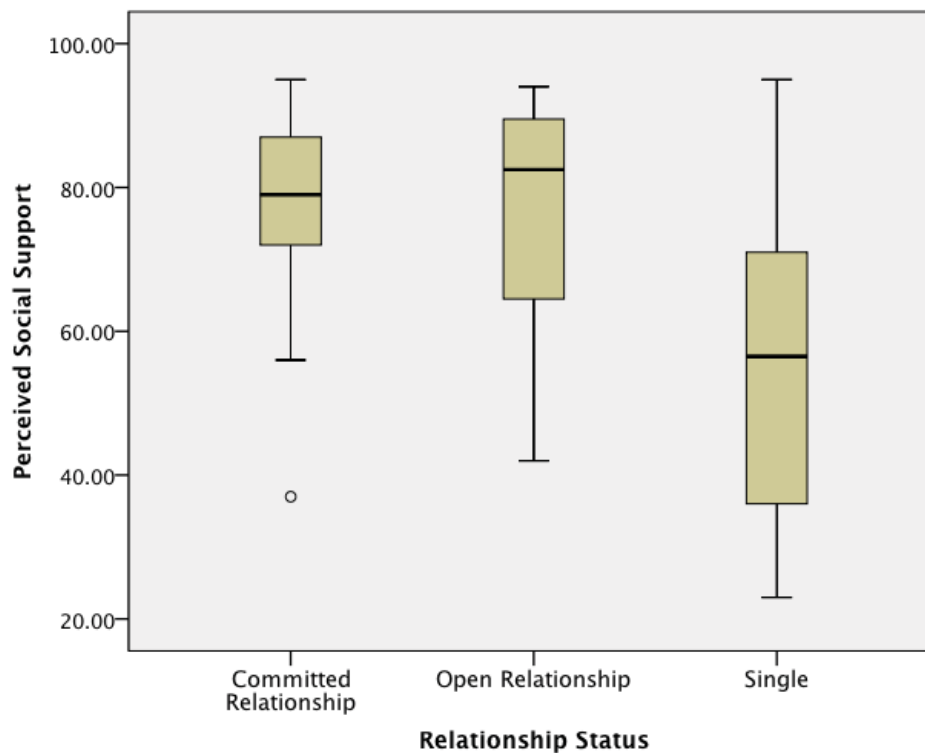


Figure 8. Relationship status and perceived social support (Committed $n = 37$, Open $n = 12$, Single $n = 60$).

Hypothesis Testing

Hypothesis 1 Results

Directional Hypothesis 1a was the following: There are significant positive correlations between disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy. Pearson correlation coefficients were computed between the variables of HIV serostatus disclosure, perceived social support, and perceived self-efficacy (see Table 4). Due to the number of variables and multiple testing, the significance level was corrected using the Bonferroni method to counteract the potential for a type I error ($.05/14 = .003$). A review of the scatter plots showed the scores for self-

efficacy had normal distribution and there was no ceiling effect. However, because there was one extreme low score on perceived self-efficacy (see Figure 2), the significance of the relationship between perceived self-efficacy and social support was measured with this score removed. There were significant relationships between HIV serostatus disclosure and perceived social support, $r(109) = .36, p < .000$, and between perceived self-efficacy and perceived social support, $r(108) = .28, p = .003$. However, there was no significant relationship between HIV serostatus disclosure and perceived self-efficacy. Based on these results the conclusion can be made that as social support increases so do HIV serostatus disclosure and perceived self-efficacy. Although HIV serostatus disclosure was not related to perceived self-efficacy, because two of the three correlations in Directional Hypothesis 1a were statistically significant, Null Hypothesis 1a was rejected. In addition, disclosure of sexual orientation was positively correlated with perceived social support, and time since the initial HIV diagnosis was positively correlated with HIV serostatus disclosure (see Table 4).

Table 4

Correlations for Hypothesis 1 (N = 109).

	Perceived social support	Perceived self efficacy	HIV serostatus disclosure
Perceived social support			.36**
Perceived self efficacy	.28*		.00
HIV serostatus disclosure	.36**	.00	
Sexual orientation disclosure	.39***	.09	.45***
Time since initial HIV diagnosis	.14	.11	.36***

Note. * $p = .003$, $n = 108$, ** $p < .000$, $N = 109$, *** $p < .000$, $n = 98$

Directional Hypothesis 1b was the following: Perceived social support positively predicts disclosure of HIV seropositive status. Because prior research has shown that the amount of time since the initial HIV diagnosis (Zea et al., 2007) and the disclosure of sexual orientation (Garcia et al., 2012) both have positive relationships with HIV serostatus disclosure, a hierarchical regression was conducted with time since initial HIV diagnosis and disclosure of sexual orientation included in the first step, and perceived social support added in the second step (see Table 5). Collinearity diagnostics in the regression computation produced variance inflation factors (VIF) that measure how much the variance of the estimated coefficients increase over the case of no correlation among the independent variables. If no two independent variables are correlated, all of the VIFs will be 1. If the VIF for one of the variables is close to or greater than 5, there is collinearity associated with that variable and one of them should be removed. In this case the VIF for perceived social support was 1.16, time since the initial HIV diagnosis was 1.08, and the disclosure of sexual orientation was 1.23. Therefore, all three independent

variables were used in the regression. Partial regressions between the predictor variables and HIV serostatus disclosure are shown in figures 9, 10, and 11. Both time since initial HIV diagnosis and sexual orientation accounted for a significant proportion of the HIV serostatus disclosure variability, adjusted $R^2 = .24$, $F(2, 106) = 18.35$, $p < .000$. After controlling for time since initial HIV diagnosis and sexual orientation disclosure, perceived social support also accounted for a significant proportion of the HIV serostatus disclosure variance, $t = 2.38$, $p = .019$, (for the overall model adjusted $R^2 = .27$, R^2 change = .03, $F(1, 105) = 14.65$, $p < .000$). Based on these results the conclusion can be made that sexual minority individuals who disclose sexual orientation are more likely to disclose HIV serostatus, and as the period of time since the initial HIV diagnosis increases so does the likelihood of HIV serostatus disclosure. Additionally, based on these results the conclusion can be made that as the perception of social support increases so does the likelihood of HIV serostatus disclosure. Therefore, Null Hypothesis 1b was rejected. Due to the lack of statistical significance between perceived self-efficacy and HIV serostatus disclosure, Null Hypothesis 1c: perceived self-efficacy does not predict disclosure of HIV seropositive status, was not rejected.

Table 5

Coefficients Beta, Std. Error, t, and p for the Prediction of HIV Serostatus Disclosure,

H1b₀ (N = 109)

Model	Predictor	β	SE	t	p
1	Time since initial HIV diagnosis	.25	.07	2.94	.004
	Sexual orientation disclosure	.38	.68	4.33	.000
2	Time since initial HIV diagnosis	.25	.07	2.89	.005
	Sexual orientation disclosure	.30	.72	3.31	.001
	Perceived social support	.21	.21	2.38	.019

Note. Model 1, adjusted $R^2 = .24$, $F(2, 106) = 18.35$, $p < .000$. Model 2, adjusted $R^2 = .27$, R^2 change = .03, $F(3, 105) = 14.65$, $p < .000$.

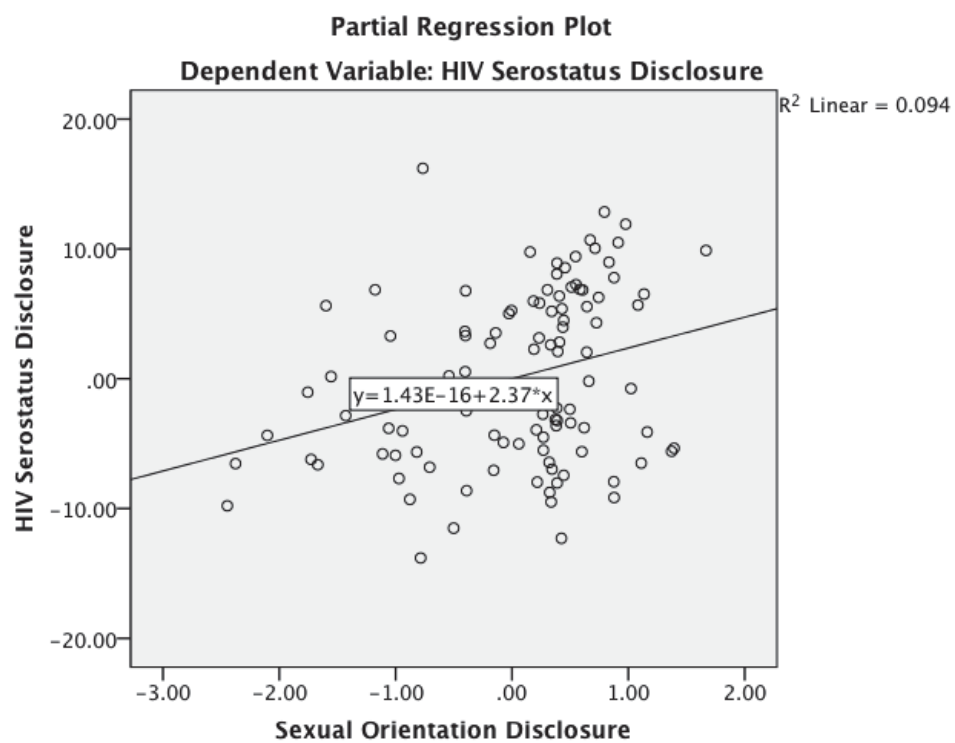


Figure 9. Partial regression plot showing the linear prediction of HIV serostatus disclosure from sexual orientation disclosure.

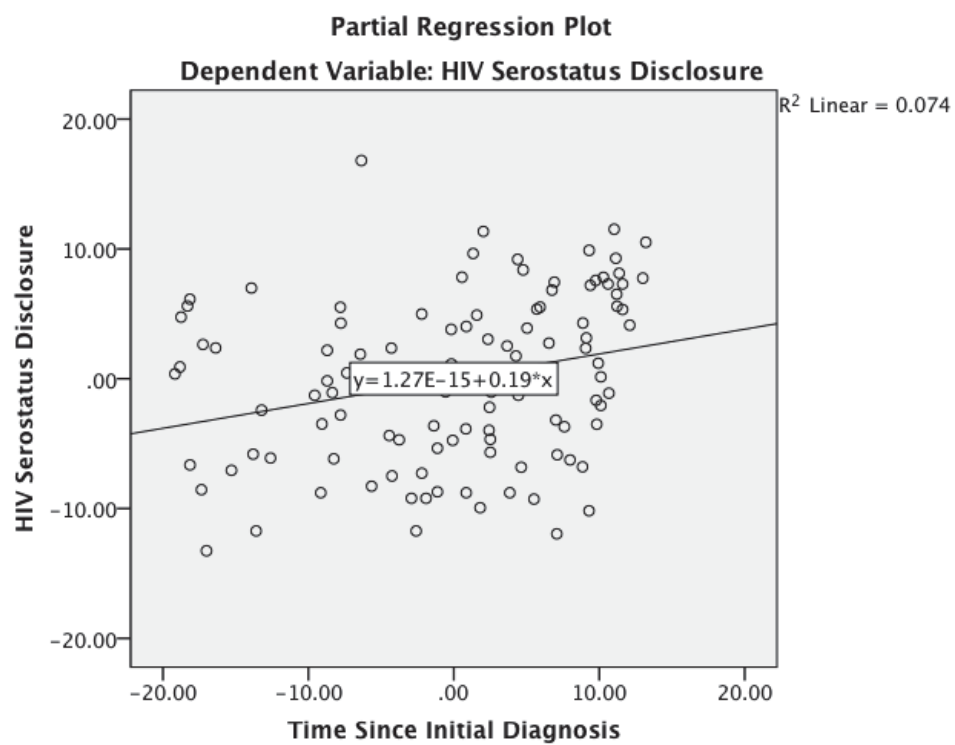


Figure 10. Partial regression plot showing the linear prediction of HIV serostatus disclosure from time since the initial HIV diagnosis.

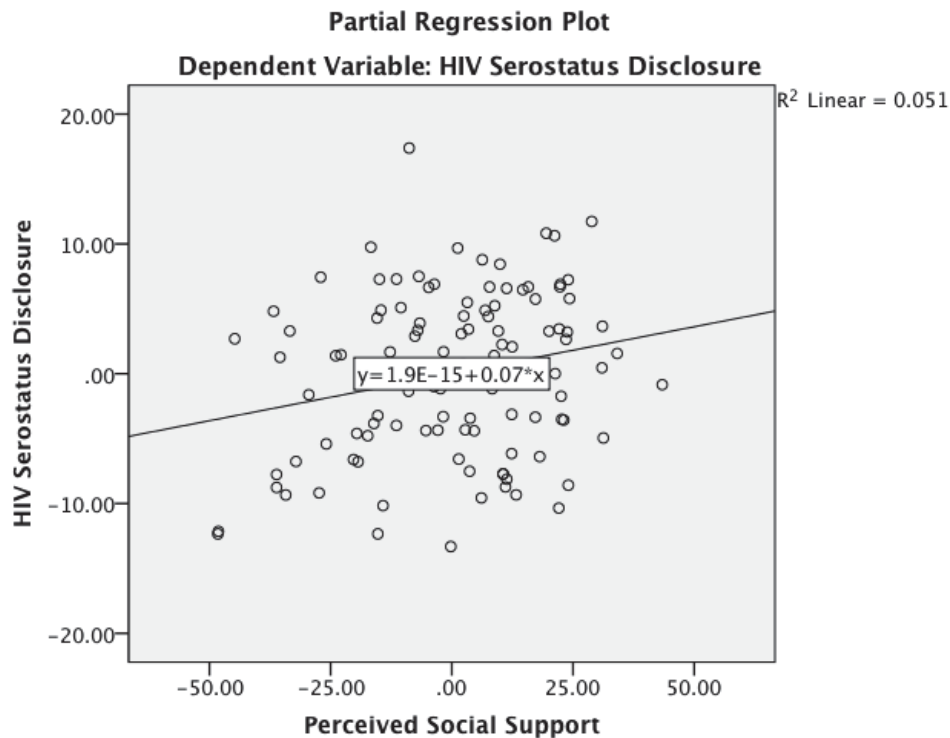


Figure 11. Partial regression plot showing the linear prediction of HIV serostatus disclosure from perceived social support.

Hypothesis 2 Results

Directional Hypothesis 2a was the following: There are significant negative correlations between perceived HIV stigma, and disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy. Pearson correlation coefficients were computed between perceived HIV stigma, and disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy (see Table 6). There were significant negative relationships between HIV-related stigma and HIV serostatus disclosure, $r(109) = -.64, p < .000$, and between HIV-related stigma and perceived social support, $r(109) = -.52, p < .000$. There was no statistical significance between HIV-

related stigma and perceived self-efficacy. Based on these results the conclusion can be made that as HIV-related stigma increases, HIV serostatus disclosure and perceived social support decrease. Since two of the three correlations in Hypothesis 2a were statistically significant, Null Hypothesis 2a was rejected.

Because there was one extreme low score on perceived self-efficacy (see Figure 2), and one extreme high score on HIV stigma (see Figure 6), an additional correlation computation was conducted with both of these scores removed to determine whether or not they influenced the results. The results between HIV stigma and HIV serostatus disclosure remained the same, $r(107) = -.64, p < .000$, and were similar between HIV stigma and perceived social support, $r(107) = -.50, p < .000$. There was a minimal change in the correlation between perceived self-efficacy and HIV stigma and the relationship remained nonsignificant. Therefore, the decision was made to retain the extreme scores in the analyses.

Table 6

Correlations for Hypothesis 2 (N = 109)

	HIV stigma
HIV serostatus disclosure	-.64*
Perceived social support	-.52*
Perceived self efficacy	-.13

Note. * $p < .000$

Directional Hypothesis 2b was the following: Perceived HIV stigma negatively predicts disclosure of HIV seropositive status. The confounding independent variables of time since the initial HIV diagnosis, sexual orientation disclosure, and perceived social support were entered in the first step of a hierarchical regression, followed by HIV stigma (see table 7). Time since initial HIV diagnosis, sexual orientation disclosure, and perceived social support accounted for a significant proportion of the HIV serostatus disclosure variability, adjusted $R^2 = .27$, $F(3, 105) = 14.65$, $p < .000$. However, after adding HIV stigma, perceived social support ceased to be a significant predictor of disclosure of HIV seropositive status. HIV stigma accounted for a significant proportion of the HIV serostatus disclosure variance, $t = -.6.17$, $p < .000$. For the overall model adjusted $R^2 = .46$, R^2 change = .19, F change (1, 104) = 38.11, $p < .000$. The partial regression between stigma and serostatus disclosure is in Figure 12. Based on these results, the conclusion can be made that HIV-related stigma negatively predicts disclosure of HIV seropositive status. Therefore, Null Hypothesis 2b was rejected. Additionally, both sexual orientation disclosure and time since the initial HIV diagnosis continued to predict HIV serostatus disclosure after HIV-related stigma was added to the model (see Table 7). Therefore, the conclusion can be made that HIV serostatus disclosure is predicted by a combination of sexual orientation disclosure, time since the initial HIV diagnosis, and HIV-related stigma.

Table 7

Coefficients Beta, Std. Error, t, and p for the Prediction of HIV Serostatus Disclosure,

H2b₀ (N = 109)

Model	Predictor	β	SE	t	p
1	Time since initial HIV diagnosis	.24	.07	2.89	.005
	Sexual orientation disclosure	.30	.72	3.31	.001
	Perceived social support	.21	.03	2.38	.019
2	Time since initial HIV diagnosis	.19	.06	2.59	.011
	Sexual orientation disclosure	.18	.64	2.19	.030
	Perceived social support	-.01	.03	-.172	.864
	HIV stigma	-.53	.03	-6.17	.000

Note. Model 1, adjusted $R^2 = .27$, $F(3, 105) = 14.65$, $p < .000$. Model 2, adjusted $R^2 = .46$, R^2 change = .19, $F(4, 104) = 24.4$, $p < .000$.

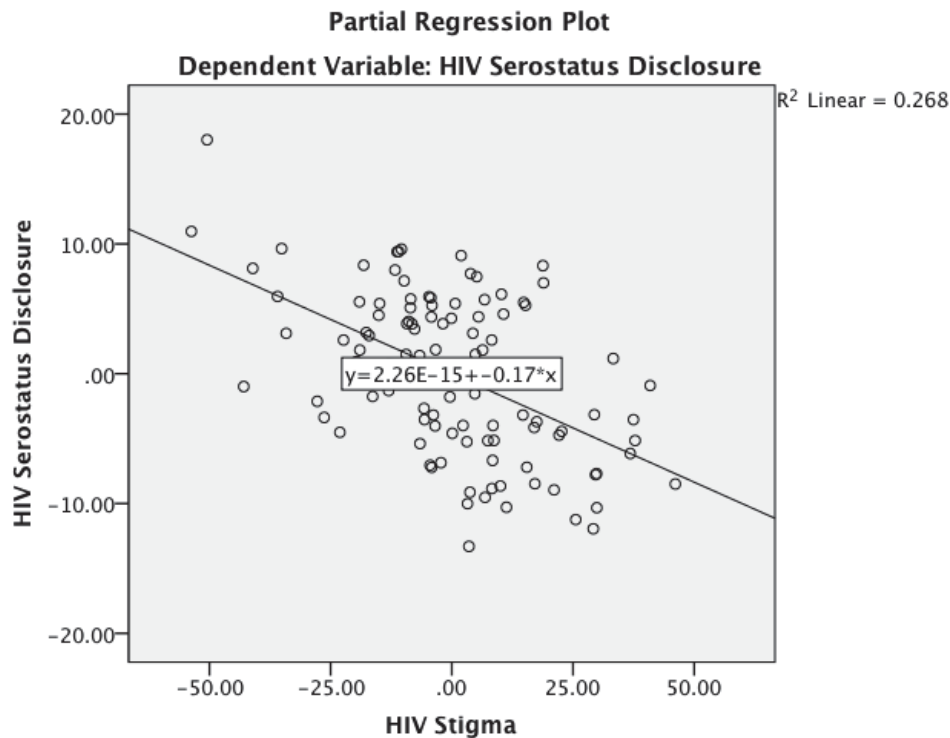


Figure 12. Partial regression plot showing the negative linear prediction of HIV serostatus disclosure from perceived HIV stigma.

Directional Hypothesis 2c was the following: Perceived HIV stigma negatively predicts perceived social support. The confounding independent variables of HIV serostatus disclosure, sexual orientation disclosure, and generalized self-efficacy were entered in the first step of a hierarchical regression, followed by HIV stigma (see Table 8). The results indicated that HIV serostatus disclosure, sexual orientation disclosure, and generalized self-efficacy accounted for a significant proportion of the variability in perceived social support, adjusted $R^2 = .24$, F change (3, 105) = 12.55, $p < .000$. After controlling for HIV serostatus disclosure, sexual orientation disclosure, and generalized

self-efficacy, only HIV stigma ($t = -3.87, p < .000$) and generalized self-efficacy ($t = 2.98, p = .004$) accounted for a significant proportion of the variance in perceived social support. For the final model adjusted $R^2 = .33, R^2$ change = .09, F change (1, 104) = 14.94, $p < .000$. Based on these results the conclusion can be made that higher levels of self-efficacy and lower levels of HIV-related stigma predict social support (see Figure 13). Therefore, Null Hypothesis 2c was rejected. Due to the lack of statistical significance between HIV stigma and perceived self-efficacy, Null Hypothesis 2d: perceived HIV stigma does not negatively predict perceived self-efficacy, was not rejected.

Table 8

Coefficients Beta, Std. Error, t, and p for the Prediction of Perceived Social Support, H2c₀ (N = 109)

Model	Predictor	β	<i>SE</i>	<i>t</i>	<i>p</i>
1	HIV serostatus disclosure	.26	.27	2.80	.006
	Sexual orientation disclosure	.21	2.17	2.24	.027
	Generalized self-efficacy	.29	.35	3.36	.001
2	HIV serostatus disclosure	.02	.31	.23	.816
	Sexual orientation disclosure	.15	2.07	1.72	.089
	Generalized self-efficacy	.24	.33	2.98	.004
	HIV stigma	-.41	.09	-3.87	.000

Note. Model 1, adjusted $R^2 = .24, R^2$ change = .26, $F(3, 105) = 12.55, p < .000$. Model 2, adjusted $R^2 = .33, R^2$ change = .09, $F(4, 104) = 14.4, p < .000$.

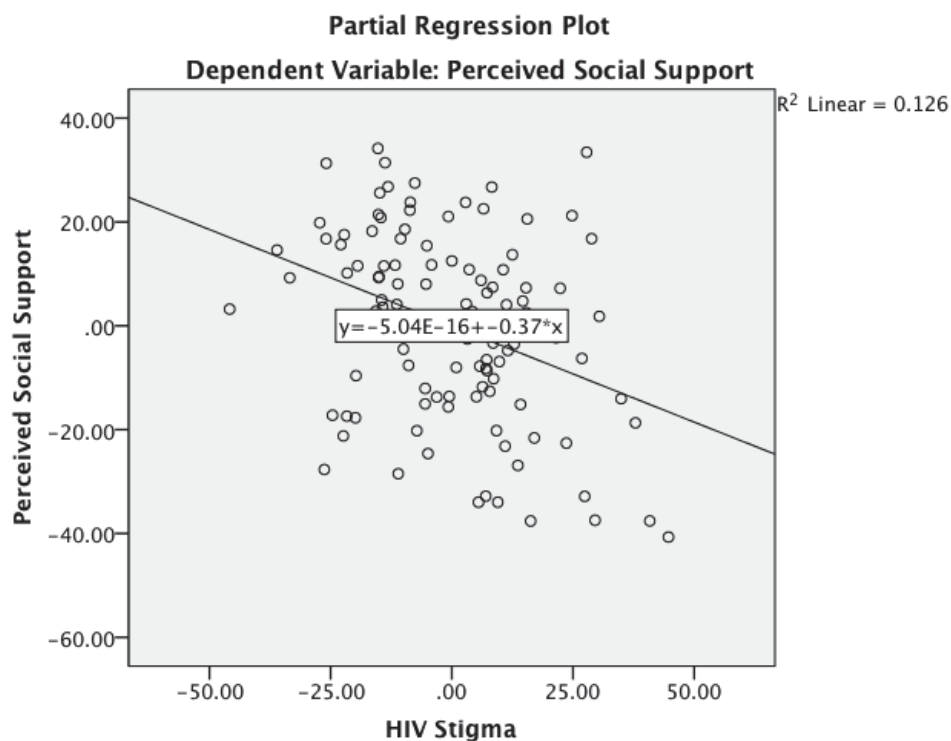


Figure 13. Partial regression plot showing the negative linear prediction of perceived social support from HIV stigma.

Summary and Transition

This chapter began with a review of the research questions and hypotheses and the reasoning behind why they were chosen. The data analysis plan was outlined with the type of computations and how the associated assumptions were met, and the potential confounding variables were noted. The first section included the descriptive statistics for each variable beginning with the demographic statistics for the sample, followed by the statistics from the survey measures.

The descriptive statistics for the sample group were compared with statistics from the CDC (2013) and the Census Bureau (2012). The statistics for the sample group did not parallel the government statistics in terms of age, gender, sexual orientation, and race or ethnicity. The majority of the group consisted of White gay men in the early 50s. Women, people who identify as straight, and ethnic minorities were highly underrepresented in the sample. The number of group members with a post-graduate education was much higher than the population norm, and many of the group members were disabled, unemployed, or retired. More than half of the survey respondents reported being single.

The survey instrument measures were described along with the range, means, and standard deviations for all of the respondent scores. The scores for HIV-related stigma were significantly higher for female, bisexual, and heterosexual participants, than for gay male participants. Although levels of self-efficacy did not vary significantly between the gay and bisexual participants, gay men had significantly higher levels of self-efficacy than the female and heterosexual participants. The scores on HIV serostatus disclosure were significantly lower for the female, bisexual, and heterosexual participants, than for gay male participants. The participants in the middle-income range (\$25,000 to \$50,000) had significantly higher scores on HIV serostatus disclosure compared to those in the lower and higher income ranges. In addition, the single participants had significantly lower scores on perceived social support compared to those in committed and open relationships. Levels of social support did not vary significantly based on race or ethnicity, gender, or sexual orientation.

The second section contained the hypothesis testing procedures. Research Question 1 was tested using Pearson coefficients and the results showed significant relationships between perceived social support and HIV serostatus disclosure, and between perceived social support and perceived self-efficacy. There was no statistically significant relationship between self-efficacy and HIV serostatus disclosure. Since two of the three correlations showed statistical significance, Null Hypothesis 1a was rejected.

Based on the results of the Pearson correlations, a hierarchical linear regression analysis showed that time since the initial HIV diagnosis, sexual orientation disclosure, and perceived social support accounted for a significant proportion of the variance in HIV serostatus disclosure. The conclusion was made that as the perception of social support increases so does the likelihood of HIV serostatus disclosure. Therefore, Null Hypothesis 1b was rejected. The results also confirmed the prior findings that as the amount of time since the initial HIV diagnosis increases so does the amount of HIV serostatus disclosure, and gay and bisexual individuals who disclose their sexual orientation are more likely to disclose HIV seropositive status (Garcia et al., 2012; Zea et al., 2007). Because there was no correlation between perceived self-efficacy and HIV serostatus disclosure, Null Hypothesis 1c was not rejected.

Research Question 2 was tested using Pearson correlations that resulted in a significant negative relationship between HIV stigma and HIV serostatus disclosure, and a significant negative relationship between HIV stigma and perceived social support. There was no statistical significance between HIV stigma and perceived self-efficacy.

Since two of the three correlations showed statistical significance, Null Hypothesis 2a was rejected.

After controlling for time since initial HIV diagnosis, sexual orientation disclosure, and perceived social support, HIV stigma accounted for a significant proportion of the variance in HIV serostatus disclosure. The conclusion was made that individuals who experience more HIV-related stigma are less likely to disclose HIV seropositive status. Therefore, Null Hypothesis 2b was rejected. Additionally, time since initial HIV diagnosis and sexual orientation disclosure continued to predict HIV serostatus disclosure after HIV-related stigma was added to the model.

After controlling for HIV serostatus disclosure, sexual orientation disclosure, and generalized self-efficacy, only HIV stigma and generalized self-efficacy accounted for a significant proportion of the variance in perceived social support. Therefore, individuals who experience more HIV-related stigma are less likely to perceive social support. Null Hypothesis 2c was rejected. Because there was no statistically significant correlation between HIV stigma and perceived self-efficacy, Null Hypothesis 2d was not rejected. These findings, the implications for social change, and recommendations for potential research and action are discussed in the following Chapter 5.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This study was designed to collect and analyze data concerning the relationships between HIV serostatus disclosure, social support, self-efficacy, and HIV-related stigma in a sample group of 109 adults living with HIV and AIDS. The purpose of the study was to examine potential positive interrelationships between HIV serostatus disclosure, social support, and self-efficacy. Because HIV seropositive individuals often experience discrimination and stigma, it was hypothesized that higher levels of HIV-related stigma would parallel decreases in levels of HIV serostatus disclosure, social support, and self-efficacy.

As medical advances have raised the quality of life and increased life expectancy for people living with HIV and AIDS, the psychosocial issues of stigma and discrimination may continue to hinder social support that is essential for optimal health and self-efficacy and may impede self-disclosure that informs sex partners and helps to lower disease transmission (Parker & Aggleton, 2003). The understanding of how these psychosocial factors interact may assist health care professionals to develop socially and culturally tailored treatment approaches in order to lower disease progression for people living with HIV and reduce transmission risk to their HIV seronegative sexual partners. This chapter includes a summary of the study results, discussion of the findings, implications for social change, recommendations for potential research and action, and the study limitations.

Discussion of the Findings

The main objective of this study was to articulate relationships between the psychosocial factors of self-disclosure, social support, self-efficacy, and stigma that are associated with HIV and AIDS. It was hypothesized that the disclosure of HIV serostatus, social support, and self-efficacy would have positive interrelationships, and HIV-related stigma would have a negative influence on these relationships. Because prior research has shown that both the amount of time since the initial HIV diagnosis (Zea et al., 2007) and sexual orientation disclosure (Garcia et al., 2012) were positively related to HIV serostatus disclosure, these items were included in the analyses for control purposes.

A hierarchical regression analysis indicated that both time since the initial HIV diagnosis and sexual orientation disclosure accounted for a significant proportion of the HIV serostatus disclosure variability, confirming the prior findings of the relationships between these variables and HIV serostatus disclosure (Garcia et al., 2012; Zea et al., 2007). Additionally, there were statistically significant differences in self-efficacy, HIV serostatus disclosure, and HIV-related stigma based on gender and sexual orientation. The gay male participants had significantly higher scores on HIV serostatus disclosure and self-efficacy and lower scores on HIV-related stigma than the female and heterosexual participants, and the gay participants had significantly higher scores on HIV serostatus disclosure and lower scores on HIV-related stigma than the bisexual participants.

Although in this study there were no significant differences in perceived social support based on gender and sexual orientation, differences in the influence of social

support based on gender have been shown in prior research (Khamarko & Myers, 2013). Perceived social support can also be influenced by culture (Khamarko & Myers, 2013). However, because the majority of the sample was White and male it was not possible to compare different racial, ethnic, and gender groups. Furthermore, since most of the males were gay and most of the females were straight, sexual orientation and gender were confounded in the sample. Because levels of HIV-related stigma also vary across communities (Wohl et al., 2011) and this study showed that stigma mitigates disclosure, the lower levels of stigma and higher levels of disclosure for the gay men found in this study may be related to involvement with the gay community where stigma is lower and disclosure is more common (Zea et al., 2007). High levels of internalized stigma and low disclosure have been found among heterosexual individuals and those that have been diagnosed for shorter periods of time (Lee et al., 2002). Because the average time since diagnosis for this study group was 17 years, the higher disclosure among the gay men may also have been due to this factor. Prior studies on differences in generalized self-efficacy between HIV seropositive groups have not been found.

Zea et al. (2007) investigated the antecedents of serostatus disclosure based on a combination of consequence theory (Serovich, 2001) and social interaction theory (Kalichman, 2003) and found that study participants who perceived barriers to disclosure (negative consequences) were less likely to disclose. Individuals who had peers with high levels of disclosure were more likely to disclose. Those who identified with the gay community had higher disclosure to friends and family, although disclosure to casual sex partners was lower than for those who had less identification with the gay community

(Zea et al., 2007). Disclosure in this current study group of mostly White gay men over 50 was high among friends, family, long-term, and casual sex partners. Gay men were more likely to disclose than those who did not identify with the gay community, which is in accordance with the results of Zea et al. Additionally, since there were positive associations between sexual orientation disclosure, time since the initial HIV diagnosis, and serostatus disclosure, these factors may help to explain the high level of serostatus disclosure among older gay men. The practice of nondisclosure and unprotected sex among casual partners within the gay community (Ciccarone et al., 2003; Sheon & Crosby, 2004; Zea et al., 2007) may be attributed to younger age. However, since only three of the participants were under 30, further investigation is needed.

Research Question 1 was the following: Are there significant positive relationships between disclosure of HIV seropositive status, perceived social support, and perceived self-efficacy? Bivariate correlation computations showed statistically significant positive relationships between HIV serostatus disclosure and perceived social support, and between perceived self-efficacy and social support. However, there was no significant statistical correlation between HIV serostatus disclosure and perceived self-efficacy. Since there were significant relationships between disclosure and social support Null Hypothesis 1a was rejected; however, the lack of any significant relationship between HIV serostatus disclosure and perceived self-efficacy meant that the hypothesis of shared mutual interaction could not be confirmed.

Directional Hypothesis 1b was the following: Perceived social support positively predicts disclosure of HIV seropositive status. After controlling for time since initial HIV

diagnosis and sexual orientation disclosure, perceived social support accounted for a significant proportion of the variance in HIV serostatus disclosure. Therefore, Null Hypothesis 1b was rejected. The results confirmed prior research showing that individuals who perceive adequate social support are more likely to disclose HIV serostatus (Kalichman, DiMarco, Austin, Luke, & DiFonzo, 2003). Since there was no significant relationship between self-efficacy and disclosure, Null Hypothesis 1c, perceived self-efficacy does not predict disclosure of HIV seropositive status, was not rejected.

In this study, a generalized self-efficacy scale (Schwarzer & Jerusalem, 2010) that is not domain specific was used so that self-efficacy could be simultaneously compared with several dissimilar psychosocial factors. Although social cognitive theory and self-efficacy theories (Bandura, 2004) have guided public health strategies and in particular HIV and AIDS intervention and risk reduction studies (Mutchler et al., 2008), research on the relationship between self-efficacy and the psychosocial factors that are associated with HIV and AIDS is limited (Ironson & Hayworth, 2008). The fact that social support was related to self-efficacy is consistent with social cognitive theory (Bandura, 2004). However, the lack of a significant relationship between self-efficacy and disclosure does not allow for generalized self-efficacy to be included in the conceptualization of self-disclosure models. Because social support was related to both self-efficacy and self-disclosure, more investigation is recommended into this relationship. Social support may be a mediator between self-efficacy and self-disclosure without having a direct relationship between these two factors.

The long-term self-care strategy for the HIV patient involves fostering positive social support and managing stigma (Rintamaki et al., 2007; Swendeman et al., 2009). The diagnosis of a chronic illness may be stressful, and withholding disclosure of the illness can increase stress and result in anxiety and depression (Zea et al., 2005; Zea, 2008). In the study by Zea et al. (2005), disclosing HIV seropositive status to friends and family helped to relieve stress, diminish negative mental health symptoms, and increase social support. In the current study, social support and disclosure were moderately correlated (Cohen, 1988).

There have been several theories of disclosure related to the AIDS epidemic. Before the introduction of highly active antiretroviral treatments (HAART) the disease progression model described disclosure as being unavoidable as symptoms developed and the individual was in need of medical treatment (Chaudoir & Fisher, 2010). After the introduction of HAART and the health information privacy laws in 1996 (Pezzotti et al., 2003; U.S. Department of Health and Human Services, 2014) many individuals did not experience symptom progression, the disclosure of HIV status within the treatment setting was protected by law, and disclosure became more of a personal choice. Nevertheless, while taking HAART does reduce symptoms and improves longevity for individuals living with HIV, health outcomes are improved when a person has a supportive social network (Burgoyne, 2005). Strachan et al. (2007) found that individuals who were more open about their sexual orientation and HIV status were more likely to receive support and maintained a more robust immune system.

The consequence theory of HIV serostatus disclosure was developed as the disease progression model became redundant (Serovich, 2001). In this theory, the individual who has the perception of negative consequences to disclosure and low social support may be less likely to disclose. However, Zea et al. (2007) found that the perceived reaction to disclosure was only one aspect in a more complex process. The social group and cultural environment, identification with peers and gay culture, and the disposition of the individual were all involved in the personal disclosure process. Because the influence of peers and the associated social group can be very influential on disclosure, examination of how the individual interacts with his or her social group may be an important aspect in the formulation of social support and disclosure models that adequately describe behavior for individuals living with HIV and AIDS (Sheon & Crosby, 2004; Zea et al., 2007).

Bairan et al. (2007) found that the type of social relationship was also a common factor in the disclosure process. Disclosure can vary considerably depending on the level of intimacy in the relationship and whether or not the relationship is sexual. Mayfield Arnold et al. (2008) found that disclosure varied among groups and reflected the personal identity of the individual. Disclosure was higher for younger adults than for older adults, for women than for men, and for Latinos and Whites than for African Americans. While this current study showed a relationship between the length of time since the initial diagnosis and disclosure, disclosure for younger adults may be due to the lower levels of stigma that are experienced by the post HAART generation (Kaiser Family Foundation, 2009). Mayfield Arnold et al. also suggested that disclosure is related to the person's

communication strategy. The individual who has accepted his or her HIV serostatus to be a part his or her identity may be more open to disclosure. Furthermore, because of the close association between the gay community and HIV since the beginning of the AIDS epidemic (Klosinsky, 2013), it may be easier for individuals who identify with the gay community to also identify with HIV seropositive status and thus be more open to disclosure. On the other hand, because of the association between stigma, sexual behavior, and HIV, some MSM may be more comfortable seeking out casual and anonymous sexual encounters where nondisclosure is common and responsibility is left up to the individual (Bird & Voisin, 2010). Culture-bound stigma might also be a barrier to disclosure (Bird et al., 2011). In a study of the ethnic differences in HIV status disclosure and sexual risk, the rates of sexual risk behavior were similar across the study group. However, the rate of HIV status disclosure was significantly lower for the African American participants (Bird et al., 2011).

Research Question 2 was the following: Is the experience of HIV-related stigma related to significantly less HIV seropositive status disclosure, lower social support, and lower self- efficacy? There were significant negative relationships between HIV-related stigma and HIV serostatus disclosure, and between HIV-related stigma and perceived social support. Similarly, stigma predicted social support in that those with higher perceptions of stigma had less social support. However, there was no statistical significance between HIV-related stigma and perceived self-efficacy.

These results showed that social support was a significant predictor of disclosure. However, when HIV-related stigma was added to the model stigma mitigated the

influence of support on disclosure. The consequence theory of HIV serostatus disclosure (Serovich, 2001; Zea, et al., 2007) may explain how the disclosure of HIV seropositive status is negatively impacted by HIV-related stigma and how this mitigates the perception of support. According to this concept, the perception of potential negative consequences (stigma) mediates the relationship between disclosure of HIV serostatus and perception of support (Serovich, 2001; Zea, et al., 2007). As the individual experiences higher levels of HIV-related stigma the perception of negative consequences related to the disclosure of HIV seropositive status may also increase. In order to avoid stigma, the individual may avoid disclosure and not receive the associated benefit of support. High levels of HIV-related stigma have been consistently associated with significant decreases in social support and poorer physical and mental health (Logie & Gadalla, 2009).

HIV-related stigma may be considered among the negative consequences of disclosure. However, the individual may seek support and disclose regardless of the perception of stigma (Earnshaw, & Chaudoir, 2009). Furthermore, because perceptions are supported by a number of factors (social, cultural, historical), they may be altered through the positive receipt of support (Chaudoir, et al., 2011; Serovich, 2001). Since the results of this current study showed that stigma interferes with the relationship between support and disclosure the reduction of stigma-related perceptions is considered key to increasing both support and disclosure. It may not be possible to directly alter the source of stigma, however, because the perception of stigma is personally subjective there is potential for adaptation and adjustment at an individual level (Serovich et al., 2011).

Stigma may be experienced in the form of internalized shame leading to nondisclosure and difficulty seeking treatment (Foster & Gaskins, 2009). Preston et al. (2007) found that among MSM living in rural areas, stigma perceived from the community, family, and healthcare workers was significantly related to low self-esteem and higher sexual risk. In a group of young Black MSM, Radcliffe et al. (2010) found that 90% had experienced stigma related to being a sexual minority, 88% reported HIV-related stigma, and 78% reported stigma as a result of both of these factors. Stigma was associated with social avoidance, shame, and high-risk sex. HIV testing behavior and adapting to an HIV diagnosis may also be more difficult when stigma is externalized and associated with outside groups (Lekas, Siegel, & Schrimshaw, 2006). Individuals living in groups (heterosexual) where stigma is associated with other groups (gay and bisexual) may be less likely to disclose, be tested, or seek support.

Family members may also experience HIV-related stigma (Bogart et al., 2008). Almost all of the families interviewed in the Bogart et al. (2008) study feared experiences of discrimination and almost 80% had experienced discrimination. Of the seronegative family members, 10% experienced stigma associated with a seropositive parent. Most of the discrimination concerns were based on fears of HIV contagion (Bogart et al., 2008). The study findings indicated a need for interventions to reduce HIV stigma in the general public and to help families cope with stigma. In a longitudinal study conducted by the Kaiser Family Foundation (2009) one third of Americans (34%) were found to harbor at least one misconception about HIV transmission (e.g., sharing a drinking glass, touching a toilet seat, or swimming in a pool with someone who is HIV seropositive). One half of

Americans (51%) stated being uncomfortable with having food prepared by someone who was HIV seropositive. Moreover, levels of knowledge about HIV transmission have not improved since 1987 indicating a need to raise public awareness (Kaiser Family Foundation, 2009). Additionally, the reported visibility and sense of urgency surrounding HIV and AIDS has fallen considerably in recent years and the level of personal concern about becoming infected has declined, especially among young adults that make up the highest risk group (CDC, 2013, Kaiser Family Foundation, 2009). A lack of concern and the avoidance of stigma may negatively impact testing behavior and disclosure leading to higher transmission risk, lower social support, and poorer health outcomes (Earnshaw & Chaudior, 2009; Lekas et al., 2006; Strachan et al. 2007).

The disclosure of seropositive status and the receipt of social support have both been shown to have health benefits for individuals living with HIV. Individuals who self-disclose and who perceive a satisfactory level of social support often experience less depressive symptoms, have lower serum cortisol levels, lower viral load, and higher CD4 cell counts (Fekete, et al., 2009a; Fekete et al., 2009b; Ironson & Hayward, 2008; Zea et al., 2005; Zea, 2008). In this present study, social support was significantly related to HIV serostatus disclosure, perceived self-efficacy, HIV-related stigma, and disclosure of sexual orientation. Time since initial HIV diagnosis was the only potential confounding variable that was not significantly related to social support. Furthermore, HIV-related stigma did not moderate the relationship between disclosure of sexual orientation and serostatus disclosure. Therefore, the disclosure of sexual orientation may also act as a mediator between the disclosure of seropositive status and social support. The indication

is that the identification with and disclosure of sexual minority status may assist with serostatus disclosure and gaining support.

The term *men who have sex with men* and the acronym MSM have been used in HIV-related literature since the early 1990s (Young & Meyer, 2005). However, this oversimplification of HIV-related sexual behavior fails to describe the varied dimensions of human sexuality and undermines the self-identification of sexual minority groups. This terminology was used as a way to avoid the HIV and AIDS related stigma that was associated with specific groups (gay and bisexual men) and to focus on the sexual behavior rather than the sexual identity (Young & Meyer, 2005). However, in using this terminology the complex social context surrounding the sexual behavior is lost.

Milet, Malebranche, Mason, and Spikes (2005) found that Black men who have sex with men and women (MSMW) without disclosing their bisexual behavior to their female partners were mainly responsible for the increase in HIV infections among Black women. Compared to White MSM, Black MSM were less likely to identify as a sexual minority or disclose homosexual or bisexual behavior. However, the identification with a sexual minority group is not always related to higher disclosure, safer sex practices, or lower HIV transmission risk. Sheon and Crosby (2004) found that unsafe sex and the assumption that sex partners might be HIV seropositive was becoming more common in the San Francisco Bay area gay community, especially since the introduction of HAART. In large cities, as the number of gay friends increases the level of sexual risk behavior for the individual may also increase (Mao et al., 2004). Because this current study did not assess sexual risk behavior, conclusions could not be made regarding this factor.

Implications for Social Change

Because of the relationships found in this study between the disclosure of sexual orientation, HIV serostatus disclosure, social support, and stigma the implication for social change is to identify various patterns in how stigma affects sexual identity expression, self-disclosure, and social support. For example, culture-bound stigma may inhibit the identification and disclosure of sexual identity and sexual behavior among ethnic minorities leading to clandestine sexual behavior and HIV transmission risk (Bird, et al., 2011). Furthermore, the identification with sexual minority groups where high-risk sexual practices and nondisclosure are common may also result in HIV transmission risk (Crawford, Allison, Zamboni, & Soto, 2002; Milet et al., 2005; Sheon & Crosby, 2004). People who disclose HIV serostatus may not always practice safer sex (Serovich et al., 2011). However, since stigma mitigated the relationship between disclosure and social support, interventions to reduce stigma may result in increased social support as well as improve psychological well-being for people living with HIV and AIDS. Therefore, reducing stigma and supporting healthy behaviors may also reduce the risk of transmission of HIV to others.

Who the person discloses to and the type of response he or she receives may vary considerably depending on the context. For example, Fekete et al. (2009b) found that the perception of stress within the family environment among low-income ethnic minority women living with HIV moderated the beneficial effects of HIV serostatus disclosure and the perception of support. Disclosure to their spouse and children, coupled with the perception of a high level of support and a high level of stress was related to increased

cortisol levels and depressive symptoms. However, disclosure to their mothers, coupled with the perception of a high level of support, and a high level of stress was related to lower cortisol levels. The added support of one extended family member helped to moderate the influence of stress on low-income ethnic minority women living with HIV. Additionally, Fekete et al., (2009a) found that nonHispanic White men who had disclosed to their mothers and who perceived a high level of family support may also have a lower viral load and higher CD4 cell counts. On the other hand, Latino men who had disclosed to their mothers and who perceived low family support may have a higher viral load (Fekete et al., 2009a).

In this present study, levels of social support did not vary significantly across the group. In a study of 121 HIV seropositive Black and White gay and bisexual men, Tate, Van Den Berg, Hansen, Kochman, and Sikkema (2006) found that there was no significant interaction between race, perception, and use of social support as a coping strategy. Furthermore, Black MSM tended to use a wider range of coping strategies that included more use of spirituality as a means of coping. It is possible that because racial minorities contend with higher levels of discrimination, stigma, unemployment, and poverty, and lower levels of education and access to health care, the need for multiple coping strategies is greater than for White MSM (Tate et al., 2006). Additionally, individuals who perceived a higher level of social support adopted more support seeking behavior and positive coping strategies. Those who perceived low support had lower support seeking behavior and engaged in destructive coping that included denial and high-risk sex. Spirituality, hope, and optimism were viewed as important internal

resources for Black MSM and Tate et al. recommended that spirituality be included in interventions with this group. Understanding what types of support are most effective and measuring the level of support satisfaction for people of different race, culture, and other demographic factors may be more important than focusing on how much actual support is available.

Since the disclosure of sexual orientation is less of a concern for heterosexuals living with HIV, HIV-related stigma may play a larger role in whether or not the person discloses his or her serostatus and gains support, particularly for a new diagnosis. Not having the experience of stigma and discrimination associated with their sexual orientation, and holding stereotypes about who is affected by HIV (e.g., gays, sex-workers, and intravenous drug users), the heterosexual individual may have more difficulty adjusting to a health diagnosis that is attributed with a high level of social stigma. In a diverse sample of women living with HIV, Lekas et al. (2006) found that the perception of stigma was the primary challenge in adapting to the diagnosis. Lee, Kochman, and Sikkema (2002) found that heterosexual study participants and those living in the Mid West (compared to New York City) experienced the highest levels of internalized HIV-related stigma. These findings support the findings in this present study of lower levels of stigma among openly gay men than the female, bisexual, and heterosexual participants and warrant further investigation.

The number of studies that compare different groups (e.g., nongay, women, etc.) living with HIV remains limited. Milet et al. (2005) noted that Black heterosexual men had been largely ignored in the research and since around half all men who are HIV

seropositive have not been tested and around half of all new infections are in the Black community the problem is critical (CDC, 2010a, 2010b). Culture-bound stigma, the association of stigma with other groups, and internalized stigma may result in the avoidance of HIV testing and the engagement in high-risk sexual practices (Earnshaw & Chaudior, 2009; Tate et al., 2006). Earnshaw and Chaudior (2009) explained the formulation and operation of stigma in a model that depicted how stereotyping, prejudice, and discrimination overlap. Stereotyping was explained in terms of cognition, prejudice as an emotional experience, and discrimination as a form of behavior. Understanding and addressing each type of stigma and how it manifests may be an important asset for increasing support, and may assist in the understanding of how disclosure is moderated by stigma. Hatzenbuehler, Nolen-Hoeksema, and Erickson (2008) found that three types of stigma predicted different types of behavioral and psychological outcomes among gay men. Anticipated stigma predicted depression, enacted stigma predicted substance use, and internalized stigma predicted high-risk sexual behavior. Further research on types of stigma among people from different races, ethnicities, gender, etc. is warranted.

The long association between HIV and AIDS and the gay community has helped to create pathways toward disclosure and support for people who are connected to these communities (Klosinski, 2013). Men who have sex with men continue to be the group most affected by HIV and AIDS (51%; CDC, 2013). However, the proportion of HIV infections from heterosexual contact has increased, and the proportion of young Latino and African American MSM who are contracting HIV is increasing (CDC, 2013; Kaiser Family Foundation, 2013). Because much of the emphasis of HIV-related stigma has

been associated with the gay community (Klosinski, 2013), members of the gay community have learned to adapt, disclosing in order to receive support and to obtain treatment regardless of stigma. Individuals outside of these groups living with HIV and HIV-related stigma may not have access to the type of collective efficacy that the gay community has developed in response to this prejudice (Earnshaw & Chaudoir, 2009). Tracing the approach the gay community has developed in response to the AIDS crisis may be beneficial in adapting and translating appropriate responses for other social groups.

Furthermore, the Internet has made it possible for more people in more locations to access support. For example, the independent online Poz Magazine (2013) contains HIV and AIDS related articles, interactive blogs, and forums; and includes a national search engine that lists resources searchable by zip code, organization name, organization type, and by specific services provided and groups served. The HIV InSite (2013) operated by the University of California, San Francisco, lists databases for HIV and AIDS service providers with national, state, and local resources. Additionally, the independently operated National AIDS Map (NAM, 2013) contains an international resource database.

Since the largest number of new HIV infections in 2010 was among Black MSM between 13 and 24 years old, and the number of women and heterosexual people living with HIV has increased (CDC, 2013), specific issues that are inherent to these groups ought to be investigated in the treatment milieu. Young, ethnic and racial minority MSM, women, and heterosexual individuals who have little or no connection to the gay

community, and who live in communities that perpetuate HIV-related stigma or are antigay, may not receive the type of response to an HIV diagnosis that might be expected in a community that has long-term experience in support of people living with HIV and AIDS. All of the participants in this study had disclosed their HIV serostatus to their health care provider. While the sample was too small and not diverse enough to make conclusions between different groups, Mayfield Arnold et al., (2008) found that 40% of heterosexual people living with HIV do not consistently disclose serostatus in the health care setting. Quinn and Overbaugh (2005) stated that women in particular face specific vulnerabilities to HIV based on a higher physical susceptibility to infection than men, and due to social and cultural issues including poverty, violence, lack of education, gender inequality, and sexual behavioral norms. The recommendation was for more prevention strategies that address the wide-ranging gender inequalities that promote HIV infection, particularly for African American and Hispanic women.

As the new generation of post HAART gay men emerges, changes in how the gay community copes with HIV and AIDS is also a growing area of concern (Smit et al., 2012). Although stigma is often associated with the gay community, little attention has been given to the various types and impact of stigma among gay men and within gay communities (Klosinsky, 2013; Smit et al., 2012). For example, there may be a division within gay communities between seropositive and seronegative individuals that is related to ageism, discrimination based on physical appearance and health status, social exclusion, rejection and violence (Smit et al., 2012).

The global acceptance and encouragement of sexual minority self-identification and disclosure regardless of HIV risk may result in greater self-efficacy toward being tested and in the adjustment to the HIV diagnosis should it occur (Earnshaw & Chaudior, 2009). The growing acceptance of same sex unions and the legalization of gay marriage in many states is a good example of how this type of change can progress through social and legislative action. The normalization of same sex unions may assist in reducing stigma, and since this study showed that gay people who were in relationships had higher social support than single gay people, supporting same sex relationships may result in better overall health for gay couples. HIV and AIDS were first identified in large coastal cities predominantly within gay communities (Klosinski, 2013). Over the last 30 years the disease has spread across wider populations and locations that present a broad range of economic, legislative and political, and socio-cultural challenges (Kaiser Family Foundation, 2013). Therefore, education and treatment strategies should occur in concert with the development of culturally tailored conceptual frameworks that are designed to describe these complex psychosocial phenomena (Earnshaw & Chaudoir, 2009).

The interaction of the social and cultural context for the individual living with HIV may vary considerably. An individual who comes from a collectivist culture may experience shame and embarrassment in disclosing to his or her family (Yoshioka & Schustack, 2001). Community involvement in terms of accepted sexual behavior may have a positive or negative influence, depending on the community (Sheon & Crosby, 2004). For example, the nondisclosing Black MSMW who is involved in a culture of clandestine sex may contribute to HIV transmission risk, and gay identifying men who

have a high number of gay friends may engage in higher sexual risk behavior (Mao et al., 2004; Milet et al., 2005). The HIV and AIDS treatment approach that treats the individual apart from his or her familial, cultural, and community context may not be optimal. Understanding the contextual environment may help to create a more directed approach in terms of disclosure and building support for individuals. Interventions based on these findings may help to inform families and communities on how to better assist their members who are living with HIV and AIDS. Many of the barriers to disclosure and support involve perceptions (particularly around stigma) that may or may not be accurate. Challenging and altering these perceptions may be simple to enact (public service announcements) and prove to be highly successful. Because common misconceptions about HIV and AIDS have not decreased, and visibility surrounding HIV and AIDS has decreased, more effort is required to raise awareness and address public attitudes and opinions (Kaiser Family Foundation, 2009).

Recommendations for Potential Research and Action

Because HIV prevention strategies and self-care are socially contextual and not solely the burden of the individual, community-based education and intervention programs, and contextual patient assessments might be more successful than focusing solely on the individual. For example, asking the HIV seropositive individual closed questions such as how many sex partners he or she has had and how often condoms were used, limits the potential response to numbers, excludes context, implies blame, and raises the potential for inaccurate responses. Asking the individual about the disclosure of HIV serostatus to his or her sex partners and others is more open-ended and may lead to

more depth of information about the individual and his or her sexual behavior. Asking the individual about sexual orientation disclosure and the perception of social support are also open-ended questions that may provide information about social context, support satisfaction, and the perception of stigma.

The results of this study are that the identification with a sexual minority group that has a history associated with HIV and AIDS is associated with a lower perception of HIV-related stigma. In the treatment setting, assessing the individual's sexual subgroup identification and the associated sexual behavior may be useful in terms of tailoring the type of support that is most appropriate (Young & Meyer, 2005). Since being a part of a sexual minority group may be related to having a greater connection with community and social networks, research on how the identification with subgroups relates to the psychosocial responses to a HIV or AIDS diagnosis is recommended. Furthermore, because the number of young heterosexual women living with HIV and AIDS is increasing (Quinn & Overbaugh, 2005), research into the psychosocial factors that are specific for this group is also recommended.

Most of the survey scales used in this study were short, simple to complete, and easy to score. The inclusion of scales that have been validated with different cultures, and measure items such as disclosure, social support, and stigma may help to provide unbiased information within the treatment setting. For example, Wright, Naar-King, Lam, Templin, and Frey (2007) tested a shortened version of the Berger et al. (2001) HIV stigma scale that was reliable and valid among a sample of predominantly African

American youth (16–25) that was the group with the largest number of new infections in 2010 (CDC, 2013).

Although research on HIV-related stigma and disclosure is expanding, HIV-related stigma continues to influence quality of life as well as health-related and sexual behavior of people living with HIV and their loved ones. Moreover, the nature of these issues has evolved considerably since the beginning of the AIDS epidemic (Earnshaw & Chaudoir, 2009; Smit et al., 2012). For example, the widespread use of methamphetamine within the gay community has complicated efforts to lower HIV and AIDS risk (Klosinski, 2013). Methamphetamine users frequently report high levels of internalized stigma that may be deleterious to mental health and conducive to substance abuse (Mak, Poon, Pun, & Cheung, 2007; Semple, Strathdee, Zians, & Patterson, 2012). For each community and subgroup, the impact of the psychosocial factors surrounding HIV and AIDS is different. Therefore, research must be conducted among various communities and include a range of implications including substance abuse, mental health issues, and sexual risk behavior.

Limitations

Because the sample consisted of mostly White (73.4%) gay (86.2%) men over age 50, the range of comparisons that could be made based on demographic factors was limited. The number of racial and ethnic minority study participants was too small to be used for the purpose of comparison. With the exception of social support, the survey measure scores were significantly higher for the gay male participants. However, because the number of female ($n = 10$), bisexual ($n = 10$), and heterosexual ($n = 9$) participants was

small, significant differences between the groups must be interpreted with caution. A further limitation is that the study was Internet based and only those individuals with access to the Internet were able to participate. Additionally, the location of the participants could not be ascertained. Therefore, low income and rural participants may not have been represented and conclusions could not be made according to location. However, since there was a relatively equal distribution of income levels across the sample, lack of variability in terms of income was not considered to be a limitation.

Since one or both parents were deceased for more than one third of the group (35.8%), the potential to make conclusions based on serostatus disclosure to parents was reduced. Because all of the study participants had disclosed serostatus to their health care provider, it was not possible to make conclusions based on nondisclosure to health care providers. In addition, although time since the initial diagnosis and sexual orientation disclosure both predicted HIV serostatus disclosure, most of the study participants were gay and had been seropositive for an average of 17 years. Therefore, comparisons with heterosexual participants, and those who had been seropositive for short periods of time were not possible. More than half of the respondent group was single ($n = 60$, 55%), however, 76 (69.7%) participants reported HIV serostatus disclosure to long-term partners and 33 (30.3%) participants reported never having a long-term partner. The discrepancy between the number of single participants and the number who reported having long-term relationships may be attributed to the unclear wording of the survey question about long-term relationships, and some of the participants may have included prior long-term relationships that have since ended.

Because the psychosocial factors that are associated with HIV and AIDS change over time, a study that only covers one point in time does not provide as broad a picture as a longitudinal study. Furthermore, because time since the initial HIV diagnosis was positively related to both sexual orientation disclosure and HIV serostatus disclosure, the newly diagnosed individual may have lower levels of disclosure than someone who has been seropositive for a longer period of time. As the individual adapts to the seropositive diagnosis over time, he or she may become more confident around self-disclosure (Zea et al., 2007). Therefore, longitudinal studies may be able to detect shifts in confidence, perception of stigma, and social support over time.

Conclusion

The interaction of the psychosocial factors involved in HIV and AIDS is complex and highly contextual. Prejudice, stereotyping, and discrimination contribute to levels of stigma that are experienced by HIV seropositive individuals and to the perpetuation of stigma by those around them (Earnshaw & Chaudior, 2009). In this study, stigma strongly interfered with the processes of self-disclosure and social support for individuals living with HIV. Additionally, the disclosure of sexual orientation was also strongly related to both HIV serostatus disclosure and social support. Therefore, identification with sexual minority status and the disclosure of sexual orientation may be beneficial in obtaining support and in encouraging the type of disclosure that promotes safer sex practices (Garcia et al., 2012).

HIV and AIDS related stigma has been associated with the gay community since the beginning of the epidemic (Klosinski, 2013) and the adaptation to HIV-related stigma

may be challenging for members of groups that have been subjected to HIV and AIDS related stereotypes, prejudice, and discrimination (Earnshaw & Chaudior, 2009; Lee et al., 2002; Lekas et al., 2006). The development of conceptual and theoretical frameworks around the psychosocial factors of disclosure, support, and stigma, how these may be measured in ways that are contextually applicable, and how this can be integrated into treatment is paramount in addressing disease transmission and individual health outcomes. Practically speaking, treatment planning may include brief assessments of disclosure, social support, and stigma. Cognitive behavioral interventions that target and reduce perceptions of stigma for the individual may also help increase social support and disclosure. In addition, group therapy tailored for individuals from similar backgrounds with similar experiences with stigma may result in higher self-efficacy in terms of disclosure and allow coping strategies and support to be shared among peers.

Over the long-term, public attitudes and opinions that stigmatize HIV and AIDS may be reduced through visibility and education that is tailored to the target audience. Televised public service announcements that address widely held misconceptions surrounding HIV and AIDS and in particular transmission risk may lead to a reduction in externalized stigma. Posters and billboards that relate to specific communities may address localized issues such as culture-bound stigma and community based high-risk sexual behavior. Furthermore, HIV prevention strategies require a balanced approach. Prevention strategies that place emphasis on the negative aspects of HIV as a deterrent to unsafe sex may inadvertently add to HIV-related stigma. Strategies that endorse the benefits of antiretroviral treatments for reducing viral load and potentially lowering

transmission risk to uninfected partners may also lead to lower HIV-related concern and higher levels of sexual risk that can result in the spread of other sexually transmitted diseases (CDC 2009b, Rodger et al., 2014).

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Appendix A: Study Participation Invitation

My name is James Minson and I am a student at Walden University. My study topic is the social influences that affect people living with HIV and AIDS. For example, because of social attitudes about HIV and AIDS, some people may not want to be open or talk to their family, friends, or acquaintances about being HIV positive. Because people living with HIV or AIDS often need support, the fear of being open may get in the way of reaching out for help. Some people may not receive proper health care because they are sensitive to negative reactions from healthcare workers. The fear of rejection may stop some people from telling their intimate partners that they are HIV positive. HIV and AIDS are most common among gay men, African Americans, and Latinos and issues of sexual and racial discrimination may also be involved. Because there are many social issues associated with HIV and AIDS, understanding these issues is an important part in finding solutions to these problems.

I am asking adults over the age of 18 with HIV or AIDS to fill out an online survey that will take about 20 minutes. The types of questions are about what kinds of support you have available to you, how you feel about living with HIV and stigma, how you cope with the challenges in your life, and whom you have told about being HIV positive. There are also some questions about your age, gender, ethnicity and race etc.

The survey is completely anonymous and your name or contact information will never be asked. There is no financial or other type of reward for taking the survey however you will be adding to the better understanding of the social issues around HIV and AIDS.

If you are interested in taking the survey please click on the link below for more information and directions to the survey. If you have any questions my contact information is included on the linked page.

Thank you for your time and consideration.

Appendix B: Consent Form

You are invited to take part in a research study of predictors of disclosure of HIV seropositive status. The researcher is inviting adults over age 18 who have tested seropositive for HIV and can read and write in English to be in the study. This form is part of a process called “informed consent” to allow you to understand this study before deciding whether to take part.

This study is being conducted by a researcher named James Minson, who is a doctoral student at Walden University.

Background Information:

The purpose of this study is to compare levels of disclosure of HIV seropositive status with a list of other factors in order to find out if any of these factors predict disclosure. The list of factors includes, perceived social support, perceived self-efficacy, perceived HIV stigma, age, length of time since testing seropositive for HIV, gender, sexual orientation, sexual orientation disclosure, education level, employment status, income level, relationship status, and ethnicity and race.

Procedures:

If you agree to be in this study, you will be asked to complete a survey that takes around 20 minutes.

Here are some sample questions:

How often is each of the following kinds support available to you if you need it?
Someone you can count on to listen to you when you need to talk.
None of the time, a little of the time, some of the time, most of the time, all of the time.

I can always manage to solve difficult problems if I try hard enough.
Not at all true, hardly true, moderately true, exactly true.

In many areas of my life, no one knows that I have HIV.
Strongly disagree, disagree, agree, strongly agree.

Who have you told that you are HIV positive? Mother, father, long-term partner, casual sex partner, healthcare provider, immediate family, extended family, friends, acquaintances, and colleagues.

Age, length of time since testing seropositive for HIV, gender, sexual orientation, sexual orientation disclosure, education level, employment status, income level, relationship status, and ethnicity and race.

Voluntary Nature of the Study:

This study is voluntary. If you decide to join the study, you can still change your mind during the survey. You may stop at any time before completing the survey.

Risks and Benefits of Being in the Study:

Being in this type of study involves some risk of the minor discomforts that can be encountered in daily life, such as becoming upset contemplating issues associated with being HIV seropositive. Being in this study would not pose risk to your safety or wellbeing.

Participating in this study will produce results that will add to the research on the social issues surrounding HIV and AIDS that may help to contribute to a better understanding of these issues. Raising awareness of the issues surrounding HIV and AIDS may help to promote a better social and healthcare environment for people living with HIV and AIDS.

Participants who encounter any issues related to this study may find counseling assistance in their area through the AIDS service organizations (ASOs) in the United States (<http://directory.poz.com/>). This national search engine created by Poz Magazine (2013) lists resources searchable by zip code, organization name, organization type, and by specific services provided and groups served. The HIV InSite (2013) from the University of California, San Francisco (<http://hivinsite.ucsf.edu/InSite?page=li-03-01>) lists databases and U.S. State and local HIV/AIDS service providers. The National AIDS Map (2013) contains an international resource database (<http://www.aidsmap.com/>).

Payment:

Participants are not paid or given any gifts for contributing to this study.

Privacy:

Any information you provide will be kept anonymous. The researcher will not use your personal information for any purposes outside of this research project. Also, the researcher will not include your name or anything else that could identify you in the study reports. Data will be kept secure by computer password protection and all study materials will be kept in a locked cabinet in a locked room. Data will be kept for a period of at least 5 years, as required by the university.

Contacts and Questions:

You may ask any questions you have now. Or if you have questions later, you may contact the researcher via phone, XXXX. If you want to talk privately about your rights as a participant, you can call Dr. Leilani Endicott. She is the Walden University representative who can discuss this with you. Her phone number is XXXX, extension XXXX. Walden University's approval number for this study is 07-05-13-0117455 and it expires on July 4, 2014.

Please print this consent form for your records.

Statement of Consent:

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By continuing with the survey, I understand that I am agreeing to the terms described above.

Appendix C: MOS Social Support Survey

Authorship citation: Sherbourne, C. D., & Stewart, A. L. (1991). The MOS social support survey. *Social Sciences & Medicine*, 32(6), 705-714.

People sometimes look to others for companionship, assistance, or other types of support. How often is each of the following kinds of support available to you if you need it? Circle one number on each line.

	None of the time	A little of the time	Some of the time	Most of the time	All of the time
Emotional/Informational Support					
Someone you can count on to listen to you when you need to talk	1	2	3	4	5
Someone to give you information to help you understand a situation	1	2	3	4	5
Someone to give you good advice about a crisis	1	2	3	4	5
Someone to confide in or talk to about yourself or your problems	1	2	3	4	5
Someone whose advice you really want	1	2	3	4	5
Someone to share your most private worries and fears with	1	2	3	4	5
Someone to turn to for suggestions about how to deal with a personal problem	1	2	3	4	5
Someone who understands your problems	1	2	3	4	5
Tangible support					
Someone to help you if you were confined to bed	1	2	3	4	5
Someone to take you to the doctor if you needed it	1	2	3	4	5
Someone to prepare your meals if you were unable to do it yourself	1	2	3	4	5

Someone to help with daily chores if you were sick	1	2	3	4	5
Affectionate support					
Someone who shows you love and affection	1	2	3	4	5
Someone to love and make you feel wanted	1	2	3	4	5
Someone who hugs you	1	2	3	4	5
Positive social interaction					
Someone to have a good time with	1	2	3	4	5
Someone to get together with for relaxation	1	2	3	4	5
Someone to do something enjoyable with	1	2	3	4	5
Additional item					
Someone to do things with to help you get your mind off things	1	2	3	4	5

How to score the survey

The survey consists of four separate social support subscales and an overall functional social support index. A higher score for an individual scale or for the overall support index indicates more support.

To obtain a score for each subscale, calculate the average of the scores for each item in the subscale.

To obtain an overall support index, calculate the average of (1) the scores for all 18 items included in the four subscales, and (2) the score for the one additional item (see last item in the survey).

Scale scores can be transformed to a 0 - 100 scale using the following formula:

$$100 \times \frac{(\text{observed score} - \text{minimum possible score})}{(\text{maximum possible score} - \text{minimum possible score})}$$

Appendix D: Generalized Self-Efficacy Scale

Authorship citation: Schwarzer, R., & Jerusalem, M. (1995). The generalized self-efficacy scale. In J. Weinman, S. Wright, & M. Johnston, *Measures in health psychology: A user's portfolio. Causal and control beliefs* (pp. 35-37). Windsor, UK: NFER-NELSON.

		Not at all true	Hardly true	Moderately true	Exactly true
1	I can always manage to solve difficult problems if I try hard enough.	1	2	3	4
2	If someone opposes me, I can find the means and ways to get what I want.	1	2	3	4
3	It is easy for me to stick to my aims and accomplish my goals.	1	2	3	4
4	I am confident that I could deal efficiently with unexpected events.	1	2	3	4
5	Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
6	I can solve most problems if I invest the necessary effort.	1	2	3	4
7	I can remain calm when facing difficulties because I can rely on my coping abilities.	1	2	3	4
8	When I am confronted with a problem, I can usually find several solutions.	1	2	3	4
9	If I am in trouble, I can usually think of a solution.	1	2	3	4
10	I can usually handle whatever comes my way.	1	2	3	4

How to score the survey

The score consists of the sum of all 10 items ranging from 10 up to 40. Recoding the scores is not required.

Appendix E: HIV Stigma Scale

Authorship citation: Berger, B., Ferrans, C. E., & Lashley, F. R. (2001). Measuring stigma in people with HIV: Psychometric assessment of the HIV stigma scale. *Research in Nursing and Health*, 24, 518-529.

This study asks about some of the social and emotional aspects of having HIV. For most of the questions, just circle the letters or numbers that go with your answer. There are no right or wrong answers. Feel free to write in comments as you go through the questions.

This first set of questions asks about some of your experiences, feelings, and opinions as to how people with HIV feel and how they are treated. Please do your best to answer each question.

For each item, circle your answer: Strongly disagree (SD), disagree (D), agree (A), or strongly agree (SA).

- | | | | | | |
|-----|---------------------------------------------------------------------|----|---|---|----|
| 1. | In many areas of my life, no one knows that I have HIV | SD | D | A | SA |
| 2. | I feel guilty because I have HIV | SD | D | A | SA |
| 3. | People's attitudes about HIV make me feel worse about myself..... | SD | D | A | SA |
| 4. | Telling someone I have HIV is risky | SD | D | A | SA |
| 5. | People with HIV lose their jobs when their employers find out | SD | D | A | SA |
| 6. | I work hard to keep my HIV a secret..... | SD | D | A | SA |
| 7. | I feel I am not as good a person as others because I have HIV | SD | D | A | SA |
| 8. | I never feel ashamed of having HIV | SD | D | A | SA |
| 9. | People with HIV are treated like outcasts | SD | D | A | SA |
| 10. | Most people believe that a person who has HIV is dirty | SD | D | A | SA |

- | | | | | | |
|-----|----------------------------------------------------------------------------------------------|----|---|---|----|
| 11. | It is easier to avoid new friendships than worry about telling someone that I have HIV | SD | D | A | SA |
| 12. | Having HIV makes me feel unclean | SD | D | A | SA |
| 13. | Since learning I have HIV, I feel set apart and isolated from the rest of the world | SD | D | A | SA |
| 14. | Most people think that a person with HIV is disgusting | SD | D | A | SA |
| 15. | Having HIV makes me feel that I'm a bad person | SD | D | A | SA |
| 16. | Most people with HIV are rejected when others find out | SD | D | A | SA |
| 17. | I am very careful who I tell that I have HIV | SD | D | A | SA |
| 18. | Some people who know I have HIV have grown more distant..... | SD | D | A | SA |
| 19. | Since learning I have HIV, I worry about people discriminating against me | SD | D | A | SA |
| 20. | Most people are uncomfortable around someone with HIV | SD | D | A | SA |
| 21. | I never feel the need to hide the fact that I have HIV | SD | D | A | SA |
| 22. | I worry that people may judge me when they learn I have HIV | SD | D | A | SA |
| 23. | Having HIV in my body is disgusting to me | SD | D | A | SA |

Many of the items in this next section assume that you have told other people that you have HIV, or that others know. This may not be true for you. If the item refers to something that has not actually happened to you, please imagine yourself in that situation. Then give your answer ("strongly disagree," "disagree," "agree," "strongly agree") based on how you think you would feel or how you think others would react to you.

- | | | |
|-----|------------------------------------------------------------------------------------------------------|-----------|
| 24. | I have been hurt by how people reacted to learning I have HIV | SD D A SA |
| 25. | I worry that people who know I have HIV will tell others | SD D A SA |
| 26. | I regret having told some people that I have HIV | SD D A SA |
| 27. | As a rule, telling others that I have HIV has been a mistake | SD D A SA |
| 28. | Some people avoid touching me once they know I have HIV | SD D A SA |
| 29. | People I care about stopped calling after learning I have HIV | SD D A SA |
| 30. | People have told me that getting HIV is what I deserve for how I lived my life | SD D A SA |
| 31. | Some people close to me are afraid others will reject them if it becomes known that I have HIV | SD D A SA |
| 32. | People don't want me around their children once they know I have HIV | SD D A SA |
| 33. | People have physically backed away from me when they learn I have HIV | SD D A SA |
| 34. | Some people act as though it's my fault I have HIV | SD D A SA |
| 35. | I have stopped socializing with some people because of their reactions to my having HIV | SD D A SA |
| 36. | I have lost friends by telling them I have HIV | SD D A SA |
| 37. | I have told people close to me to keep the fact that I have HIV a secret | SD D A SA |
| 38. | People who know I have HIV tend to ignore my good points | SD D A SA |
| 39. | People seem afraid of me once they learn I have HIV | SD D A SA |

Appendix F: HIV Serostatus Disclosure Questionnaire

Modified version of the original from: Stutterheim, S. E., Bos, A. E. R., Pryor, J. B., Brands, R., Liebregts, M., & Schaalma, H. P. (2011). Psychological and social correlated of HIV status disclosure: The significance of stigma visibility. *AIDS Education and Prevention*, 23(4), 382-392.

Who have you told that you are HIV positive?

Mother	Yes	No	Not Applicable		
Father	Yes	No	Not Applicable		
Long-term Partner	Yes	No	Not Applicable		
Casual Sex Partner	Yes	No	Not Applicable		
Health Care Provider	Yes	No	Not Applicable		
Immediate Family	Almost No One	Less Than Half	Around Half	More Than Half	Almost Everyone
Extended Family	Almost No One	Less Than Half	Around Half	More Than Half	Almost Everyone
Friends	Almost No One	Less Than Half	Around Half	More Than Half	Almost Everyone
Acquaintances	Almost No One	Less Than Half	Around Half	More Than Half	Almost Everyone
Colleagues	Almost No One	Less Than Half	Around Half	More Than Half	Almost Everyone

Items are scored as follows:

Yes = 1

No = 0

Almost No One = 1

Less Than Half = 2

Around Half = 3

More Than Half = 4

Almost Everyone = 5

The minimum possible score is 5 and the maximum possible score is 30.

Appendix G: Personal Information Questionnaire

Please write your age and the amount of time it has been since you first tested HIV positive. Check all of the following that apply. If you check *straight* on number 4, please skip number 5 and go to number 6.

1	How old are you?	Years					
2	How long has it been since you were diagnosed with HIV?	Years	Months	Weeks			
3	Are you	Male	Female				
4	Are you	Gay	Bisexual	Straight			
5	If you are gay or bisexual, are you	Out To Friends	Out To Family	Out At work	Not out		
6	What is your level of education?	No Diploma	High School	Some College	College or Undergraduate	Post Graduate	
7	Are you	Student	Employed	Unemployed	Self-Employed	Disabled	Retired
8	Is your income	Less than 25,000 \$US	25,000 to 50,000 \$US	More than 50,000 \$US			
9	Are you	In a Committed Relationship	In an Open Relationship	Single			
10	Are you (choose all that apply)	Hispanic Latino	A person of Cuban, Mexican, Puerto Rican, South or Central American, or other Spanish culture or origin, regardless of race.				
		Non Hispanic Latino					
		American Indian Alaska Native	A person having origins in any of the original peoples of North and South America.				
		Asian	A person having origins in any peoples of the Far East, Southeast Asia, or the Indian Islands, Thailand and Vietnam.				
		Black African American	A person having origins in any of the black racial groups of Africa.				
		Native Hawaiian Other Pacific	A person having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.				

		Islander	
		White	A person having origins in any of the original peoples of Europe, the Middle East, or North Africa.
		Two or more races	You identify with more than one race category.
		Other	You do not identify with a specific race category.
		Unknown	

Appendix H: Letter of Permission to Use the HIV Stigma Scale

E-mail received from Barbara Berger on June 11 2013.

Hi, James --

I am attaching electronic copies of the HIV Stigma Scale and scoring instructions. You will notice that there are tiny numbers on the far right of each item in the scale -- these indicate which subscale(s) that item contributes to when calculating the subscale scores. However, I do recommend removing the tiny numbers from any version given to research participants since some people may find them confusing or puzzling.

If you find that the Berger HIV Stigma Scale fits your research plans, you have my permission to use it for research purposes. In that case, please use this citation in referencing the instrument:

Berger, B, Ferrans, CE, & Lashley, FR. (2001). Measuring stigma in people with HIV: Psychometric assessment of the HIV stigma scale. *Research in Nursing and Health*, 24, 518-529.

Thank you for your interest in the Berger HIV Stigma Scale, and best wishes on your research --

Barb Berger

Appendix I: Letter of Permission to Use the HIV Seropositive Status Disclosure

Questionnaire

E-mail received from Sarah Stutterheim on January 11 2013.

Hi James,

Thanks for your email. It sounds like you have an exciting project. I am enclosing a bunch of stuff that may be relevant to your study, including the survey that we used for that stigma visibility study in a Word doc so that you can copy it easily. The visibility question is in section A while the disclosure items are in section C and the stigma items in D. The remainder of the survey measures a number of other things including stigma manifestations, psychological distress, coping, self esteem, and social comparison. A summary of the measures is in the second attachment. Feel free to use whatever you need as long as you cite accordingly.

I am sending you the papers I bundled for my dissertation. These may or may not be helpful. Lastly, I am sending you my dissertation as the intro and discussion may be useful in terms of background and theory relating to stigma. The chapters in between are the articles.

Good luck and please send me your published works and dissertation whenever you're done. J

Sarah

Curriculum Vitae

James A. Minson, MA

Education:

PhD In Progress in Health Psychology Expected 2014

Walden University, Minneapolis, Minnesota

MA in Psychology, Mental Health Counseling and Art Therapy 2005

Antioch University, Seattle, Washington

MFA in Design 1989

Tama Art University, Tokyo, Japan

BA in Visual Art 1984

Sydney College of the Arts, University of Sydney, Australia

Relevant Professional Experience:

University of Washington, Seattle, Washington 2012 to Present

Lecturer