THE IMPACT OF MENTAL HEALTH, SEXUAL DESIRE, AND SEXUAL IMPORTANCE ON THE SEXUAL BEHAVIOR OF WOMEN WITH HIV

DISSERTATION

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ABSTRACT

HIV infection is increasing among women in the United States, particularly among racial minority groups. Risky sexual contact is the primary mode of contracting this disease for women. Traditionally, theories of women’s sexuality have focused on the biological basis of sexual behavior. These theories often failed to consider the social and cultural contexts in which sexual behavior occurs. This research study was based in the more recent emphasis on social constructionist theories of sexuality. The hypothesized theoretical model considered the extent to which indicators of mental health, sexual desire, and sexual importance would predict whether sexual behavior would occur for a sample of 96 women with HIV. The results of this study supported previous findings that depression significantly decreases the chances that sexual behavior will occur, while sexual desire and sexual importance moderately increased the chance occurrence of this variable.

The results of this study suggested that the mental health of women with HIV significantly affects whether they engage in sexual behavior. However, other aspects of sexual relationships that may also significantly impact sexual behavior were not examined. In order to achieve or to maintain emotional closeness with a partner, some women may engage in sexual behavior in the absence of sexual desire. Given this, one would suspect that the relationships between sexual desire, mental health, and sexual
behavior may not always be clearly defined. HIV prevention and intervention models need to be more inclusive of those factors that are most salient in the sexual relationships of women. Clinicians can help women with HIV to develop personalized strategies of safer sex that do not impede sexual or relationship satisfaction, after accounting for their mental health status and assessing their actual need for sexual behavior. Moreover, additional research is needed to examine the importance of maintaining sexual behavior for women with HIV.
Dedicated to the strength and vitality of women around the world.
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CHAPTER 1

INTRODUCTION

History of HIV and AIDS in the United States

On June 5, 1981, the Centers for Disease Control and Prevention printed its first report on AIDS in the inaugural edition of the Morbidity and Mortality Weekly Report (Gottlieb, Schanker, Fam, Saxon, Weisman, & Pozalski, 1981). Five self-identified homosexual men, between the ages of 29 and 36, presented for treatment of pneumocystis carinii pneumonia (PCP) in California. All of the men had received appropriate treatment, but two men still died within one month of their presentation. The authors noted that PCP was a rare condition that occurred only among people with severely suppressed immune systems. In an editorial note at the end of this brief report, Gottlieb and colleagues (1981) posited that “the fact that these patients were all homosexuals suggests an association between some aspect of a homosexual lifestyle or disease acquired through sexual contact and pneumocystis pneumonia in this population” (p. 251).

By January 1983, the CDC had published several similar reports of immunodeficiency among hemophiliacs, recipients of blood transfusions, intravenous drug users, Haitian immigrants, heterosexual females, and infants. Yet, the newly named acquired immunodeficiency syndrome (AIDS) was still primarily affecting homosexual
men in this burgeoning epidemic. In March of 1983, the CDC estimated that 1,200 cases of AIDS had been identified across the United States, with 450 deaths from the disease. Researchers stated that “available data suggest that the severe disorder of immune regulation underlying AIDS is caused by a transmissible agent” (CDC, 1983, p. 101). The possible routes of transmission were identified as sexual contact, blood products, and mother-to-infant contact.

This underlying cause of AIDS was identified by researchers as a retrovirus known as T-lymphotropic retrovirus (HTLV-III) that was etiologically linked to AIDS by antibodies (CDC, 1984). Although a formal diagnostic test did not exist at that time, researchers had identified several potential groups of people at risk for transmitting the virus and recommended several measures to prevent exposure to this virus. By 1986, antibody blood testing had begun, and further laboratory investigation led to the renaming of the aforementioned retrovirus as the human immunodeficiency virus or HIV. Despite the availability of HIV antibody testing, formalized screening of blood products, and the distribution of educational materials, the estimated number of people infected with HIV continued to increase dramatically through the last two decades of the twentieth century.

Women and HIV

Although in the United States men who have sex with men still constitute a majority of AIDS and HIV infection cases, the cumulative cases in women are increasing. The CDC (2003) estimated 170,679 cases of AIDS and 63,740 cases of HIV infection, respectively, among women. Women between the ages of 20 and 44 represent the majority of reported HIV and AIDS cases among women (CDC, 2003); in addition, African American women now account for 68% of the newly diagnosed cases of HIV
among women. The CDC (2003) reported that 45% of infected women contracted the virus through heterosexual behavior, while 18% contracted HIV through intravenous drug use; however, 36% of women were unable to identify any known risk factors for infection.

As increasing numbers of women are living with HIV and AIDS, the outlook for treatment and survival is changing rapidly. This also means women must face new challenges associated with HIV, including conceptualizing and negotiating healthy sexual relationships.

Statement of the Problem

Sexuality is both a personal and sociocultural construct, in that attitudes and behaviors may be influenced by intrapersonal factors as well as societal norms and cultural expectations for women. Given that heterosexual behavior is the primary mode of contracting HIV for women, there is an increased need for prevention and intervention strategies to address the sexuality and sexual behaviors of women. However, the sexual behavior of women with HIV has not been comprehensively examined.

Prior research on the associations between HIV and sexuality has primarily focused on pharmacological factors, with largely male, homosexual samples (Colson, Keller, Sax, et al., 2002; Lallemand, Salhi, Linard et al., 2002; Lamba, Goldmeier, Mackie, & Scullard, 2004; Maticka-Tyndale, Adam, & Cohen, 2002). For example, Lamba and colleagues (2004) reported that men with HIV experienced less sexual desire and more erectile dysfunction compared to men without HIV and those of unknown serostatus. In addition, the researchers reported that HIV-positive men who participated in highly active antiretroviral therapy (HAART) experienced lower levels of sexual
desire than men who were not receiving this drug regimen. Erectile dysfunction, decreased libido, and premature ejaculation was reported by the majority of a sample of HIV positive, homosexual men receiving HAART, as reported by Lallemand and colleagues (2002). Both of these studies suggested that drug regimens that have been successful in extending the quantity of life for patients with HIV may be negatively affecting the quality of their sexual lives.

Previous research on HIV-positive women’s sexual health has indicated that sexual intimacy is intertwined with health status, relationship status, and mental health (Adam & Sears, 1996; Maticka-Tyndale, et al., 2002). For example, in a qualitative study of persons infected with HIV, Adam and Sears (1996) reported that HIV-positive women in relationships associated sex with guilt and anxiety over possibly infecting their partners. Women from a qualitative study conducted by Myticka-Tyndale and colleagues (2002) reported a loss of sexual desire immediately following their HIV diagnosis. In addition, these researchers found that women who were not in an intimate relationship expressed anxiety related to the disclosure of their illness to potential partners, the possibilities of celibacy, and loss of reproductive fulfillment. The possibility of negative consequences related to disclosure of a positive HIV status to sexual partners was linked to decrease in sexual behavior and unwillingness to engage in new relationships.

Routine expressions of sexual intimacy for women with HIV may be adversely affected by the various psychosocial factors of the disease (Adam & Sears, 1996), such as guilt, anxiety, and social stigma. The aforementioned research suggests that women’s mental health significantly impacts their ability to maintain sexual relationships. In addition, physical health and mental health are intricately associated with women’s
attitudes and beliefs about engaging in healthy, intimate relationships following an HIV
diagnosis.

Purpose of the Study

Wingood, Sionean, and McCree (2002) posited that “understanding sexual and
reproductive health requires a multifaceted examination of psychosocial, emotional, and
medical aspects of women’s sexuality” (p. 4). HIV predominantly affects women in their
childbearing years, and those who are most likely to be sexual active. The importance of
maintaining an active sex life may be significantly impacted by an HIV diagnosis.

Women who are struggling to cope with the physiological aspects of this disease may
have little time to think about their sexuality. The purpose of this study was to examine
contextual factors that impact the sexual behavior of women with HIV, including mental
health and sexual desire. Traditionally, problems with sexuality have been clinically
defined as deviations from the norm, behavioral or physiological, and there has been little
consideration of the intrapersonal factors that may contribute to women’s sexuality
(Kleinplatz, 2001). Furthermore, few studies have considered the impact of sexual
importance on the desire to be sexual or subsequent sexual behavior.

The goal of the research was to comprehensively examine the relationships
among mental health, sexual desire, and sexual behavior for women with HIV. Extant
literature suggests a complicated relationship among mental health, sexual desire, and
sexual behavior. In this study, contextual factors which most significantly impact a
woman’s sexual behavior were examined. For the purpose of this study, sexual behavior
was considered an outcome variable and mental health, sexual desire, and sexual
importance were considered as contextual factors that may impact facets of sexual
behavior such as frequency and risk. In order to address this research objective, two models of sexuality were tested. A review of the pertinent literature, as well as an explanation of the theoretical basis for the proposed research, will be presented in the next chapter. The hypothesized theoretical model is also presented.
Prior research regarding women’s mental health and their sexual behavior has focused on their interpersonal relationships; findings have suggested that the desire to achieve relationship satisfaction and to maintain relationship stability may be significantly related to sexual desire. However, women may still engage in unwanted sexual behavior in order to achieve these goals. Given this, one would suspect that the relationship between sexual desire, mental health, and sexual behavior may not always be defined clearly. In addition, intrapersonal aspects of mental health must also be considered.

Sexual Desire

A comprehensive definition of women’s sexual desire would suggest that sexual feelings should be viewed within a biopsychosocial context in order to truly define and understand the presence of pathology in sexual behavior. For this study, Levine’s (2003) definition of sexual desire, a composite of drive, motivation, and wish, was used. However, numerous conceptualizations of this construct exist. The DSM-IV defined hypoactive sexual desire (HSD) as a chronic and recurrent absence of sexual desire or
sexual fantasies (American Psychological Association, 2000). According to Basson (2000), this conceptualization is biologically based and "relies heavily on the traditional human sex response cycle" (p. 52) ignoring the non-biological aspects of sexual desire that are important to women, such as trust, intimacy, and respect. Basson suggested that sexual desire may be a response to sexual cues rather than a spontaneous, biologically-driven event, while Levine (2002) defined sexual desire as “the sum of forces that incline us towards and away from sexual behaviors” (p. 47). The common theme among each of these conceptualizations is that sexual desire is a construct used to explain the complex relationship between biological, psychological, and social forces.

Historically, women have been characterized as having little desire for sexual behavior. For example, Acton (1857; cited in Baumeister, Catanese, & Vohs, 2001) stated that “the majority of women (happily for society) are not very much troubled with sexual feeling of any kind” (p. 163). More recently, Crooks and Baur (1999) posited that “a long-standing assumption in many Western societies is the mistaken belief that women are inherently less sexually inclined than men” (p. 68). Research conducted by Kane and Schippers (1996) suggested that some men and women may agree with these polarized views of sexual desire. In their survey of 453 men and women, the researchers found that men and women perceived sex drive to be stronger among males than females. However, there were discrepancies regarding the origins of the perceived difference. For example, a greater percentage of men (58.2%) attributed differences in male and female sex drives to natural origins, compared to 50.8% of women. In addition, more women (49.2%) believed that differences in male and female sexual drives were based on social variables than men (41.8%).
In general, levels of sexual desire among women have been reported as lower than those of men (Heiman, 2002; Hurlbert & Apt, 1994; Laumann, Paik, & Rosen, 1999). Findings from a national study regarding the prevalence and predictors of sexual dysfunction conducted by Laumann and colleagues (1999) provided baseline prevalence rates of inhibited sexual desire among a national probability sample of 1410 men and 1749 women. Participants were asked to indicate the presence of seven symptoms in the past year, such as a lack of desire for sex and problems with arousal. The symptoms on this author-derived survey were indicative of a DSM-IV classification of hypoactive sexual desire. These researchers reported that 22% of women in their sample had experienced low sexual desire, compared to 5% of men. Low sexual desire was more prevalent among single women (35%) than married women (29%).

Mental Health and Sexual Desire

Several researchers have previously documented that mental health affects sexual desire (Frohlich & Meston, 2002; Laumann et al., 1999; O'Sullivan & Allgeier, 1998; Ravart, Trudel, Marchand, Turgeon, & Aubin, 1996; Tiefer, Hall, & Tavris, 2002). Laumann and colleagues (1999) linked low feelings of general happiness to lower sexual desire; depression and anxiety have also been implicated as correlates of low sexual desire in several other studies (Frohlich & Meston, 2002; Ravart et al., 1996; Tiefer et al., 2002). For example, in a study of 74 women diagnosed with hypoactive sexual desire (HSD), 21.6% attributed their difficulties to a depressive state and 40.5% of women reported anxiety and stress as possible causes of their HSD (Ravart et al., 1996). Anxiety, specifically related to sexual performance was also reported by more than 30% of these women. Tiefer and colleagues (2002) asserted that some women may express a "fear of
sexual acts or their possible consequences" (p. 230), and experience inhibited sexual desire as a result.

In addition to depression and anxiety, self-esteem and self-image have also been found to be related to sexual desire (Hartman, Heiser, Ruffer-Hesse, & Kloth, 2002; O'Sullivan & Allgeier, 1998; Ravart, Trudel, Marchand, Turgeon, & Aubin, 1996). For example, Ravart and colleagues (1996) found 45.6% of women diagnosed with HSD reported the presence of negative thoughts regarding their physical attractiveness and self-image during sexual intercourse, and 21.6% of women reported the presence of negative thoughts regarding self-esteem. Participating in sexual activities despite the presence of low sexual desire may also result in negative emotional outcomes for women. For instance, in a study of 40 women, O'Sullivan and Allgeier (1998) found that 35% reported feelings of emotional discomfort (e.g. feeling disappointed in oneself or feeling uncomfortable about engaging in meaningless sex) after engaging in unwanted, consensual sex. Hartman and colleagues (2002) also reported that women who were treated for hypoactive sexual desire disorder had a higher rate of worry, anxiety, and lower self-esteem than women without treatment.

Prior research has suggested that women with HIV report higher rates of depression, compared to HIV-positive men. For example, in a study of 43 men and 37 women diagnosed with HIV, Budin and colleagues (2004) found that women were more likely to be diagnosed with major depressive disorder (43.2%) than men (16.3%). Similarly, Cook and colleagues (2004) reported that 47% of the HIV-positive women in their study exceeded clinical cutoffs for depressive symptoms. In a study of 83 men and women with HIV, aged fifty years and older, Heckman and colleagues (2002) reported
that 33% of the total sample reported symptoms of mild depression, 21% reported moderate depression, and 4% reported severe depression. However, the authors found no significant differences in symptomatology between men and women.

There has been little research regarding the relationship between mental health and sexual desire for women who are HIV positive. Bova and Durante (2003) examined 101 women with HIV, and found a positive correlation between mental health and sexual desire. In addition, half of the women (51%) indicated that their HIV diagnosis had not contributed to a decreased interest in sex. The authors concluded that the presence of a chronic illness may not have debilitating effects on sexual desire. This contradicts conclusions by Benbow and Jagus (2003), as well as Cook (2000), whose research suggested that chronic illness may indirectly impact sexual desire by increasing levels of depressive symptoms.

Mental Health and Sexual Behavior

For the purposes of this study, sexual behavior was defined as the frequency engaging in partnered sexual activities. Cyranowski and colleagues (2004) examined the relationship between life depression history and frequency of engaging in sexual behavior among 914 women in midlife. The women were divided into three groups, based upon their reported histories of major depressive disorder (MDD): never depressed, single episode MDD, and recurrent MDD. The researchers hypothesized that women with a history of MDD would report lower frequencies of engaging in partnered sexual behavior. Furthermore, they hypothesized that women with a history of recurrent MDD would experience the lowest frequency of engaging in partnered sexual behavior, even when controlling for differences in current symptoms. These hypotheses were not
supported. Results indicated that frequency of engaging in sexual behavior did not differ significantly by MDD history groups, as 80.5% of the entire sample reported participation in partnered sexual behavior in the past six months. Given these results, the researchers suggested that the behavioral preferences of the sexual partner and the couples established sexual habits may mediate the relationship between mental health and frequency of sexual behavior.

Cook (2000) identified barriers to healthy sexual expression for people with psychiatric disabilities. The identified barriers included lack of privacy; history of childhood and/or adult abuse and trauma; social stigma; low self-esteem and self-confidence; decreased sexual desire; psychiatric symptoms that inhibit the formation of intimate relationships; and, a lack of support and advocacy from service providers. The author suggested that disclosure of comorbid conditions (e.g., mental health problems and HIV) is a difficult task for this population, and that “consumers living with HIV may thus face a ‘double whammy’ of discrimination in accessing needed services and supports” (p. 203).

In addition, Cook (2000) suggested that mental health may influence involvement in risky sexual behaviors. This researcher reviewed a set of studies regarding sexual activities among men and women diagnosed with a severe mental illness, and found that 66% to 75% of those surveyed reported a lack of condom use; however, no information on gender differences was reported. In contrast, the reported rates of engaging in protected sexual activities have been found to be slightly lower for women with HIV. For example, in a study of 101 women diagnosed with HIV, Bova and Durante (2003) reported that 51% of the women reported using condoms each time they engaged in
sexual behavior, 25.4% never used condoms, and 37% reportedly used no methods of safer sex. These researchers also reported that sexual functioning was not related to using condoms or practicing other methods of safer sex.

Bova and Durante (2003) also connected mental health to the sexual behavior of women with HIV. For example, 42% of the women involved in the study were sexually active. The majority (90%) of women in the study reported continuation with sexual behavior after receiving their diagnosis, and 58% had been sexually active in the past month. Moreover, 54% reported no decrease in sexual frequency. Sexual functioning, which included sexual frequency, was positively correlated with better mental health, positive illness meaning, and less severe HIV symptomatology. According to the authors, a small percentage of those women who were not sexually active attributed depression to their lack of sexual behavior; however, exact percentages were not provided.

Sexual Importance

Hurlbert and colleagues (2000) explored the connection between sexual motivation and sexual desire among women who were clinically diagnosed with hypoactive sexual desire (HSD). However, the exclusionary criteria included the presence of a physical illness that may negatively impact sexual desire. The researchers hypothesized that “sexual motivation and sexual desire may not be only separate constructs but also distinct phases in the human sexual response cycle that may lead one to engage in or avoid sexual behavior” (p. 326). The results of the study indicated support for this hypothesis, as sexual motivation mediated the relationship between sexual desire and sexual behavior. These researchers concluded that a woman’s desire to have sex, and her motivation to do so, are deeply connected. Furthermore, a woman’s motivation to
have sex, as well as her level of sexual desire, may ultimately impact the decision to be sexually active. However, the importance of engaging in sexual behavior was not explicitly examined.

In this study, sexual importance was defined as the emotional and relational emphasis placed on engaging in sexual behaviors. This definition was based on the findings of previous research regarding sexual decision-making conducted (Christopher & Cate, 1984; Leigh, 1989). In a study of men and women regarding their reasons for engaging in sexual behavior, Christopher and Cate (1984) reported that women placed greater importance on expressing love, affection, and commitment through sexual behavior than men; in contrast, men were more likely to place an emphasis on the importance of physical gratification than women. Similar results were reported by Leigh (1989) in a study of reasons for having sex. This researcher found that women placed more importance on expressing emotional closeness, while men placed an emphasis on physical pleasure and relief of tension.

Both of the aforementioned studies suggested that the motivations or reasons for having sex are closely connected to the importance placed on different aspects of sexual relationships. In addition, women engaged in sexual behavior as a means of maintaining emotional and relational closeness with their partners. Clearly, these studies demonstrated that women viewed engaging in sexual behavior to be an important manifestation of love and affection in their relationships.

Levine (2003) asserted that “the psychological motivation to behave sexually can be quickly neutralized by an acute serious illness or serious chronic illness” (p. 282). Although not specifically mentioned, one can assume that women with HIV may
experience changes in their sexual motivation, which could inhibit their desire to participate in sexual behavior. Moreover, the importance placed on sex and intimacy in relationships may be closely connected to participation is sexual behaviors. However, few of the studies on the importance of sex have focused specifically on women with HIV.

For example, Knight and colleagues (2005) examined the connection between sexual importance and risk-taking behaviors of 82 male and 72 female intravenous drug users diagnosed with HIV. Participants in serodiscordant relationships reported that “the desire to create and preserve emotional and sexual intimacy often presented a barrier to safer sex” (p. 80). Moreover, the participants reported experiencing high levels of predictability in their sexual relationships, and a renewed interest in relationship monogamy and stability.

The authors of the aforementioned study suggested that sexual risk-taking behavior was closely connected to the importance placed on maintaining a sexually intimate relationship. However, there was no attempt to explore gender differences in sexual importance. The proposed will build upon the work of Knight and colleagues (2005) by examining the role of sexual importance of sex in the lives of women with HIV, in relation to mental health, sexual desire, and sexual behavior.

Theories of Sexual Behavior

Theories regarding diverse aspects of sexuality, including sexual behavior, are traditionally divided into two groups: essentialist and constructionist. According to DeLamater and Shibley (1998), essentialism has been “used loosely to refer to research and theory presuming a biological basis – usually a biological determination – of sexual
behavior” (p. 11). A brief comparison and contrast of these two sets of theories is provided in this section.

Sociobiological theory is an essentialist theory largely based on principles of reproductive fitness (Buss, 1994; Schwartz & Rutter, 1998). According to this perspective, human sexual behavior is based on an “innate, genetically triggered impulse to pass on genetic material through successful reproduction” (Schwartz & Rutter, 1998, p. 10). This theory suggests that women have a weaker drive to engage in sexual behavior because their primary evolutionary concern is to select a mate who will protect their offspring and provide a secure intimate relationship. Thus, women would be more likely to seek a monogamous relationship, and to not participate in sexual behavior that does not serve the procreative purpose. Comparatively, men are theorized to seek to maximize the number of offspring they produce in the world by having more sexual partners, which implies that men have a stronger drive to engage in sexual behavior.

Buss (1994) suggested that men and women have developed sexual strategies to aid in mate selection that are congruent with their evolutionary desires for sexual behavior. His theory assumes that individuals have specific sexual goals that serve as the motivations for expending the resources of time, money, and energy. The goals of sexual behavior may include sexual satisfaction, physical pleasure, getting married, having children, and having an exclusive relationship. Certain types of human capital may also affect the pursuit of sexual goals. For example, Wiederman (2000) reported that women with lower sexual self-esteem are less likely to experience sexual satisfaction and have higher levels of body image self-consciousness. A woman who is highly self-conscious of her body and her sexual skills may not be able to attract a suitable sexual partner or be
able to adequately satisfy her partner sexually. Other types of human capital that may affect the pursuit of sexual goals include age, personal income, mental health status, physical health, and having children.

In contrast, social constructionist theories focus on the sociocultural aspects of sexuality. According to this set of theories, environment cues that shape human sexual behavior are always present, such as customs, values, and expectations about sexuality (Schwartz & Rutter, 1998). For example, script theory (Gagnon & Simon, 1973) can be used to explain sexual content in terms of social and cultural processes. These processes determine what is considered to be sexual and how humans construct their sexual experiences. Scripting theory operates with four basic assumptions. First, it is assumed that sexual conduct patterns are derived from the local culture. Second, it is assumed that human beings have no biological instincts about sexual behaviors. Third, the lifelong process of acculturation is responsible for the acquisition of the patterns for sexual conduct. Fourth, it is assumed that people may make minor modifications to their culture’s sexual scripts. The purposes of sexual scripts are to specify with whom to have sex, when to have sex, where to have sex, what to do sexually and why sexual events should happen. The individual sexual actors and those who create representations of sexual life reproduce and transform sexuality in a society. There are three types of scripts. Cultural scripts provide the instructions for all conduct dependent upon the cultural norms. Interpersonal scripts guide the everyday patterns of interactions between two people. Intrapsychic scripts dictate how individual should reflect on past, current, and future sexual conduct.
While script and sociobiological theory both focus on how individuals decide to behave sexually, network theory focuses more on the sexual relationship (dyad). Sexual behavior is a social phenomenon and network theory proposes three implications of this fact. First, sexual partnerships are expected to conform to certain regularities present in more general social relationships. These regularities explain whom individuals partner with, how they maintain the partnership, and why partnerships dissolve. Most sexual partnerships tend towards homogeneity, meaning that partners display similar social characteristics, such as age, race, and level of education. People are more likely to interact with others who are similar to them in order to reinforce self-identity, validate behaviors and attitudes, and to share common interests.

A second implication of network theory is that because sexual behavior occurs in the context of a relationship, the features of that social relationship dictate what behaviors will occur. The features of a sexual relationship include the nature of the exchanges between partners (e.g. division of household chores), the way the relationship is socially defined and perceived by partners, and the typologies of the individuals in the partnership. The third implication is that sexual relationships exist in the context of larger social networks. The external social networks influence the sexual behaviors of the couple, which in turn influence the social networks.

Symbolic interactionism (SI) is useful in trying to explain the process of socialization and personality development, as well as how these two concepts interact. There are three major themes of symbolic interactionism (LaRossa & Reitzes, 1993). The first theme deals with the meanings of human behavior. According to SI, humans act toward objects on the basis of the meanings of those objects have for them. The meanings
of objects arise in the process of interaction between people. Interpretation provides a method of handling and modifying the meanings assigned to the objects. Because humans live in a symbolic environment, they acquire a complex set of symbols which they arrange in a hierarchy of value.

The second major theme of symbolic interactionism deals with the development and importance of the self-concept. Humans have a thoroughly active and social self, although we are not born with it. The process of introspection allows humans to develop a definition of their self. Once this self-definition is achieved, this becomes the prime motivation for all behaviors.

The third major theme asserts that individuals and small groups are influenced by the larger context so that behavior is constrained by norms and values. Through social interactions, humans work out the details of social structure. According to this theory, society precedes the individual. That is, the individual cannot exist without the society; conversely, society really has no purpose without the individual.

Summary

Each of these theories can be used to understand certain aspects of sexual behavior. Although network theory focuses on the properties of the sexual dyad, script theory and sociobiological theory are also needed to understand the motivations of individuals in a relationship. Sociobiological theory compliments network theory in that the perceived costs and benefits expected by an individual will determine the length and kind of exchanges within the relationship. Once the costs outweigh the benefits, exchanges will lessen, and the relationship may dissolve. How individuals decide whether an activity or consequence is a cost or a benefit can be influenced by their
culture, societal norms, and personological factors, essentially linking scripting, choice, and network theories to most of the sexual activities, expectations and behavior of individuals.

Recently, Rollins (1996) posited a definition of cultural essentialism as “the point of view that women and men do differ because of socialization” (p. 8). Drive theory and choice theory both consider the biological motivations that men and women have for sexual behavior. However, choice theory does consider the cultural ramifications of engaging in sexual behavior. A HIV seropositive status is one type of human capital that may negatively influence a woman’s desire to engage in sexual behavior. For women who are HIV positive, they must balance their needs for sexual behavior with issues such as stigma and disclosure. Additionally, the biological drive for sexual behavior may displaced by mental and physical health needs.

Proposed Theoretical Model

For the purposes of this study, a constructionist theoretical model was formulated. Previous research has suggested that mental health variables, such as depression and anxiety, are correlated with women’s sexual desire (Frohlich & Meston, 2002; Laumann et al., 1999; O'Sullivan & Allgeier, 1998; Ravart et al., 1996; Tiefer et al., 2002). However, the relationship between mental health and sexual behavior has not been clearly established. The research tested the impact of mental health, sexual desire, and sexual importance on sexual behavior for women with HIV using two models.

The first model, depicted in Figure 1, theorizes that mental health and sexual desire are significantly associated, and will predict the probability that HIV-positive women will engage in sexual behavior.
The reviewed literature also suggested consideration of a possible mediating variable in the relationships among mental health, sexual desire, and sexual behavior: sexual importance. This construct has not been thoroughly examined, but has been implicated as playing a significant role in the sexual risk-taking behaviors among men and women with HIV. Therefore, the research also tested an alternate model, depicted in Figure 2, which considered the added effect of sexual importance on sexual behavior for women with HIV.

Figure 1: Primary theoretical model

Figure 2: Alternate theoretical model
Participants for this research were part of a larger, longitudinal investigation funded by a grant from the National Institute of Mental Health awarded to the researcher’s advisor (R01MH62293; PI: Dr. Julianne Serovich). The overall purpose of this longitudinal project, conducted from 2001 to 2006, was to investigate disclosure of HIV serostatus for women with HIV and its impact on indicators of mental health and social support. During each year of the study, participants completed paper and pencil measures, as well as an interview, during phases 1, 3, 5, and 7 of the project. In addition, participants completed a paper and pencil measures every six months (phases 2, 4, and 6). Women who completed all phases of the study accumulated seven points of data collection. Women were compensated at each phase of the project, and earned a total of $260 for completing the entire study.

Sampling Design

Eligibility. The eligibility criteria for this study were the same as the parent study. All participants were adult women with an HIV diagnosis, over the age of 18, with no reported experiences of dementia-related symptoms.
Recruitment. Participants originated from the pool of eligible women of the parent study. All women in the parent study were primarily recruited through established AIDS service organizations (ASOs) and medical facilities in Columbus, Cincinnati, and Cleveland. The medical facilities in Columbus included the AIDS Clinical Trials Unit at The Ohio State University Medical Center, and the Family and Child Educational Services clinic at Columbus Children’s Hospital. ASOs which served as recruitment sites included the Columbus AIDS Task Force, the AIDS Task Force of Greater Cleveland, the AGAPE program of Antioch Baptist Church (Cleveland), the Early Prevention and Intervention Program (Cincinnati), and AIDS Volunteers of Cincinnati. Women were given a summary of the parent study by either a research nurse or case manager which described the project aims, requirements, and procedures. All participation was voluntary and refusal to participate or dropping out of the study did not hinder availability to treatment or services at any of the recruitment locations.

Research site. A private office suite on the campus served as the primary location for data collection in Columbus. However, women were also interviewed at the aforementioned recruitment sites in order to increase retention.

Human subjects. All conditions for human subjects research for the parent study and the current study were approved by the Institutional Review Board of The Ohio State University. Informed consent and HIPPA regulation forms were signed by all women who participated in this study. In addition, all participants were provided with a list of mental health and social services available in their area.
Sample Demographics

Women for this study were participants from a larger study of HIV disclosure and mental health. There were 125 women in the parent study; however, the final sample for data analysis consisted of the 96 women who met all eligibility criteria and had completed the measures of interest. The complete demographic profile of the sample is presented in Table 1.

These women ranged in age from 18 to 63, with a mean age of 38.25 years (SD = 9.57 years). These women were primarily African American (71.9 %), with the remainder identified as Caucasian (24.8 %), Hispanic/Latino (4.0%), or “Other” (4.0 %). The average monthly income for these women was $1,423 (SD = $560) and 80.2% indicated that they were unemployed. Slightly less than half (44.8 %) of the women indicated they were married/partnered or dating, 37.5% of the women were single, 10.4% were divorced, and 7.3% were widowed. On average, these women had two children. The primary risk factor for HIV contraction was identified as unprotected vaginal intercourse (67.7%). The majority (75%) of women in this study indicated they knew the person from whom they had contracted HIV. The relationship with this person at the time of contraction included spouse/lover (69.6%) and casual/dating partner (24.6%). However, more than half of the women (52.9%) of these women stated no current relationship with the person who infected them.
<table>
<thead>
<tr>
<th>Variable</th>
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<th>Median</th>
<th>Standard Deviation</th>
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</tr>
<tr>
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<td>21.9</td>
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</tr>
<tr>
<td>Some college</td>
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</tr>
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<td></td>
</tr>
<tr>
<td>No</td>
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<td>81.1</td>
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<tr>
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<tr>
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<td>10.4</td>
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<tr>
<td>Widowed</td>
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<td>7.3</td>
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<td>Identified HIV risk</td>
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<tr>
<td>Unprotected sexual activity</td>
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</tr>
<tr>
<td>Other</td>
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<td>5.2</td>
<td></td>
</tr>
<tr>
<td>Do you know who infected you?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>71</td>
<td>25.3</td>
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</tr>
<tr>
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<td>24</td>
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<tr>
<td>Relationship with infecting person</td>
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<td></td>
<td></td>
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<tr>
<td>Spouse/lover</td>
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<td>69.6</td>
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<tr>
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<tr>
<td>Needle-sharing partner</td>
<td>1</td>
<td>1.4</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Sample demographics (N = 96)
Procedures

Women were identified by personnel at the aforementioned recruitment sites and scheduled an appointment to be interviewed and complete a questionnaire at their earliest convenience. Data were collected by trained doctoral level research associates. Data for the study was obtained from all women at phase 1 of the larger study, unless otherwise noted, where specific questions about mental health, sexual importance and sexual desire were included. Participation at each phase took approximately two hours and women were paid for their time.

Instrumentation

For the purposes of this study, the dependent variable was sexual behavior, and the independent variables were mental health, sexual importance, and sexual desire. Mental health variables for this study included indices of depression, loneliness, self-esteem, anxiety, and stress.

Depression was measured with the Depressed Mood Scale (CES-D) (Radloff, 1977). The CES-D is a self-report measure consisting of 20 items, 4-point Likert-type scale with excellent reported internal reliability for general (alpha = .85) and psychiatric populations (alpha = .90). The estimated reliability for the current sample was (alpha = .92). Data for this study were collected at phase 1.

Loneliness was measured with the State Versus Trait Loneliness Scales (STLS) (Gerson & Perlman, 1979). This self-report measure includes two scales, each with 12 items, which assess long-term loneliness (past year) and short-term loneliness (past few days). Participants responded to each item using a 5 point Likert-type scale. The authors have reported that this measure has good internal consistency (alpha = .88). Data for this
study were collected at phase 1. For the current sample, reliability estimates for each subscale were good for both loneliness in the past few days (alpha = .88) and for loneliness in the past year (alpha = .87).

Self-esteem was measured with the Self-Esteem Rating Scale (SERS) (Nugent & Thomas, 1993). Data for the current sample were collected at phase 1. This 40 item self-report clinical measure assesses strengths and weaknesses in self-esteem. Each participant responded to items regarding, self-worth, competence, intellectual and problem solving ability using a 5 point Likert-type scale. According to its authors, the SERS has excellent internal reliability (alpha = .99). The estimated reliability for the current sample was excellent (alpha = .96).

Anxiety was measured with the Costello-Comrey Anxiety Scale (CCAS) (Costello & Comrey, 1967). The CCAS is a 9-item, self-report measure which assesses anxious affective states. The CCAS has good split-half (.70) and test-retest (.72) reliabilities. Data for the current sample were collected at phase 1, and has good overall reliability (alpha = .85).

Stress was measured with an adapted version of the Stress-Arousal Checklist (SACL) (Mackay, Cox, Burrows, & Lasserini, 1978). The SACL is a list of 30 adjectives commonly used to describe psychological stress (e.g., uneasy, stimulated, tense). Participants indicated on a 5-point Likert-type scale the extent to which each characteristic is currently experienced. Reliability for the current sample was moderate (alpha = .63). Data for this study were collected at phase 1.

Sexual desire was assessed with two measures. First, women completed the Sexual Desire Inventory (SDI) (Spector, Carey, & Steinberg, 1996). The SDI is a
fourteen item self-report measure that assesses cognitive interest in sexual behavior. The scale contains two subscales: dyadic sexual desire (9 items) and solitary sexual desire (4 items). For the purposes of this study, only those items related to dyadic sexual desire were used. For each item, participants indicated their thoughts and feelings regarding interest in or wish for sexual behavior in the past month on a Likert-type scale. Higher scores on this measure indicated greater sexual desire. The authors indicated excellent internal reliability for the dyadic subscale (alpha = .86). This measure was originally introduced during phase 5 of the larger study; however, completion of the measure was not phase-specific. Therefore, data was obtained from women who completed this measure at phase 5, 6, or 7 of the larger study. The estimated reliability of this measure was good (alpha = .942).

Second, an adapted version of the Arizona Social Support Interview Schedule (ASSIS) (Barrera, 1981) was administered. Each participant met individually with a doctoral-level graduate assistant to complete this face-to-face interview. The interviewer asked each woman to respond to questions regarding who they would talk to about various social support topics. This measure consisted of questions regarding personal and private matters, borrowing money, seeking advice, positive feedback, physical assistance, social interaction, negative interactions, and sexual interactions. For the purpose of the study, only the questions related to sexual interactions were used. Participants were initially asked to provide the names of the individuals with whom they had sexual interactions in the past six months. For each sexual partner, they were then asked if sexual interaction had occurred with this person in the past month. Regardless of whether or not women had engaged in sexual interactions, all participants were also asked the
following questions: (a) *how much would you have liked the opportunity for sexual interaction*, and (b) *how much have you felt that you needed sexual interaction in the past month*? Women were asked to respond to the opportunity question using a 5-point, Likert-type scale ranging from 1 = “a lot less” to 5 = “a lot more”; responses to the question of sexual need were on a 3-point, Likert-type scale where 1 = “not at all”, 2 = “a little”, and 3 = “quite a bit.” Data was gathered during phase 5 of the larger project.

Sexual importance was measured with the Sexual Importance Scale (SIS) (Mason, 2003). The SIS is a 10 item self-report measure originally designed to assess the importance of engaging in sexual behavior among men who have sex with men. Sample items include “*how important is it for you to fulfill your sexual desires through sexual behavior?*” and “*how important is sexual behavior to who you are as a person?*” Items were summed and averaged to obtain a sexual importance score. Higher scores on this measure indicated a higher importance on being sexually active. Mason (2003) reported excellent internal consistency (alpha = .91) and split half (alpha = .87) reliabilities. This measure was originally introduced during phase 2 of the larger study, and the estimated reliability for the current sample was good (alpha = .896).

Sexual behavior was assessed with the aforementioned questions regarding sexual interactions from the Arizona Social Support Interview Schedule (ASSIS) (Barrera, 1981). Each participant met individually with a doctoral-level graduate assistant to complete this face-to-face interview. Participants were initially asked to provide the names of the individuals with whom they had sexual interactions in the past six months. For each sexual partner, they were then asked if sexual interaction had occurred with this
person in the past month. For the purpose of this study, frequency of engaging in sexual behavior was obtained by totaling the number of partners indicated by each participant.

Data Analysis Plan

For this study, logistic regression analyses were used to test the two main research hypotheses:

1) Mental health and sexual desire will predict the probability of sexual behavior occurring in a sample of women with HIV.

   Controlled variables:
   - Current Age
   - Time since diagnosis

![Logistic regression model for hypothesis 1](image)

2) Sexual importance will increase the predicted probability of sexual behavior occurring in a sample of women with HIV
Controlled variables:
- Current Age
- Time since diagnosis

Mental health
Sexual desire
Sexual importance

Sexual Behavior (yes or no)

Figure 4: Logistic regression model for hypothesis 2

Logistic regression is a multivariate statistical technique used to predict a dichotomous dependent variable from a set of independent variables. The goal of logistic regression analysis is to predict the probability of an event (dependent variable) occurring based on a series of independent variables (Pampel, 2000). The probability of an event occurring will range from 0 to 1. This type of analysis is appropriate only when both the dependent and independent variables are metric. In the present research, sexual interaction was the dependent variable, and the independent variables were mental health, sexual desire, and sexual importance.

The dependent variable, sexual behavior, was not continuous. In order to conduct a regression analysis, dummy coding was used to transform sexual interaction into a dichotomous response. The dependent variable was coded such that the higher value indicated that the event has occurred. For the present study, the occurrence of sexual behavior was obtained from the ASSIS (Barrera, 1981); if women indicated that sexual interaction did occur in the measured timeframe, the response was coded as 1; if sexual
interaction did not occur, the response was coded as 0. Figures 3 and 4 illustrate the two hypothesized models that will be tested using logistic regression analysis.
CHAPTER 4

DATA ANALYSIS AND RESULTS

Descriptive Statistics

Composite scores, as well as means and standard deviations, were calculated for all measures of mental health, sexual desire and sexual importance. These values are summarized in Table 2. In general, the mental health status of this sample was poor. This sample of women indicated high levels of clinical depression (mean = 22.87), as compared to published norms for the general population (mean = 7.94 to 9.25) and psychiatric samples (mean = 24.42). High levels of chronic loneliness were also endorsed. However, these women experienced moderate levels of anxiety and stress. Self-esteem levels were generally low.

In terms of sexual desire, the results were mixed. Women endorsed low levels of sexual desire on the Sexual Desire Inventory (mean = 25.55); however, during the face-to-face interview, these women indicated a stronger desire to engage in more sexual behavior. When asked “how much would you like the opportunity for sexual interaction”, 48.4% of women responded either “a little more” or “a lot more”. The majority of women also indicated they had felt a desire for sexual interaction, with 37.9% responding
“a little bit” and 24.2% responding “quite a bit” when asked how much they felt like they needed sexual interaction in the past thirty days.

The sample was almost evenly split regarding actual sexual behavior, with 59.4% of women indicating they had engaged in sexual behavior in the past six months. Among those women who had been sexually active, fewer indicated a complete lack of desire for sex (33%) than women who had not been sexually active (44.7%); in contrast, women who had not engaged in sexual behavior were less likely to respond that they desired “quite a bit” more sex than women who were sexually active (18.4% vs. 28.1%, respectively).

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>22.87</td>
<td>13.65</td>
</tr>
<tr>
<td>Loneliness</td>
<td>33.35</td>
<td>9.24</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>-0.46</td>
<td>18.26</td>
</tr>
<tr>
<td>Anxiety</td>
<td>40.21</td>
<td>12.73</td>
</tr>
<tr>
<td>Stress</td>
<td>6.08</td>
<td>5.16</td>
</tr>
<tr>
<td>Sexual desire</td>
<td>25.55</td>
<td>19.57</td>
</tr>
<tr>
<td>Sexual importance</td>
<td>26.68</td>
<td>11.23</td>
</tr>
</tbody>
</table>

Table 2: Means and standard deviations of mental health and sexuality variables

Correlational Analyses

In order to simplify the theoretical model, one indicator of mental health was chosen. This indicator was selected by conducting a bivariate correlational analysis for all indicators of mental health (e.g., depression, loneliness, stress, anxiety, and self-esteem). The results of this analysis revealed positive, significant correlations among all variables. These values are presented in Table 3. Depression was highly correlated with all other...
indicators, while self-esteem exhibited low to moderate correlations with other indicators. Given these results depression was chosen as the indicator of mental health.

All indicators of mental health were also correlated with the indicators of sexual desire and sexual importance. These analyses are summarized in Table 3. Neither sexual desire nor sexual importance was significantly correlated with any indicator of mental health, with the exception of self esteem ($r = .237, p < .05$ and $r = .330, p < .001$, respectively). The correlation between sexual desire and sexual importance was moderate and significant ($r = .480, p < .001$).

<table>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
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<td>1. Depression</td>
<td>—</td>
<td>.630**</td>
<td>.692**</td>
<td>.776**</td>
<td>.247*</td>
<td>.039</td>
<td>.146</td>
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<td>—</td>
<td>.477**</td>
<td>.597**</td>
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<td>.051</td>
<td>.092</td>
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<td>—</td>
<td>—</td>
<td>.624**</td>
<td>.411**</td>
<td>.068</td>
<td>.146</td>
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<td>4. Stress</td>
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<td>—</td>
<td>—</td>
<td>—</td>
<td>.147</td>
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<td>.033</td>
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<td>5. Self-esteem</td>
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<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.237*</td>
<td>.330**</td>
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<tr>
<td>6. Sexual desire</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>.480**</td>
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<tr>
<td>7. Sexual importance</td>
<td>—</td>
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<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
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</table>

*p ≤ 0.05

**p ≤ 0.01

Table 3: Correlations between mental health indicators

Logistic Regression Analyses

The first step of these analyses was to select the variables to be used in the models. Depression was selected as the indicator of mental health for two reasons. First, it was significantly correlated with each of the remaining four indicators of mental health.
In addition, the measure used, CES-D, was the only mental health indicator with published norms for general and clinical populations. A composite score was calculated for depression, as well as sexual desire and sexual importance. Age at the time of data collection and time since receiving a positive HIV diagnosis were also selected as control variables. The dependent variable was sexual interaction, dummy-coded as 0 (no) or 1 (yes). The results for all regression analyses are summarized in Table 4.

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<tr>
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<th>Wald</th>
<th>df</th>
<th>Sig</th>
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<td>.968</td>
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Table 4: Variable coefficients for logistic regression analyses
The first block of analysis, with only a constant variable in the model, correctly classified 59.8% of all cases for occurrence of sexual behavior. The logged odds ($B = .396, SE = .213$) suggested that a one-unit change in the constant would result in increased odds of engaging in sexual behavior. The second block of the logistic regression analysis included the control variables only. The prediction of cases to be correctly classified increased to 69.6%. From here, the selected variables of interest were entered into the model to test the hypotheses.

*Hypothesis 1:* Mental health and sexual desire will significantly predict the probability of sexual behavior occurring in a sample of women with HIV.

The third block of variables included total scores for depression and sexual desire. The prediction of cases to be correctly classified increased to 75%. Both of these variables failed to exceed usual levels of significance ($p < .05$). Sexual desire did approach significance at ($p < .055$); however, the depression coefficient did not differ significantly from zero.

The coefficients show that a one-unit increase in the total depression score would lower the logged odds of engaging in sexual behavior by 0.032, while a one-unit increase in the total sexual desire score would increase the logged odds of being sexually active by 0.025. Each coefficient was translated into an exponentiated coefficient in order to examine the effects of each variable on the logged odds of the occurrence of sexual behavior. The percentage change in the odds of engaging in sexual behavior for a one-unit change in each independent variable was obtained by subtracting 1 from each exponentiated variable and multiplying the resulting value by 100. Using this formula, a
one-unit change in depression reduces the odds of sexual behavior by 3.2%, while a one-unit change in sexual desire increased the odds by 2.5%.

Model fit was assessed using three methods suggested by Hair and colleagues (1998) and Pampel (2000). First, a comparison of the values obtained for the log likelihood function (-2LL) was conducted. The smaller the value for -2LL, the better the model fits the data. The baseline log likelihood function for the block containing only the control variables was 106.620. In order for this value to have meaning, it must be compared to the log likelihood function obtained for the block containing the first two variables of interest (depression and sexual desire). After entering depression and sexual desire into the second step, the estimation was terminated at five iterations because the parameter estimated changed by less than 0.01%. With these estimates, the -2LL measure decreased to 99.901. This decrease indicated that the model fit improved by 6.719. This value follows a chi-square distribution and met standard levels of significance ($p = .035$) with two degrees of freedom.

The goodness-of-fit of the model can also be obtained from examining two values produced by SPSS, the Cox and Snell measure and the Nagelkerke adjustment. Both are presented as R square values and are measures of pseudo-variance explained (Pampel, 2000). Higher values for each of these measures indicate greater model fit. However, the Cox and Snell measure is limited in its interpretation because its value cannot achieve a maximum value of 1. For this reason, the Nagelkerke measure is often considered to be a better indicator of model fit because its values range from 0 to 1. For the first hypothesized model, the value of the Cox and Snell measure was .230, and the Nagelkerke value was .311.
Hair, Anderson, Tatham, and Black (1998) also suggest an examination of the Hosmer and Lemeshow test to assess model fit. This test is presented as a chi-square value and assesses the how well the actual and predicted values for the dependent variable correspond. The value is the calculated difference between the classifications of the observed and predicted cases. A small, non-significant chi-square value indicates better model fit. The value ($\chi^2 = 5.535$, $df = 1$, $p < .70$) is not significant, which indicates that the estimated model fits the data well.

In order to determine the change in the variance explained from the baseline model, the following calculation was performed:

\[
Pseudo R^2 = \frac{(106.620 - 99.901)}{106.620} = \frac{6.719}{106.620} = .0630 \text{ or } 6.3\%.
\]

According to Pampel (2000), “the improvement relative to the baseline in the log likelihood model shows the improvement due to the independent variables” (p. 49); in this case, the independent variables of depression and sexual desire resulted in an increase of 6.3% of the pseudo-variance explained for the dependent variable.

Finally, model fit was assessed by examining the predictive accuracy of the model. As stated earlier, the model containing on the control variables correctly predicted 69.6% of all cases, and the first hypothesized model correctly predicted 75% of all cases. According to Pampel (2000), 100% of the cases would be classified correctly in a model with perfect fit, while a model with poor fit would classify cases correctly no more than 50% of the time, or the percentage equal to chance. Given these parameters, the first hypothesized model represents a relatively good fit for the data, as three-quarters of the cases were correctly classified.
**Hypothesis 2**: Sexual importance will increase the predicted probability of sexual behavior occurring in a sample of women with HIV

The third block of the logistic regression analysis included the total score for sexual importance. The prediction of cases to be correctly classified increased slightly to 76.1%. These results are summarized in Table 4. Again, the variables of interest (i.e., depression, sexual desire, and sexual importance) failed to exceed usual levels of significance ($p < .05$), indicating that no coefficient value differed significantly from zero.

The coefficients show that a one-unit increase in the total depression score would lower the logged odds of sexual behavior by 0.035, similar to the effect demonstrated in the first hypothesized model. The effect of sexual desire on sexual behavior was also similar to the first hypothesized model, as a one-unit increase would increase the logged odds of engaging in sexual behavior by 0.020. The logged odds for sexual behavior would increase by 0.017 as a result of a one-unit increase in the total score for sexual importance.

In the second hypothesized model, the effects of depression, sexual desire, and sexual importance on the logged odds of engaging in sexual behavior were also calculated using the aforementioned formula with the exponentiated variable. A one-unit change in depression reduced the logged odds by 3.4%; a one-unit change in sexual desire increased the logged odds by 2.0%. These results were similar to those demonstrated in the first model. The logged odds would increase by 1.7% for a one-unit change in sexual importance.
As with the first hypothesis, model fit was assessed using the same three suggested methods (Hair, Anderson, Tatham, & Black, 1998; Pampel, 2000). After sexual importance was entered into the third step, the estimation was terminated at five iterations because the parameter estimated changed by less than 0.01%. With these estimates, the value of -2LL decreased to 99.501. This decrease from 99.901 obtained in the first hypothesized model indicates that the model fit worsened by 0.4. This value follows a chi-square distribution and did not meet standard levels of significance ($p < .53$) with one degree of freedom.

The goodness-of-fit of the second hypothesized model was obtained from examining the Cox and Snell and the Nagelkerke measures. For the second hypothesized model, the Cox and Snell measure was .234, and the Nagelkerke value was .316. The Hosmer and Lemeshow test indicated good model fit ($\chi^2 = 8.979, p = .344$). The change in the variance explained from the previously estimated model, was calculated as:

$$\text{Pseudo } R^2 = \frac{(99.901 - 99.501)}{99.901} = \frac{0.4}{99.901} = .004 \text{ or } 0.4\%.$$  

The addition of the independent variable of sexual importance resulted in an increase of only 0.4% of the pseudo-variance explained for the dependent variable compared to the first hypothesized model.

Finally, model fit was assessed by examining the predictive accuracy of the model. As stated earlier, the first hypothesized model correctly predicted 75% of all cases. The second hypothesized model correctly classified 76.1%. While this represented a minimal increase in the predictive accuracy between the two models, it was a 6.5% increase over the model containing only the control variables.
CHAPTER 5

DISCUSSION AND IMPLICATIONS

The foundation for this research was a constructionist theory of sexual behavior which considered the impact of mental health, sexual desire and sexual importance on the probability of sexual behavior occurring in a sample of 96 women with HIV. The purpose of this study was to determine the extent to which mental health, sexual desire, and sexual importance predicted whether these women engaged in sexual behavior. In order to address this issue, two models were tested using logistic regression analysis. This section provides a discussion of the results, with implications for future research and the associated limitations of the current study.

Discussion and Implications for Future Research

The first hypothesis was supported, and the full model was statistically significant. The obtained logistic coefficient for depression indicated that for each one-unit increase in a woman’s total depression score, her odds of engaging in sexual behavior would decrease by 3.2% if all other variables were held constant. In contrast, a one-unit increase in a woman’s total sexual desire score would increase her odds of engaging in sexual behavior by 2.5% with all other variables held constant. The hypothesized model was able to correctly predict 75% of all cases, indicating a relatively good model fit. The
percentage of cases that were correctly identified demonstrated an increase of 5.4% over the model containing only the chosen control variables of age at time of data collection and time since diagnosis.

One possible explanation for these findings is the fact that this sample was significantly clinically depressed. The logistic regression analysis indicated that, in the event that all other variables were held constant, total depression produced the greatest proportional effect on the odds that a woman would engage in sexual behavior. This effect was similar in both of the hypothesized models. This result is not surprising, considering the fact that depression was highly correlated with other indicators of mental health, and that this sample of women exhibited a mean depression score that was slightly lower than the established norm for a psychiatric sample (Radloff, 1977). In fact, closer examination of the composite scores for depression revealed that 40.6% of the sample exceeded the published norm for psychiatric samples. However, the researcher wonders if increased variability in total depression scores would have affected the probability of the dependent variable occurring in this sample. That is, is it possible that women in this sample were so depressed that the odds of engaging in sexual behavior were skewed?

In addition, racial differences may have skewed the total depression scores. The women in this research sample were predominantly African American. Reported findings from two recent national surveys (National Center for Health Statistics, 2004; Institute for Women’s Policy Research, 2004) indicated that Hispanic and African American women were more likely to report experiences of serious psychological distress and poor mental health than Caucasian women. Rates of HIV infection are also greater among these same groups of racial/ethnic minority women. Pervasive racial and ethnic
discrimination, lower socioeconomic status, and the stigma associated with HIV could explain the greater rates of depression among women in the current research sample. A more detailed examination of the cultural factors that impact mental and sexual health is warranted.

The majority of existing research regarding the relationship between mental health and sexual behavior has focused on depression as the major or sole indicator of mental health. This researcher posits that examining different indicators of mental health might have produced different results for this sample of women. For example, self-esteem was the only indicator of mental health that was significantly correlated with sexual desire and sexual importance. The correlation of self-esteem with both of these sexual variables was positive, meaning that an increase in self-esteem would be associated with increases in sexual desire and sexual importance. However, it was not included in the final data analysis. Adherence to a constructionist perspective of sexual behavior might necessitate the inclusion of a variable which represents the sociobehavioral impact of sexuality.

Self-esteem has been implicated as both an independent and dependent variable in previous research regarding sexual desire (Hartman, Heiser, Ruffer-Hesse, & Kloth, 2002; O’Sullivan, & Allgeier, 1998; Ravart, Trudel, Marchand, Turgeon, & Aubin, 1996). Women who choose to engage in undesired sexual intercourse have reported lower self-esteem; in addition, low levels of self-esteem have been reported as an outcome of increased levels of depression and anxiety. Interestingly, self-esteem was positively correlated with all of the remaining measures of mental health in this study. This result suggests that the women in this study did not experience severe damage to their core sense of self. Therefore, this researcher posits that limiting mental health to a
sole indicator (depression) may not have accurately captured the impact of mental health on the sexual behavior of this sample of women.

Previous research regarding the impact of mental health and sexual desire on sexual behavior has demonstrated that women who endorsed higher rates of depression were more likely to report a negative impact on their sexual behavior (Bancroft, Loftus, & Long, 2003; Cook, Grey, Burke, Cohen, Gurtman, Richardson, et al. 2004; Cyranowski et al., 2004). The results of this study produced similar results. In addition, previous research regarding the relationship between depression and sexual desire has suggested that women who experience high rates of depression may have a lowered interest in sex. In this study, correlational analysis did not indicate a significant negative relationship between depression and sexual desire in this study. In fact, sexual desire had a significantly positive association with depression; that is, as depression increased, so did levels of sexual desire.

Benbow and Jagus (2002) posited that “sexual problems may occur in association with a depressive illness, [and] loss of sexual desire is integral to the diagnosis of depression” (p. 266). This suggests that the relationships between depression and sexual desire are complicated. However, the current study contradicts prior research findings, as women in this study did not experience a significant decrease in sexual desire as a result of their greater rates of depression. Overall, these women did have low levels of sexual desire. This could be attributed to factors that were not included in the theoretical model, such as age, the availability of sexual partners, biological changes, and pharmacological interventions. A different measure of depression that considers a decrease or loss of sexual desire, and/or other sexual dysfunction in its assessment, might be appropriate in
future research. In addition, a research model based on biopsychosocial variables would provide a more comprehensive consideration of factors which influence sexual desire.

The research findings may also be attributed to the instrument used to measure sexual desire. The Sexual Desire Inventory has not been normed on women with HIV, and only the dyadic subscale items were included as indicators of the sexual desire variable. Given the fact that the majority of women in this sample reported sexual contact as the primary mode of contracting HIV, their reported low levels of sexual desire were not surprising. The stigma related to an HIV positive diagnosis may have a significant impact of a woman’s definition of what is socially acceptable sexual behavior. In other words, does being HIV positive cause a woman to feel that it is not appropriate to be sexually active? The inclusion of a measure of HIV stigma would not only address this limitation, but would also consider the associated social context of being sexually active and its impact on women with HIV.

The second hypothesis of this study was not supported. Although the full model was statistically significant, the block of variables entered was not statistically significant. The logistic coefficient for depression indicated that for each one-unit increase in a woman’s total depression score her odds of engaging in sexual behavior would decrease by 3.4%. This was slightly higher than the logged odds obtained in the first model, but not significantly different. Likewise, the predicted effect of sexual desire on the occurrence of sexual behavior was similar to that demonstrated in the first model; a woman’s probability of engaging in sexual behavior would increase by 2% for every one-unit increase in her total sexual desire score.
The addition of sexual importance in this model demonstrated no significant increase in the predicted probability of a woman with HIV engaging in sexual behavior. The total sexual importance score did positively affect the odds of having sex; a one-unit change in this score would increase the odds of being sexually active by 1.7%. However, as demonstrated in the first model, depression had a greater proportionate impact on sexual behavior than sexual desire and sexual importance. The hypothesized model was able to correctly predict 76% of all cases, indicating a relatively good model fit, but not significantly better than the first model. The percentage of cases that were correctly identified increased 6.5% over the model containing only the chosen control variables.

This study sought to consider the impact of sexual importance on a woman’s odds of engaging in sexual behavior. The Sexual Importance Scale has only been used in one other study (Mason, 2004), in a sample of men who were HIV positive. Normative data has not been obtained for samples of women with HIV. In the vein of constructionist theories of sexuality, sexual importance should represent a consideration of sociocultural variables on a woman’s expression of sexual desires. Bancroft, Loftus, and Long (2003) posited that “one of the consequences of long-term neglect of women’s sexuality has been a lack of serious attempts to conceptualize women’s sexual problems in ways which are relevant to women” (p. 194). Research on sexual compliance (Impett & Peplau, 2003; Impett, Peplau, & Gable, 2005; O’Sullivan & Allgeier, 1998) and sexual submissiveness (Sanchez, Kiefer, & Ybarra, 2006) has suggested that women will continue to engage in sexual behavior in order to strengthen an intimate relationship without regard for their own desires for sex or interest in sex. In addition, the consequences of engaging in undesired sexual behavior include increased sexual
dysfunction. Therefore, further study is needed to develop a more appropriate measure of sexual importance that includes aspects of a sexual relationship that are important to women, such as relationship satisfaction, partner characteristics, and expectations for intimacy.

As health status is maintained or increased, it may be important for women to reclaim their sexual existence before HIV. Research regarding the sexual behaviors of HIV-infected, men who have sex with men suggests that a decreased level of sensitivity and concern regarding risky sexual behaviors (i.e., number of sexual partners, unprotected sexual intercourse) has contributed to increased contraction of other sexually transmitted diseases, as well as increased rates of HIV infection among younger males (Adam, Husbands, Murray, & Maxwell, 2005; Murray & Adam, 2001). Women have increasingly been infected and affected by HIV in the past decade, though little research exists which has examined the long-term behavioral ramifications of this disease.

The measurement of sexual behavior also accounts for the current research findings. There was greater than expected variability in this sample regarding frequency of engaging in sexual interaction, as indicated by the Barrera interview. However, this study did not examine the context of sexual behavior, such as number of sexual partners, motivations for engaging in sex, or sexual risk behaviors. Cyranowski and colleagues (2004) suggested that the behavioral preferences of a sexual partner and a couple’s established pattern of sexual interaction frequency significantly influenced women’s reported frequency of sexual behaviors. For women who contracted HIV from their sexual partners, it may be difficult to separate feelings of fear, betrayal or mistrust from needs for sexual intimacy. As indicated by Bova and Durante (2003), women with HIV
remain sexually active after receiving their diagnosis, but may also exhibit less frequent condom use. The sexual behaviors of women with HIV may be significantly influenced by their partner’s sexual needs. That is, women may continue to engage in risky sexual behaviors in order to please their partners, or because they are misinformed about their susceptibility to other sexual transmitted infections or their ability to transmit HIV to their sexual partners. Future research should include a more comprehensive definition and measurement of sexual behavior in order to assess the existence and importance of these aforementioned variables.

In addition to mental health, previous research (Benbow, & Jagus, 2003; Budin, Boslaugh, Beckett, & Winiarski, 2004; Cook et al., 2004) has suggested that chronic illness has an indirect impact on sexual desire by increasing levels of depressive symptoms. However, this study included limited consideration of the health status of this sample. Time since diagnosis of HIV seropositivity was included as a control variable. Interestingly, if all other variables were held constant, a one-unit increase in this variable would produce more than a 13% increase in the chances of a woman engaging in sexual behavior. Proportionally, this was a greater effect than that manifested by depression, sexual desire, or sexual importance. This result is in accordance with previous research by Bova and Durante (2003), and suggests that HIV may not negatively impact the sexual lives of women as traditionally assumed. This is an interesting finding, as time since diagnosis was not significantly correlated with any of the indicators of mental health, sexual desire, or sexual importance. Longitudinal research is needed to closely examine the temporal impact of HIV on a woman’s sexual behavior. In addition, age-related factors could also be examined through cross-sectional research.
This research study was specifically concerned with identifying factors which would significantly predict whether a woman with HIV would engage in sexual behavior. However, the applied method of data analysis did not allow for discovery of the most influential variables in a direct fashion. The use of a stepwise regression analysis would allow for the interpretation of which variables were most influential to the occurrence of the dependent variable of sexual behavior.

Conclusion

The origins of sexual desire are not well understood, but prior research suggests that women’s sexual desire may be influenced by mental health and motivation to have sex (Basson, 2000; Levine, 2002; Levine, 2003; Ravart et al., 1996; Tiefer, Hall, & Tavris, 2002). Overall, the results of this study indicated that women who are more depressed will be less likely to engage in sexual behavior; while, women who indicate greater interest in sexual behavior and place greater importance on sex will be more likely to be sexually active. Previous research (Laumann et al., 1999; Ravart et al., 1996) regarding the impact of mental health on sexual behavior has also provided similar results.

The aforementioned rationalizations for these findings, as well as the identified implications for future research, suggest numerous avenues for expansion of clinical interventions. Clinicians who work with women who are HIV positive should consider the impact of numerous indicators of mental health on myriad aspects of their sexual lives, including levels of sexual desire, the importance of maintaining sexual activity, and the context of the sexual activity. Accessing clinical services could lower depression, but the effects on sexual behavior could be complicated. Women may de-emphasize the
importance of remaining sexually active when discussing the management of their disease with a physician. In addition, support groups for women with HIV may be more concerned with issues such as disclosure and disease management, and inadequately address intimate relationships.

Women with HIV have myriad issues related to management of intimate relationships. The impact of HIV on intimate relationships could include increased anxiety, violence, and communication difficulties, which have also been linked to the restriction of sexual desire and expression (Laumann, Paik, & Rosen, 1999; Tiefer, Hall, & Tavris, 2002) in relationships. As women with HIV struggle to manage their physical health, they may also struggle with issues such as disclosure to new or existing sexual partners and condom negotiation. Clinicians who work with women with HIV should not only be aware of the impact that mental health has on their sexual behavior, but they should also consider additional factors that may contribute to inhibited sexual desire and participation in dyadic sexual behavior.

For example, the desire to achieve relationship satisfaction and to maintain relationship stability may be significantly related to sexual desire (Frolich & Meston, 2002; Hurlbert & Apt, 1994; Laumann, Paik, & Rosen, 1999). Emotional closeness to a partner and other indicators of relationship satisfaction are more strongly associated with sexual desire than with engagement in sexual activities. Women may still engage in unwanted sexual behavior in order to achieve these goals. In addition, the presence of sexual force and the sexual expectations of an intimate partner may force women to engage in undesired sexual activity. Clinicians who work with couples in which one or both partners is HIV-positive should not only assess for all aspects of relationship
violence, but should also help the couple to discuss important health-related issues, such as condom negotiation.

Women who seek mental health services also need to be cautioned about the sexual side effects of some psychotropic medications. Antidepressant medications could not only decrease depressive symptoms, but could also lower sexual desire or produce additional sexual dysfunction (e.g., lowered arousal). Inhibited sexual desire and other sexual dysfunctions have also been attributed to the life-preserving drugs that are part of highly active antiretroviral therapy (HAART).

Current models of HIV prevention are mostly concerned with limiting risky sexual behavior; however, most of the evidence-based models of prevention endorsed by the Centers for Disease Control and Prevention are targeted to men who have sex with men. As the rates of HIV infection continue to increase for women in general, and specifically among racial minorities and those over age 50, there is a serious need for the development of prevention and intervention models that demonstrate a greater consideration and understanding of women’s sexuality.
LIST OF REFERENCES


