

ABSTRACT

Title of dissertation: WORK ADJUSTMENT IN PERSONS
LIVING WITH HIV/AIDS (PLWHA): A
BIOPSYCHOSOCIAL PERSPECTIVE

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While there is evidence that Persons Living with HIV/AIDS (PLHWA) have unique and changing needs and concerns in their workplaces, such as changes in health status, high medical costs, emotional consequences of the disease, and concerns about discrimination, no previous studies could be found on work adjustment (e.g., job satisfaction) in PLWHA. However, past research has linked employment disruption and decisions to disease progression, cognitive impairment, physical symptoms, depression/anxiety, concern about discrimination, and medical costs (e.g., Ezzy et al., 1999; Heaton et al., 1994; Martin, Brooks, Ortiz, & Veniegas, 2003). Therefore, this study tested a biopsychosocial model of work adjustment in employed PLWHA ($N = 57$), based on Hoffman and Driscoll's (2002) Concentric Biopsychosocial Model. It was hypothesized that physical health (fatigue and pain), psychological adjustment, and work support/environment would uniquely predict work adjustment (e.g., job satisfaction),

where psychosocial variables were expected to account for the most of the variance explained.

With the exception of pain symptoms, the predictor variables in the model were found to correlate with the primary outcome, job satisfaction. A hierarchical block-wise regression was then utilized to test the model, where the physical health variable (i.e. energy/fatigue) was entered first, followed by the entry of the psychological adjustment variable in the second block. The work environment variables (i.e., perceived supervisor support, perceived discrimination) were entered in the third and final block. Results partially supported the proposed model with 25% of the variance in job satisfaction explained in the third step, where perceived supervisor support and workplace discrimination accounted for a statistically significant amount of the variance. These findings support the importance of examining perceptions of workplace environment when addressing work adjustment and employment concerns of PLWHA.

WORK ADJUSTMENT IN PERSONS LIVING WITH HIV/AIDS
(PLWHA):
A BIOPSYCHOSOCIAL PERSEPTIVE

By

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Dedication

To my loving husband, Sam, and to my family and friends who supported me in completing this dissertation.

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Chapter 1: Introduction

Now in my mid-30s, I'm facing the possibility of a future of financial insecurity as life with a chronic and demanding illness leaves me ill-suited to a fast-moving and competitive [job] market.

—Michael Carter, living with HIV for the past nine years

The pandemic of human immunodeficiency virus (HIV) knows no borders, affecting psychological and social functioning of individuals, families, and communities around the world. Recently, advances in HIV/AIDS treatment have changed the course of the fatal disease. Today, the disease is considered more of a chronic illness, where persons living with HIV/AIDS (PLWHA) are living longer and more functional lives (Ezzy, De Visser, Grubb, & McConachy, 1999). In fact, in 1998 the National AIDS Foundation estimated that 75 percent of the more than 150,000 PLWHA on combination drug therapy in the United States were healthy enough to consider returning to the workforce (Key & DeNoonen, 1998). However, more recently, uncertainty about the future is increasing because medication treatments are starting to be less effective, due to problems with adherence and resistance to the drug therapy over long periods of time (Matsushita, 2000). In addition to PLWHA's feelings of general uncertainty about the future, PLHWA have unique and changing needs and concerns in their workplace, such as changes in health status, high medical costs, emotional consequences of the disease, and concerns about discrimination (Brooks & Klosinski, 1999). Many of these concerns, in turn, affect employment decisions and ability to remain at work. While some research

has investigated how various biomedical and psychosocial factors relate to employment status (i.e., employed versus unemployed) in PLWHA, no studies were found that examined how these unique challenges relate to work adjustment (e.g., job satisfaction) in PLWHA.

In focusing on work adjustment in employed PLWHA, the present study embraced a preventive perspective, that is, predicting what may contribute to job turnover or job loss before it actually occurs, which could have implications for workplace interventions. In this study, work adjustment encompassed factors such as well-being in the workplace (e.g., job satisfaction) and other affective reactions to work (e.g., organizational commitment). Additionally, these work attitudes, such as job satisfaction, were conceptualized to predict intentions to quit one's job and ultimately turnover behaviors. While job satisfaction was one of the first work attitude constructs to be researched, Porter, Steers, and Mowday (1974) were among the first researchers to introduce the attitude construct of organizational commitment, expanding the conceptualization of work adjustment. They found that while both organizational commitment and job satisfaction predicted subsequent turnover, organizational commitment better discriminated between leavers and stayers. Considering the usefulness of these indicators of work adjustment in predicting turnover, they were utilized in the present study.

HIV and Employment

Work adjustment has not been examined in PLWHA. To date, studies examining employment experiences in PLWHA have largely focused on employment status (i.e.,

employed versus unemployed). Of the studies that have examined predictors of employment status in PLWHA, most of the previous research has shown that levels of employment (i.e., employed versus not employed) decreased with the progression of HIV disease (i.e., disease status and symptomology), which has also been found when examining the relation between neurological impairment and employment (Diaz et al., 1994; Heaton et al., 1994; Rabkin, McElhiney, Ferrando, Van Gorp, & Lin, 2004). Considering the ability of biomedical-related factors to predict employment status in PLWHA, it is important to include variables such as disease status and symptoms in examining a model of work adjustment.

Living with a stigmatized chronic illness, which ultimately leads to premature death, psychological factors, such as mood and degree of openness about disease status, may play an important role in PLWHA's adjustment, including work adjustment. In terms of mood, PLWHA have been found to have higher rates of psychological distress than the general population (Perkins, Stern, Golden, Murphy, Naftolowitz, & Evans, 1994), and a recent study's findings suggested that depression was underdiagnosed in PLWHA (Asch et al., 2003). In addition to vulnerability to psychological distress, mood is particularly relevant when examining work adjustment in PLWHA because there is evidence that mood, both positive and negative, predicts physical health (e.g., Hays, Turner, & Coates, 1992) and employment outcomes in PLWHA (Sowell et al., 1997). Another unique challenge that PLWHA may face in the workplace is degree of openness or "outness" about their disease status and/or sexual orientation (if applicable). Little research has been done on degree of openness regarding HIV/AIDS. Research that has been done has merely found that as disease symptoms worsen, PLWHA are more likely

to disclose their illness (Sowell et al., 1997). No studies have examined degree of disclosure or “outness” in relation to employment and work adjustment in PLWHA.

Some researchers have examined degree of “outness” in its relation to work adjustment in lesbian and gay employees. Findings are equivocal regarding the effects of “outness” or disclosure regarding the experiences of lesbians and gay men in the workplace. Research has found that the more open these individuals are at work regarding their sexual orientation, the more positive their work attitudes are but the less satisfied they are with their pay (Ellis & Riggle, 1995). Alternatively, other studies have found no relation between degree of being out and work attitudes (e.g., Croteau & Lark, 1995), while there is evidence that gay workers who disclosed to more people at work showed lower organizational commitment (Day & Schoenrade, 1997).

What seems to be clearer is the importance of the perception of discrimination in the workplace in predicting work attitudes in lesbians and gay men. Regarding individuals living with HIV/AIDS, their concerns about discrimination and stigma have been found to affect their employment-related decisions (Brooks & Klosinski, 1999). The Americans with Disability Act (ADA) section on HIV/AIDS has addressed several types of workplace discrimination, such as violation of confidentiality, refusal of reasonable accommodations, and promotion discrimination, just to name a few. While disclosure issues are important in considering work experiences, experience of discrimination is central to understanding how the perceived work environment affects work adjustment. Therefore, the present study focused on the extent to which this perceived discrimination relates to work adjustment outcomes.

Considering the physical and emotional challenges of PLWHA, challenges that can be deleterious to work adjustment, workplace support and relationships are likely to be especially important in moderating or buffering the deleterious consequences of HIV-specific stressors (e.g., Brooks & Klosinski, 1999). Nonwork sources of support, such as support from friends and family, may also act to buffer challenges in their lives (Hays et al., 1992). Alternatively, a generally unsupportive work environment and a work environment in which an individual perceives the possibility of discrimination likely add to stress and may contribute to poor work adjustment. In sum, being able to work is especially important for PLWHA for both practical reasons (e.g., medical coverage, finances) and psychosocial reasons (e.g., feelings of accomplishment, social connectedness [see Brooks & Klosinski, 1999; Ezzy et al. 1999; Hoffman, 1997]), and therefore understanding predictors of work adjustment is crucial.

Various biopsychosocial factors, such as, disease symptoms, and mood, as well as work environment, affect the lives and work experiences of PLWHA. Therefore, these biomedical, psychological, and social factors were hypothesized to relate to work adjustment in the present study. More specifically, greater disease symptoms, greater levels of emotional distress, and lower levels of social support are expected to predict lower levels of work adjustment. Additionally, the psychosocial variables (i.e., mental health and social/environmental support) are expected to be better predictors of work adjustment than physical health symptoms. Further, social support is expected to play an important buffering role, such that greater work support, as well as less perceived discrimination, will moderate the relations between physical and mental health symptoms

(mental and physical health) and work adjustment. See Figure 1 for an illustrative depiction of these relations.

Chapter 2: Review of the Literature

This review discusses and critiques the literature and research of various areas, from a brief overview of work adjustment constructs to a discussion of the unique stressors and challenges of PLWHA, which may affect their adjustment to work. First, a brief review of the indicators of work adjustment is presented, focusing on the constructs of job satisfaction, organizational commitment, and turnover intentions. Next, literature and research on the unique challenges of PLWHA, such as biomedical factors (e.g., viral load, symptomatology), demographics (e.g., ethnicity, sexual orientation, gender, socioeconomic status), and psychological adjustment factors (e.g., emotional distress), are reviewed. Additionally, in addressing the buffering effects of work characteristics and support, social support literature will be reviewed, along with a discussion about concerns of discrimination in PLWHA. Finally, research will be presented that has included biomedical, psychological, and social factors in examining the employment experiences of PLWHA.

Overview of Work Adjustment Construct

Work adjustment has been defined in terms of factors that relate to the propensity to remain at the job. Historically, research on turnover has largely focused on job satisfaction in predicting tenure (Porter et al., 1974). One factor that was extended in this understanding of work adjustment was organizational commitment, which has been operationalized as the strength of a person's identification and involvement with his or her organization (Porter, Steers, & Mowday, 1974). According to Porter and colleagues, organization commitment involves an individual accepting and believing in the

organization's values and goals, as well as demonstrating the willingness to expend substantial effort for the organization and a desire to maintain affiliation with the organization. Porter et al.'s finding that organization commitment is a better predictor of subsequent job turnover than job satisfaction is contributed to an expansion of the conceptualization of work adjustment.

More recently, Meyer, Allen, and Smith (1993) conceptualized organizational commitment as a three-component model, capturing various conceptualizations of one's feelings of commitment to an organization, such as affective attachment, perceived costs of leaving the organization, and obligation to the organization. The authors coined the three types of commitment affective commitment, continuous commitment, and normative commitment, respectively. They contended that employees with a strong affective commitment stay at their jobs because they want to, those with a strong continuance commitment stay because they need to, and those with a strong normative commitment remain at their jobs because they feel they are obligated to do so. The present study is especially interested in affective commitment it has been most connected with well-being and satisfaction at the work. Further, there is evidence that affective commitment to one's organization is more strongly correlated with job satisfaction and intentions to leave than are normative and continuance commitment (Meyer et al., 1993).

Utilizing variables that predict job turnover is important in formulating research and ultimately designing interventions that aim to facilitate PLWHA returning to work and remaining at their jobs. Another variable that is included in the present study's conceptualization of work adjustment is turnover intention, which has been found to predict job turnover (e.g., Arnold & Feldman, 1982). Presently, no research exists that

has examined work adjustment in PLWHA, even though there is evidence that many of these individuals leave work (e.g., Yelin et al., 1991) or lessen the hours that they work as their disease progresses (Leigh, Lubeck, & Farnham, 1995). A biopsychosocial perspective is essential in capturing the unique challenges that may affect PLWHA in their adjustment to work, reflected in job satisfaction, organizational commitment, and intentions to turnover. The next sections review literature and studies on the challenges experienced by PLWHA utilizing a biopsychosocial perspective, especially related to employment.

Background of Biopsychosocial Perspective

Traditionally, much research on illness and adjustment concentrated on physical symptoms. Engel (1977, 1980) was the first to include psychological and social factors with biological factors in understanding health. His model therefore was coined the “biopsychosocial model,” challenging the traditional unitary focus on biomedical factors in understanding the functioning of individuals with chronic illnesses. Engel’s model is hierarchically organized from the smallest unit (e.g., cells) to the most complex (e.g., culture) (Hoffman & Driscoll, 2000). Further, each unit within the model is to be understood in conjunction with the other units or levels of the system. Since the introduction of Engel’s (1977) model, studies that consider psychological and social factors have become more common. However, as posited by Taylor and Aspinwall (1990), medical citations continued to overshadow the number of psychological citations, with a ratio of 10:1 (Hoffman & Driscoll, 2000). Today, there remains a need to integrate psychosocial variables.

In addition to the importance of including psychological and social factors in predicting health outcomes, the definition of “health” has been debated. Historically, research has focused on disease and deficits as an indicator of health status rather than understanding health status in terms of positive aspects of adjustment. According to Hoffman and Driscoll (2000), health status can be conceptualized as a continuum from healthy to unhealthy. The researchers propose the inclusion of wellness (e.g., quality of life, life satisfaction) in addition to illness in capturing the spectrum of human experiences and health.

Hoffman and Driscoll (2000) proposed a concentric biopsychosocial model, which reflects the importance of examining biological, psychological, and social factors in an interactive and recursive manner. Their concentric model proposed health status as the outcome or criterion variable, which the authors defined as persons’ functioning ranging on a continuum from wellness to illness, which can include perceived physical symptoms and subjective view of well-being. Health status is placed in the center of the concentric model, where psychosocial contributors are represented in the next concentric circle, biosocial factors make up the following circle, and biomedical contributors characterize the final and outermost circle. The following sections will review each set of contributors in the model, as well as discuss the contributors in relation to the experiences of PLWHA, especially in relation to employment.

Biomedical Contributors in HIV

Biomedical contributors to health status and adjustment include variables involved in biological processes, disease symptoms and characteristics, and genetics (Hoffman & Driscoll, 2000). Biological processes involve physiological events that

affect health status, such as heart rate, muscle activity, circulating hormones, and blood lipids. Disease symptoms and characteristics include common symptoms, medications, interventions, and disease outcomes within various diseases; these are “defining characteristics” that affect nearly all persons with a particular disease (Hoffman, 1991, 1996; Hoffman & Driscoll, 2000).

In terms of disease characteristics, HIV is a progressive disease, involving a gradual decline of CD4+ T cell (helper cells of the immune system) count and the development of opportunistic infections and disease symptoms (National Institute of Allergy and Infectious Diseases [NIAID], 2003). After initial infection there is a drop in CD4+ T cell count (immunosuppression). This drop is followed by some restoration of immune functioning and stabilization of the immune system, where a normal level of CD4+ T cell count (between 500 and 1,500 cells/mm³) is maintained for many years (Mayer, 1999). High risk of disease progression is marked by a CD4+ T cell count of 300–400 cells/mm³ (O’Connell, 1990). Consequences of the disease, such as physical symptoms and neurocognitive deterioration, are involved in the disease progression and can relate to problems in employment. In addition to examining CD4+ T cell count to get a measurement of viral load, HIV-1 RNA is measured in order to detect latently infected CD4+ helper/inducer T lymphocytes. Viral load is most often examined in attempting to examine for detectable levels of the virus, although there is not a perfect relationship between viral load and T cell count.

Symptoms of HIV and AIDS vary and often relate to the stage of the disease. At the time of acquiring HIV, many individuals may be asymptomatic, however, 30–70% of individuals exhibit primary infection syndrome, which involves possible symptoms of

fever, headache, rash, pharyngitis, gastrointestinal problems, and lymphadenopathy (Mayer, 1999). These symptoms may cause disruption in work activities and employment (Hoffman, 1996; O'Connell, 1990). An asymptomatic stage often follows, where less than 1% of persons living with HIV develop life-threatening opportunistic diseases during the first few years after infection. The CDC classification of disease progression in HIV and infection consists of four groups: (1) acute infections, (2) asymptomatic infection, (3) persistent generalized lymphadenopathy (symptomatic), and (4) other disease/AIDS (constitutional disease, neurological disease, opportunistic infections, associated neoplasms, and others).

In the last decade, medication regimes have helped in slowing the progression of the disease. In 1987, the first effective nucleoside analog antiretroviral treatment (ZDV, AZT) was available. However, ZDV showed limited effectiveness (Mayer, 1999). Other nucleoside analogs, such as ddI, ddC, D4T, and 3TC, helped with the treatment of patients who became resistant to AZT (Mayer, 1999). According to Mayer, the addition of protease inhibitors to nucleoside analog antiretroviral therapy has demonstrated significant improvements in “survival and clinical status” in PLWHA. Matsushita (2000) reported that the benefits of mono- and biotherapy for HIV-1 infection are only transient mainly because of antiviral drug resistance. Matsushita posited that in order to obtain sustained benefit from antiretroviral therapy it is recommended that treatment involve at least triple-drug combinations, so-called highly active antiretroviral therapy (HAART). This recommended medication regime of a triple-drug combination therapy consists of two nucleosides and one protease inhibitor or a nonnucleoside, which is consistent with current guidelines (Matsushita, 2000). It was further reported that since the introduction

of HAART, there have been striking decreases in AIDS-related morbidity and mortality. Considering these advances in treatment, PLWHA have been functioning at healthier levels and are living longer, which has extended their ability to function and be productive in various areas of their lives, including the workplace. Furthermore, people who left work in the earlier stages of the illness may have found that they could go back to work and are dealing with readjustment to the work environment. It is important to note that differential access to these treatments will likely affect the functioning and lives of PLWHA.

Important developments have arisen since the introduction of HAART, which has led to an increased feeling of uncertainty in PLWHA about this treatment. While triple-drug combination therapy continues to be the recommended treatment and slows the progression of HIV, the treatment can be problematic because of difficulty with medication adherence or compliance, side effects, and possible development of drug resistance after taking the medications over a long period of time. Adherence is very important when taking HAART regimens. Catz, Kelly, Bogart, Benotsch, and McAuliffe (2000) referred to these regimens as “chronic, exceedingly complex, and unforgiving of even occasional lapses” (p. 131). They cited Mellors’s (1997) discussion of clinical implications of medication resistance, where resistance was described as occurring even during occasional deviations from the treatment regimen, causing the HIV viral load to rebound and quickly evolve resistance to the drug. In addition to problems related to adherence, Matsushita (2000) stated that long-term treatment could ultimately lead to multidrug resistance, which would leave few options for therapy. These possibilities of resistance to drug therapies may contribute to uncertainty and concern about life

functioning, including ability to remain at work. The following sections review studies that have considered various biomedical contributors, such as those discussed above, in relation to employment for PLWHA.

Disease Status and Employment

Several studies have shown that disease status (i.e., disease progression) relates to employment status. Disease status has largely been determined by the presence of symptoms. One way researchers have operationalized status of disease, indicating progression of the disease, involves categorizing individuals into the following discrete groups: (a) seronegative or HIV–; (b) asymptomatic HIV+, not experiencing symptoms; (c) symptomatic HIV+, experiencing significant symptoms; and (d) AIDS, diagnosis of AIDS. Other researchers merely categorize participants as being seronegative, HIV+, and having AIDS. Some of these classifications provide more information about the presence of symptoms than others.

Kass, Munoz, Chen, Zucconi, and Bing (1994) examined change in employment status (i.e., “employed full-time” or “not employed full-time”) in the last six months, insurance, and financial impact of HIV in 5,000 gay and bisexual men who were recruited from four metropolitan areas to participate. The majority of the participants were white (85%), and 56% had a college education. Participants were classified as HIV–, asymptomatic HIV+, symptomatic HIV+, or AIDS. Visits were scheduled every six months, and data were used only from those men who attended during the seventh year of the study, which were the 14th and 15th visits (60.66% of the original group). Results demonstrated that 26% of those with HIV who were employed during their 14th visit were not employed during the 15th visit. Conversely, only 7% of the HIV– participants

were no longer employed by the 15th visit. Disease progression also was shown to relate to employment status, where participants with AIDS were less likely to be employed than those who were symptomatic and asymptomatic. Further, symptomatic participants were less likely to be employed than asymptomatic participants, and similarly, asymptomatic individuals were less likely to be employed than seronegative individuals. Regarding medical needs, seronegative men were more likely to carry private insurance and seek needed medical care than seropositive men. It is important to note that there were no participants who were women and few who were persons of color, and therefore the findings may not be representative of the experiences of individuals in those populations.

In another study, which assessed work hours in addition to employment status, Leigh et al. (1995) examined the relations between disease progression and employment status as well as hours of work per week in a sample of predominately gay men (98% [2.8% were women]). The authors reported that the majority of the sample was white (90%), while the rest of the sample was 6% Hispanic, 3% African American, and 1% Asian. The mean age was 38.8 (SD not reported), and 66.4% were college educated. The sample was grouped as HIV-, HIV+, and having AIDS, where those who were HIV- were more likely to work and to have worked more hours than those individuals with AIDS. However, there were not significant differences found between the HIV- and HIV+ groups. Further, the majority of the employed individuals, across the three groups, reported working a 40-hour workweek. This study does not support the contention regarding the impact of employment differences between individuals with a disease status of HIV+ and HIV- individuals. However, individuals diagnosed with AIDS (symptomatic) based on the presence of symptoms significantly less likely to be

employed. This gives some support that disease progression relates to decreasing levels of employment.

It is important to note that the samples in these studies were largely white males and college educated (when reported). However, level of education and socioeconomic status, which are two variables that could affect employment and access to health care (Ginzberg, 1991), were not consistently reported. The studies previously discussed defined disease progression in terms of diagnosis and symptom status, but they did not specify which symptoms or physical effects of the disease related to employment status, nor did they examine symptomology on a continuum. Often, some symptoms experienced by individuals who are categorized as having the same disease status may have greater effects on employment than other symptoms. Additionally, the number of symptoms may vary among individuals within the same disease status classification, and therefore assessing specific symptoms is important in conjunction with disease status. It is important to note that these studies reflect pre-1994 data and even earlier due to publication lead time, which is before triple-drug combination therapy (HAART) was being utilized. Back then, when symptoms did appear, the person typically was AIDS defined, continuing to get sicker.

Physical Symptoms and Employment

A closer look at physical symptoms may be illustrative of how disease characteristics relate to life functioning. Physical and medical effects of HIV/AIDS that may affect employment status include pulmonary conditions, which relate to fatigue and difficulty with breathing; rheumatological conditions, affecting joints and often involving

fatigue and pain; and neuromuscular complications (Hoffman, 1996). Neurological or neurocognitive complications also occur and will be discussed in the next section.

Yelin et al. (1991) conducted a longitudinal investigation of changes in employment in PLWHA, including change in work hours since onset of symptoms, in 193 persons with symptoms of HIV-related illness. The majority of participants were male (96%) and white, non-Hispanic (82%), with 9% black participants, 6% Hispanic participants, and 3% who reported as “other.” Two-thirds of the sample had finished college. Through a close-ended telephone interview, over a one-year period of time, the researchers assessed 20 common HIV-related symptoms and the onset of each symptom. Additionally, they asked respondents about their experience of 20 common HIV-related medical conditions (e.g., Kaposi’s sarcoma) and when onset occurred. Respondents were also asked about whether they were diagnosed with AIDS or AIDS-related complex (ARC) by their physician and what medications they were currently taking. Employment history was assessed through asking about whether they were employed ($n = 166$; full-time, $n = 146$; part-time, $n = 20$), looking for work, out of work, or disabled when they first noticed HIV-related illness. Regarding symptomology, 96% reported one or more symptoms of any kind (duration with symptom: mean = 958 days, $SD = 677$), 60% experienced one or more neurological symptoms (duration with symptom: $M = 604$ days, $SD = 521$), 31% reported one or more symptoms of dementia (duration with symptom: $M = 525$ days, $SD = 336$), and 45% experienced one or more physically limiting symptoms (duration with symptom: $M = 831$ days, $SD = 584$). In terms of diagnosis, 55% reported having AIDS, and 28%, as having ARC. During the year of interviews, full-time employees decreased their total work hours as a group by 59%, while part-time workers

increased in proportion (from 12 to 34%). Forty percent of workers diagnosed with AIDS had stopped working within a year after diagnosis. Of those with ARC, 40% had stopped working prior to formal diagnosis, with zero working by the end of the year. While this study measured specific symptoms and type of medication, analyses were not conducted on how the specific symptoms or medication might affect change in work over time. Overall, findings support the idea that disease progression and a greater number of symptoms predict change to working fewer hours and stopping work entirely.

A study that did examine specific symptoms in relation to functioning at work was conducted by Darko, McCutchan, Gillin, and Golshan (1992). Darko and colleagues investigated the relations among fatigue, sleep disturbance, disability, disease progression, and activities such as work. Participants were 112 gay males (HIV-seropositive, $n = 62$; HIV-seronegative, $n = 50$). The researchers assessed immunosuppression indicators (viral load), such as white blood cell count and CD4+ cell count, as well as sleep disturbance and fatigue. Additionally, they measured the extent to which symptoms interfered with important activities, such as employment. For analysis purposes, 108 participants were grouped into three categories based on their disease status: Group 1 was CDC stage IV, ARC or AIDS diagnosis ($n = 14$); Group 2 was CDC stage III, HIV-seropositive without symptoms or sign of lymphadenopathy ($n = 44$); and Group 3 was a comparison group of HIV-seronegative participants ($n = 50$). Findings indicated that HIV-seropositive patients were significantly more likely to be unemployed and to be experiencing greater fatigue than seronegative participants. However, when asked about whether fatigue was a central reason for no longer being employed, nearly all participants who were once employed reported that fatigue was not a central factor in

their change in employment status. This study demonstrated how specific symptoms of the disease (e.g., fatigue) can relate to life functioning and employment status, but it is important to note that participants overall did not identify fatigue as an important determinant in stopping work. Possibly other disease symptoms and/or psychosocial factors, such as depression or lack of social support, were more likely to directly account for their change in employment. These findings support the need to examine multiple areas of functioning in understanding predictors of employment in PLWHA.

In addition to examining physical symptoms in relation to employment in PLWHA, some researchers have considered medication with respect to these variables. Grierson, De Visser, and Bartos (2001) tracked 925 Australians living with HIV/AIDS in a national survey in 1997 and repeated the survey on 924 of the original participants in 1999. Participants were taking antiretroviral (ARV) drugs, which were new during the beginning of the study. While individuals taking the new ARV drugs showed improvements in clinical variables, there were no improvements in physical well-being or in levels of employment or in terms of finances. While medications have contributed to some improved areas of functioning in the lives of PLWHA, it remains unclear how medications work over time regarding some functioning areas, including employment. Considering the notion that medication would improve health status, which in turn might improve life functioning, such as employment, it was expected that ARV drug treatment would have improved employment status over time. However, this study did not support such hypotheses. As this study did not evidence change in employment after taking the ARV regime, it is possible that other variables were more important in predicting employment status.

When conducting and considering research on medical treatments, it is important to note that socioeconomic status (SES) may affect access to health care and therefore restrict the range of participants to only those who can afford the medications. These possible aberrations may not be such an issue for countries with equal access to health care such as Australia, where the Grierson, et al. (2001) study was conducted.

Neuropsychological Effects of Disease Progression and Employment

Other HIV and AIDS-related symptoms that may interfere with work functioning involve neuropsychological/neurocognitive impairment. Neuropsychological impairments, such as HIV-associated mild neurocognitive disorder and HIV-associated dementia, have been identified in PLWHA. Typically, just less than half of HIV+ individuals do not show neurocognitive/neuropsychological impairment, while 12% of seronegative controls show some impairment (Hoffman, 1996). More recent literature supports earlier findings that individuals living with HIV/AIDS display symptoms of neuropsychological impairment (e.g., Rabkin et al., 2004). Although research has shown equivocal evidence of the presence of neurocognitive symptomology in PLWHA, some studies have demonstrated the relation between neurocognitive impairment and employment in PLWHA.

Heaton et al. (1994) found evidence that neuropsychological impairment relates to unemployment. Their sample consisted of 378 men, where 89 were HIV-seronegative controls, 252 were asymptomatic or in early symptomatic stages, and 37 were in later symptomatic stages of the disease. Potential participants were not asked to be in the study if they had any serious neurologic illness/disease predating HIV infection. In terms of race and ethnicity, the researchers reported that 14.6% of the control group were

nonwhite, 24.6% of the asymptomatic/early symptomatic group were nonwhite, and 14.8% of the symptomatic group were nonwhite. All participants had at least 10 years of formal education, and the average ages of the three groups ranged from 31.2 to 34.7 years (*SDs* not reported). Participants were administered a battery of neuropsychological tests assessing various areas of functioning. The clinician administering the tests would then give an overall index of functioning using a nine-point rating scale (1 = above average, and 9 = severely impaired) on eight areas (verbal, complex perceptual-motor, abstraction/flexibility of thinking, attention/speed of procession, learning, retention, sensory-perceptual, and motor). The participants were classified as neuropsychologically impaired if they scored at least a five or higher in at least two of the eight major areas. Additionally, participants were asked to provide a self-assessment of vocational difficulties. Both seropositive asymptomatic and seropositive symptomatic groups evidenced higher rates of neuropsychological (NP) impairment than the control group did. Regarding employment, after controlling for depression and other medical symptoms, findings demonstrated that of the 289 HIV-infected men, those who showed NP impairment were more likely to be unemployed than the unimpaired HIV-infected men. Of the HIV-seropositive participants who were employed, NP impairment was found to relate to self-reported decreases in job-related abilities. Overall, these findings suggest that mild NP impairment relates to disruption in employment status and possibly real and/or perceived job performance. Therefore, an assessment of perceived NP functioning is important to include when examining work adjustment in PLWHA.

In a study a couple years later, Heaton et al. (1996) found similar results. This study examined NP impairment in 45 male participants (HIV– controls who were NP

normal, $n = 13$; HIV+ who were NP normal, $n = 18$; HIV+ who were NP impaired, $n = 14$) using the same instrumentation as the earlier study. Of those HIV+ individuals who were NP impaired, the majority (78%) were mildly impaired. While rates of unemployment were highest for participants who were moderately to severely impaired, mildly impaired participants had an elevated rate of unemployment when compared with their unimpaired counterparts. After controlling for high levels of anxiety and depression and clinically significant medical symptoms, the associations between NP impairment and vocational difficulties (i.e., unemployment as well as complaints of reduced functioning at work) continued to be statistically significant. These findings are consistent with the earlier study's findings.

A recent longitudinal study had findings that are consistent with earlier studies regarding the relationship between NP impairment and employment. Rabin et al. (2004) examined predictors of employment of men with HIV/AIDS (82% of the sample had an AIDS diagnosis). Neuropsychiatric, psychosocial, and medical assessments were administered on six occasions over a 30 month time period. The sample was comprised of 141 men with HIV/AIDS with mean age of 40 years ($SD = 8$). The authors reported that 42 % of the sample was nonwhite (20% Hispanic, 16% black, 6% other), and 88% had at least some education following high school. Results demonstrated that disability benefit restrictions, depression, physical limitations, cognitive functioning (executive function), and education predicted unemployment or partial. Not only is Rabkin et al.'s study consistent with past research on NP and employment in PLWHA, it also supports the current study's contention that psychosocial variables should also be examined when

predicting employment outcomes in PLWHA. Literature on the contributions of psychosocial factors in employment and HIV research is reviewed later in this chapter.

A limitation of these studies, much like other studies examining employment status, was that employment status/change was defined as either “employed” or “unemployed,” where participants who changed to a less stressful job or were working at least half time were categorized as employed, regardless of whether their work abilities had diminished. Additionally, of important note, the data in these studies may be biased, for participants were relatively young, mostly white men in early stages of HIV disease. It is important to note that more recent studies have examined employment in nonwhite populations. Future studies should consider examining work hours in addition to employment status, as well as consider including more women and persons of color and of ranging ages and disease stages.

Biomedical Factors and Job Characteristics

Another approach to understanding how disease progression relates to work has been to examine the effects of role functioning, job characteristics, and disease severity on loss of employment. In terms of life roles, a recent study examined the relation between physical health and role functioning, which involve useful markers of functioning and adjustment related to work activities (Crystal, Fleishman, Hays, Shapiro, & Bozzette, 2000). Crystal and colleagues (2000) conducted a nationally representative survey, in which there were 2,836 HIV-infected adults (77.5% male, 22.5% female) referred by health care providers and institutions. Respondents were between the ages of 18 and 50+, where the majority ranged in age from 30 to 49 (mean age of sample not reported). In terms of race, the sample was 49.2% white, 32.7% African American,

15.3% Hispanic, and 2.8% other. The respondents were surveyed on their physical functioning, defined as the “range of day-to-day physical activities,” and role functioning, referring to “ability to carry out work-related tasks (whether paid or not).” Physical limitations were measured using a nine-item scale that assessed basic life activities (e.g., feeding oneself, dressing), instrumental activities (e.g., shopping), and mobility (e.g., getting around the house, climbing stairs), which demonstrated good internal reliability. Additionally, role functioning was assessed using the AIDS Clinical Trial Group SF-21 measure of role limitation. Several other measures of health status were utilized, such as CD4+ cell count, 14 HIV-specific symptoms (e.g., pain, fatigue), and use of protease inhibitors. Overall, findings demonstrated that role limitations, such as working at job, house, or school, were reported more often than limitations of physical tasks. Greater role and physical limitations together related to older age, lower health status (e.g., low CD4+ cell count, more symptoms), greater symptom burden (symptoms affecting functioning), and lower educational attainment. These findings are important in demonstrating the need to facilitate and understand adjustment in the work environment, especially as symptoms become more intrusive. Unlike previous studies, this study sought a nationally representative sample, increasing its generalizability.

More specific to the workplace, Massagli, Weissman, Seage, and Epstein (1994) found that both HIV-infected persons’ characteristics and job characteristics (e.g., mental tasks, physical tasks) were related to length of employment. The sample consisted of a total of 305 participants. The majority of the sample was male (92.8%) and gay (69.3%). In terms of race/ethnicity the sample was 63.3% white, not Hispanic, 22.0% black, 10.8% Hispanic, and 3.9% other. The majority of the participants had greater than a high school

education. Results demonstrated a relation between job characteristics and employment, such that HIV-infected persons who had jobs that involved more mental effort than physical effort worked significantly longer after diagnosis. This finding has implications for the differential experiences based on type of occupation.

Summary of Biomedical Contributors

While most studies have examined the relations between general presence of symptoms (asymptomatic versus symptomatic) and employment status, as well as neuropsychological impairment and employment status and/or job experiences, there is still a need for studies to investigate the relations between physical and medical HIV-related symptoms and employment status and attitudes about work. Additionally, some future studies examining disease characteristics and employment status should seek to include more women and persons of color, as well as assess for possible differences among the groups.

There remains to be a dearth of studies that have examined employment in PLWHA, and there continues to be a need for further research on how disease progression relates to employment and work adjustment in this population. The current paucity of research might be related to decreased interest when it appeared that antiretroviral treatments were allowing people to remain employed and return to work. Also, recently, the demographics of HIV cases have shifted to include more people of color and women, many of whom may have not successfully entered the job market to the extent that the people who became infected earlier (i.e., white gay men) had. In addressing some issues regarding diversity within PLWHA, the next section in this review of the literature delineates the need to understand possible differences in the

course of the disease and employment status based on socioeconomic status, gender, and ethnicity.

Biosocial/Demographic Contributors in HIV and Work

Biosocial contributors or demographic characteristics include biological factors that are, to some extent, operationalized by social constructions (Hoffman & Driscoll, 2000). These variables include the following important constructs: (a) race, ethnicity, and culture; (b) socioeconomic status (e.g., income and education); (c) gender; (d) sexual orientation; and (e) environmental factors (e.g., urban versus rural).

In understanding health status in terms of employment status and work adjustment in PLWHA, it is important to assess biosocial contributors, such as SES, gender, sexual orientation, race and ethnicity, and environmental factors. These variables can contribute to understanding disease progression, access to medical care, disease exposure, and other sociopolitical experiences of PLWHA. The most recent U.S. Center for Disease Control (CDC) Surveillance Report (2002) based on data collected in 39 states, stated that the estimated number of new HIV/AIDS adult and adolescent cases in 2002 totaled 43,792 where about 74% were males, and 26% were females. The estimated number of HIV/AIDS adult and adolescent cases reported from the beginning of the epidemic through 2002 is 877,275, where 82% were males, and 18% were females. These percentages reflect the trend, where the estimated number of new HIV infections in females is growing. A 2003 NIAID report stated that as many as 950,000 Americans may be infected with HIV, where one-quarter are unaware of their infection.

Change in the epidemic over the years, reflects a growing proportion of AIDS cases involving African Americans, Hispanics, and women (Stoskopf, Richter, & Kim,

2001). The NIAID (2003) stated, “The epidemic is growing most rapidly among minority populations and is a leading killer of African-American males ages 25 to 44.

(<http://www.niaid.nih.gov/factsheets/hivinf.htm>). More specifically, it was reported that seven times more African Americans and three times more Hispanics than whites are affected by AIDS (CDC, 2003). These biosocial variables, such as gender, race, and sexual orientation, are important because of the differential experiences of prejudice, poverty, and lack of access to health care and private insurance. Moreover, fewer of these individuals may be in the job market.

Some studies have examined relationships among various biosocial contributors in PLWHA. In a nationwide study of 11 health departments, Diaz et al. (1994) worked with the CDC to assess the SES of persons living with AIDS. The sample was representative of all persons living with AIDS in the United States, and 77% of those who were contacted agreed to participate in the study. Overall, 79% of the participants reported that they changed jobs since the time they were diagnosed with HIV; of that group, 67% quit their job due to illness, 16% decreased their hours or changed jobs because of the illness, 6% were laid off, and 11% made job changes not related to their illness. The study demonstrated significant differences in SES (educational levels, income, and employment status) based on gender and mode of HIV exposure. Furthermore, within each gender and within exposure groups, differences in SES were found based on race/ethnicity. Significantly more females than males were unemployed and had an annual household income of less than \$10,000. In terms of mode of HIV exposure, regardless of gender and race, injecting drug users demonstrated the highest rate of unemployment, whereas men who had acquired HIV from male–male sex had the

lowest rate of unemployment. It is important to note that females and injecting drug users are less likely to be in the workforce even before becoming infected with HIV.

One study focused on the functioning of African American individuals living with HIV/AIDS, a group whose infection rates are increasing. Stoskopf, Richter, and Kim (2001) examined predictors of perceived health status, including daily task functioning, in African American individuals ($N = 111$; 60 males and 51 females) recently diagnosed and living with HIV/AIDS. A combined measure was used to assess health status using a gauge of perceived health and of daily task functioning. General perceived health, ranging from excellent health to poor health, was assessed, where 38 participants reported excellent health, 55 indicated good health, 16 reported fair health, and 1 reported poor health. The categories were combined to form two categories, such that excellent and good made up one category, while fair and poor made up another. Participants falling in the excellent/good grouping received a score of 1, and the participants in the fair/poor grouping received a score of 0. The other part of this health status variable involved participants receiving one point for each of six daily tasks that they could perform (e.g., bathe alone, dress alone, clean alone). The health status proxy variable was then calculated by adding the points for perceived health and for daily tasks. In terms of the predictor variables, the first cluster of predictors involved biological factors, which were CD4+ T cell count, age, and gender. A second construct was a socioeconomic factor involving the measurement of type of occupation, current employment status, income, type of health insurance, financial support (i.e., Social Security Income and Social Security Disability Income), access to primary medical care, level of education, and marital status.

Results of the Stoskopf et al. (2001) study demonstrated that a significant difference exists in health status between females and males, such that females reported lower health status than males. Of particular interest in the present study, those individuals who were unemployed reported significantly lower levels of perceived health status than employed individuals. The same result was found for differences between individuals with lower and higher levels of education. Differences in health status were also found among people with different types of insurance and between those receiving Social Security Disability Income and those who do not, where health was progressively worse as level of insurance was worse. As lower health status predicted lower levels of employment, variables such as type of insurance and gender, which were also shown to relate to health status, may also relate to employment. This study, however, did not test for such relations.

Summary of Biosocial Contributors

The past research describing the SES of individuals with HIV, in terms of educational attainment, income, and employment status, and examining the differences in SES based on race/ethnicity, gender, and mode of exposure is important in demonstrating employment experiences in PLWHA. Previous research suggests that females are less likely to be employed than males and more likely than males to have lower income (e.g., Diaz et al., 1994). In terms of exposure groups, injecting drug users had the highest rates of unemployment, whereas the exposure group of males who have sex with males had the lowest rate of unemployment (e.g., Diaz et al., 1994). Additionally, past research demonstrated that females, persons with lower levels of education, and persons with lower insurance coverage were more likely to report lower health status, where lower

health status was found to predict lower levels of employment (e.g., Stoskopf et al., 2001). Understanding how various biosocial variables may affect health and job opportunities is especially important when attempting to examine the extent to which assorted biomedical, biosocial, and psychosocial factors differentially explain differences in employment and work adjustment in PLWHA. The next section discusses psychological adjustment variables and social/environmental factors that have been found to predict health status variables, and it specifically addresses those variables that have been studied in PLWHA regarding employment status.

Psychosocial Contributors and HIV

The psychosocial concentric circle includes psychological and social variables. This placement in the model (closest to health status) reflects the importance of psychosocial variables and their possible mediating or moderating roles in the relation between biomedical and biosocial factors and health status (Hoffman & Driscoll, 2000). Past research has focused on psychological factors, including affective, cognitive, and behavioral variables, such as depression, self-esteem, hopelessness, optimism, and coping in predicting health status (e.g., physical health, well-being) in PLWHA (Billings, Folkman, Acree, & Moskowitz, 2000; Bower, Kemeny, Taylor, & Fahey, 1998; Fleishman & Fogel, 1994; Hays, Turner, & Coates, 1992; Mulder, Vroome, Griensven, Antoni, & Sandfort, 1999; Nicholson & Long, 1990; Pakenham et al., 1994; Perkins, Stern, Golden, Murphy, Naftolowitz, & Evans, 1994; Taylor, Kemeny, Bower, Gruenewald, & Reed, 2000). Researchers have demonstrated that, in addition to psychological factors, social and environmental factors are important in relation to health

in PLWHA and may act as buffers between illness-related stress and adjustment (Hays et al., 1992; Nicholson & Long, 1990; Pakenham et al., 1994).

Past research has linked acute stress, such as hospitalization, and persistent negative circumstances (e.g., chronic disease) to psychological consequences and adjustment (Kessler, Price, & Wortman, 1985). However, adjustment and psychological consequences differ depending on individuals' internal experiences and personal resources (e.g., mood), as well as external resources (e.g., social support).

In comparison with the number of studies that have examined psychosocial factors and how they contribute to physical health in PLWHA, there are very few studies that have studied the spectrum of psychological health and various social and environmental variables in their relations to employment variables (e.g., employment status) in PLWHA, in addition to or over and above the biomedical variables (e.g., disease stage, symptoms). As with biological factors, no studies have examined psychosocial variables in relation to work adjustment (e.g., job satisfaction) in PLWHA.

The next few sections of this review of psychosocial contributors in the adjustment process of PLWHA present literature on psychological adjustment and social support, as they are unique considerations affecting PLWHA. Within the sections, the few studies that have examined these psychosocial variables in relation to health and employment in PLWHA are presented.

Psychological Adjustment

Depression has been found to affect 15–35% of PLWHA, compared with 3% in the general population (Hoffman, 1997; Perkins et al., 1994). Additionally, research has demonstrated that various psychiatric disorders (e.g., anxiety and depression) have been

found to be more prevalent in PLWHA when compared with community controls (e.g., Atkinson & Grant, 1994; Myers & Durvasula, 1999). More recently, researchers found that depression was underdiagnosed in PLWHA (e.g., Asch et al., 2003). Alternatively, other researchers have found there to be no differences between PLWHA and seronegative controls in psychiatric disorders after controlling for premorbid psychiatric and substance abuse histories (e.g., James, Rubin, & Willis, 1991; Perkins et al., 1994). The link between HIV and depression is further complicated by biosocial factors, such as sexual orientation, ethnicity, and gender, because individuals may experience differing levels of prejudice based on these variables and therefore may experience greater psychological distress (Myers & Durvasula, 1999; Rosenberger et al., 1993). Overall, however, mood is an important factor to consider when examining adjustment in PLWHA in the workplace.

Mood, such as negative or positive mood, is an important construct that is closely linked to cognition and motivation (Lazarus, 1991). Mood can affect how people deal with their surrounding environment and stressors. This is particularly relevant when examining how one deals with and adjusts to chronic stressors, such as chronic illness, and may affect adjustment in the workplace. Mood has been examined in PLWHA in terms of disease progression, psychological adjustment, and life functioning, such as employment. Before discussing how mood relates to health and employment in PLWHA, a brief overview on the construct of mood is presented.

Conceptualizing Mood. Mood is a construct that has received attention in various areas of psychology. When discussing mood, people are often referring to “diffuse” and continual affective states, focusing on either positive or negative mood (Gendolla, 2000;

Morris, 1989). While mood is seen as a somewhat ongoing state, emotions are often conceptualized as affective reactions to specific significant events, defining an individual's relationship with the environment (Gendolla, 2000).

Mood can encompass feelings of depression and anxiety, as well as happiness, just to name a few examples. Psychological distress, which has been used in discussing negative mood, can be conceptualized as emotional experiences involved in depression and anxiety, including feelings of hopelessness, sadness, tension, and nervousness, and can involve a lack of energy and loss of enjoyment in activities (see *DSM-IV* [American Psychiatric Association, 1994]). As higher levels of psychological distress (e.g., depressive symptoms) have been found to relate to greater physical symptoms in PLWHA (e.g., Hays et al., 1992) and have been found to predict greater levels of unemployment in PLWHA (e.g., Sowell et al., 1997), this component of mood (i.e., psychological distress) will be included in the present study of work adjustment in PLWHA.

On the other hand, mood can be characterized as positive, involving feelings of contentment, happiness, and optimism. Positive mood, also referred to as psychological well-being, has been linked to better health in PLWHA (e.g., Taylor et al., 2000). Presently, no studies have focused on the relation between psychological well-being and employment in PLWHA. In order to address the contribution of mood in terms of both negative and positive emotional experiences, the present study aims to assess both psychological distress and psychological well-being in predicting adjustment in PLWHA. The next section provides a greater discussion of the literature on the relation between mood and health in PLWHA.

Mood and Health. Mood, including psychological distress and psychological well-being, is important in terms of both physical health and psychological adjustment. In one direction, diminished health, which can affect life functioning, can contribute to feelings of depression and hopelessness. Additionally, changes in physical health can affect mood via physiology, which may be a risk factor for mood disorders (Lyketsos, & Treisman, 1996).

Hays et al. (1992) discussed a number of factors that may contribute to depression in PLWHA when individuals begin to experience HIV symptoms, which may include experiencing a lack of control in one's life, change in self-concept (from "healthy" to "sick"), worry over how illness affects personal relationships and career, having to confront the illness rather than avoiding it, having to disclose the illness to family and employer, feelings of discomfort from the symptoms, and ultimately confronting decline of health and premature death. In turn, these feelings of depression and anxiety can affect health, indirectly through diminished self-care, for example, and directly contribute to lower levels of health, such as decreased immune functioning. In fact, researchers have found that depression and feelings of hopelessness relate to diminished physical health in PLWHA (e.g., Cohen & Herbert, 1996). However, Billings et al. (2000) posited that the link between mood and physical symptoms can be complicated, as negative mood has been argued to contribute to exaggerated reporting of physical symptoms, either through misinterpretation of normal bodily sensations or through exaggeration of verified illness.

In addition to relating to physical health, negative mood (psychological distress) can involve decreased motivation, which also can affect how an individual adjusts to or copes with illness and the environment (Fleishman & Fogel, 1994). In fact, hopelessness

has been linked to greater use of avoidance and disengagement coping, which can negatively affect life functioning and relationships, such as workplace functioning (Carver, Scheier, & Weintraub, 1989). Considering this possible vulnerability to psychological distress, personal and social resources are important and may buffer the stress in PLWHA's lives. Personal resources, such as adaptive coping, and social resources, such as social support, have consistently been found to relate to better health and adjustment in PLWHA (e.g., Billings et al., 2000). The role of social resources will be discussed later in this review of the literature.

While psychological distress has been found to relate to lower levels of health and adjustment in PLWHA, greater levels of positive mood and optimism (i.e., psychological well-being) have been found to predict better physical health (Taylor et al., 2000). Unlike a depressed mood, optimism relates to greater motivation and active coping (Carver et al., 1989). Taylor et al. (2000) defined psychological resources as optimism, a sense of personal control, and ability to find meaning in one's life experiences and found that the promotion of such beliefs predicted better physical health in PLWHA even if the beliefs were positive illusions (i.e., not based on evidence). The authors further postulated that these psychological resources may also contribute to active coping and use of social resources, which have also been found to promote health and adjustment (e.g., Billings et al., 2000; Fleishman & Fogel, 1994). Considering the importance of both psychological distress (e.g., negative affect, depression) and psychological well-being (e.g., positive affect, optimism) in the functioning of PLWHA, mood should be considered when examining areas of life functioning, such as employment. Next is a discussion on studies that have examined mood in relation to employment.

Mood and Employment. Mood variables are among the few psychological variables that have been examined in relation to PLWHA's employment status. Again, no studies have examined positive mood in relation to employment status variables in PLWHA.

Low-Beer et al. (2000) examined the effects of triple-drug combination therapy with protease inhibitors on depressive symptoms. Employment status, defined as employed or not employed, was included and was treated as a peripheral or descriptive variable. The researchers assessed depressive symptoms in 453 men and women enrolled in an HIV/AIDS treatment program before and after initiating the medications. Using the Centre for Epidemiologic Studies–Depression Scale (CES-D), the researchers found that before treatment about half of the participants (52%) were depressed. Compared with less depressed participants, depressed participants were less likely to be employed and more likely to have a lower income (less than \$10,000). Before testing for treatment effects on depression, scores were adjusted for CD4 count, employment status, income, age, and baseline CES-D. After controlling for these variables, the researchers found that there was a significant improvement in depressive symptoms and positive affect. Unfortunately, the researchers did not examine changes in employment status in order to test the relation between mood improvement and employment.

Again, it is important to point out that while researchers have examined positive affect and optimism in relation to physical health (e.g., Billings et al., 2000), studies examining predictors of employment status have not included these psychological well-being variables. The present study intends to focus on psychological distress in terms of depression and anxiety, as well as examine the role of psychological well-being in terms

of reported happiness and calmness, in predicting work adjustment in PLWHA. Before discussing other studies that examined mood and employment in PLWHA, the literature on social support will be presented because the remaining studies involving mood also investigated social support in relation to employment.

Social Support

In addition to the importance of psychological adjustment factors, such as mood variables, in considering work adjustment in PLWHA, social support has been found to act as a buffer in minimizing the deleterious effects of various disease-related stressors and therefore to promote better health outcomes (e.g., Swindells et al., 1999) and employment in PLWHA. In other populations, greater social support in the workplace (e.g., from coworkers and supervisors) has been found to contribute to workplace adjustment, such as greater job satisfaction (e.g., Long, Kahn, & Schutz, 1992) and lower levels of burnout (e.g., McRaith & Brown, 1991).

This review of social support literature begins with a discussion of how social support has been conceptualized and measured. Within the section, social support will be discussed not only in terms of various positive supports but also in terms of negative social experiences, such as discrimination and stigma. Additionally, in illustrating the importance of social support regarding health and employment, a brief review of social support's buffering effects in the relation between stress and health outcomes is presented. Finally, research specifically focused on PLWHA's experiences of social support relating to health, and then in relation to employment, will be discussed.

Conceptualizing Social Support. Although social support has been investigated in multiple studies, defining this construct has been found to be difficult. The present study

defines social support as the availability of others for support, focusing on workplace support, and satisfaction with the support of those who are available. Sarason, Levine, Basham, and Sarason (1983) found that availability and satisfaction with support negatively related to anxiety, depression, and hostility, factors that can be disruptive in the adjustment process, such as work adjustment. Also, work support characteristics in the present study include perception of discrimination in the workplace in order to capture the range of social experiences in the workplace environment faced by PLWHA. This perception of discrimination is important, as researchers have found that concern about discrimination contributes to how PLWHA feel about their work experience (e.g., Brooks & Klosinski, 1999). While perception of discrimination in the workplace likely translates into less available support and dissatisfaction with support, discrimination is still important to measure in assessing the relationships in the workplace because some workers may be dissatisfied with support but may not perceive discrimination. In other words, dissatisfaction with support in the workplace cannot be assumed to include perceived discrimination. Distinguishing whether or not perception of discrimination is a part of the social experiences of PLWHA in the workplace is especially important in its implications for workplace policies and interventions. More discussion on these support factors will follow a review of the origin and course of social support theory and research.

Social Support and Health. In discussing the beginnings of the social support construct, Sarason, Sarason, and Pierce (1990) point to Cassel (1976) and Cobb (1976). Cassel studied the intrusion of disease agents in the environment of both animals and humans. He concluded that instead of focusing on ridding the environment of the

stressor, the enhancement of social support should be sought to promote prevention of the harmful effects from the stressor. Cassel discussed social support in general terms and was not explicit about the definition of the construct (House, 1981). Cobb was more explicit in defining social support. He studied the preventive functions of social support for people dealing with life stressors such as alcoholism, chronic illness, and life transitions. He defined social support as conveying three classes of information: (a) emotional support, which is information that contributes to people's feelings that others care for them; (b) esteem support, which is information that makes people feel that others value them; and (c) network support, which is information that contributes to people's feelings that they are a part of a communicative and collaborative network (Cobb, 1976; House, 1981).

In 1978, Gottlieb developed a model that was based on elements of social support from earlier models, including Cobb's (House, 1981). Gottlieb's model embodies four categories of helping (supportive) behaviors. The first category is "emotionally sustaining behaviors," which can provide feedback, emotional support, and encouragement. The second category is "problem-solving behaviors," which encompass previous models' aspects of tangible, appraisal, material, and guidance supports. The third category is indirect support, which House contends is a more general form of emotionally supportive behavior. An example of this support is unconditional availability to the source soliciting support. House concluded his description of the Gottlieb model with the final category "environmental action," which is similar to "problem-solving behaviors" but is specific to changes made on the environment. This model demonstrates that social support can function in supporting emotional needs and problem-solving

needs. Moreover, these supports can come from friends, family, coworkers, and supervisors.

Sarason et al. (1990) described three levels of measurement in assessing social support. The categories are (a) the social network, how one is integrated into and connected within a group; (b) received social support, referring to the actual support received by an individual; and (c) perceived social support, focusing on the support one feels is accessible for use. Sarason et al. postulated that perceived social support is the only measure that has been consistently found to relate to health outcomes. Perceived support is assessed in the present study.

Combining the methods of measuring perceived availability of social support and sources of social support (e.g., friends, family, coworkers), Sarason et al. (1983) included the dimension of satisfaction with social support. They believed that merely the availability of support was not enough to predict adjustment and that these supports needed to be seen as adequate. Relevant to the present study, satisfaction with support has been found to relate to better physical health in PLWHA (Hays, Turner, & Coates, 1992). Similarly, there is also evidence that satisfaction with support predicts higher levels of quality of life in PLWHA (Swindells et al., 1999). Therefore, in addition to measuring availability of support in the workplace, the present study proposes to conceptualize and assess social support in terms of satisfaction with support considering the evidence that satisfaction with support is important in relation to health and adjustment in PLWHA.

Social Support and Stress. In their seminal writings, Cassel (1976) and Cobb (1976) defined social support based on its relation with stress in the environment. More

specifically, Cobb addressed the role of social support in protecting people from the consequences of possible stressors associated with experiences such as alcoholism, tuberculosis, employment termination, life transitions, bereavement, and aging. This assumption that social support diminishes stress or buffers the deleterious consequences of stress is the basis of the conception of the construct in research. Considering the foundation of social support in relation to health and life transitions, such as change in employment, the use of this variable in understanding work adjustment in PLWHA is imperative.

Not only has social support been found to act as a buffer for stress, it has been demonstrated as having a main effect on stress and health. House (1981) illustrated these relations by examining the effects of social support on work stress and health. A main effect was found to occur in two ways. First, social support can directly affect health outcomes. A second main effect is that social support can directly diminish occupational stress. House explains that support could take the form of assistance through supportive problem-solving behaviors or emotionally supportive behaviors. Alternatively, a buffering effect occurs when social support moderates the relation between stress and health, such that only at high levels of stress does social support relate to health. Social support has been found to both buffer and directly act on stress to reduce negative effects (Newcomb, 1990; Ross, Altmaier, & Russell, 1989; Russell, Altmaier, & Van Velzen, 1987; Sarason et al., 1990; Thoits, 1986). Of central interest in the present study are social support's main and buffering effects on work adjustment in PLWHA.

Discrimination and Stigma. In addition to social support resources and the adequacy of such resources, perception of discrimination and stigma goes beyond

dissatisfaction with workplace support and is an important social factor in the workplace experiences of PLWHA (Brooks & Klosinski, 1999; Hoffman, 1996). In defining stigma, Goffman (1963) described it as “an attribute that is deeply discrediting within a particular social interaction” (p. 3; see also Hoffman, 1996).

Hoffman (1996) pointed to a couple of major sources of stigma related to HIV, such as its association with death and the view that it can be readily transmitted by “already stigmatized groups—gay men and injecting drug users” (p. 34). Additionally, Hoffman pointed out that HIV is transmitted almost always through acts (e.g., sex) and behaviors that are private or not discussed in the workplace and that people often wonder what one *did* to become HIV+. Considering the possibility of stigma and discrimination in social interactions, such as those in the workplace, these factors should be included when examining work adjustment in PLWHA. In fact, research has shown that PLWHA report concern about discrimination and stigma when considering whether or not to return to work (Brooks & Klosinski, 1999). Similar to how social support has been linked to physical and psychological adjustment in PLWHA, perception of discrimination and negative social interactions may also negatively relate to health and well-being in PLWHA. Stigma has also been conceptualized as a factor affecting cognitive appraisal in Lazarus’s stress and coping theory, which has been found to relate to PLWHA’s sense of well-being and psychological adjustment (Sowell et al., 1997). The more a work environment is perceived as discriminatory, often causing an individual to feel stigmatized, the more negative one’s work attitudes are.

Because of concern about discrimination in the workplace, in 1996 the Americans with Disabilities Act (ADA) extended protection to HIV+ people and later to private

sector employees who are HIV+. Antidiscrimination guidelines refer to treatment in the workplace regarding hiring and firing practices, promotions, pay, and benefits, just to name a few. Additionally, provisions included “reasonable accommodation,” such as flexible work hours. The issue of “reasonable accommodation” continues to need to be addressed and clarified by employers and courts as workers’ illnesses progress (Goldberg & Sprotzer, 1998). Additionally, there are issues with provisions of privacy in the workplace regarding disease status. While the ADA has confidentiality provisions, employers may obtain sensitive medical information regarding employment decisions (Goldberg & Sprotzer, 1998). Although protection is being addressed in the courts, there remains concern about stigma and discrimination within the workplace.

Although researchers have found that a significant number of PLWHA are concerned about disclosing their disease status and fear discrimination (e.g., Brooks & Klosinski, 1999), no studies have examined how perception of discrimination relates to work adjustment in this population. A couple studies have examined perceived discrimination by lesbian, gay, and bisexual individuals in the workplace and found that perceived discrimination is related to negative work attitudes (i.e., job dissatisfaction) and fewer promotions (e.g., Ragins & Cornwell, 2001). Ultimately, these findings support the importance of examining characteristics such as health status and perception of discrimination and stigma, which can be multifaceted when studying work adjustment in PLWHA. This again is because PLWHA are individuals who suffer from a stigmatized disease, may experience some level of disability, and may be a sexual and/or racial minority in their work environment. It is essential that a model of work adjustment in

PLWHA account for perception of discrimination in the workplace in view of the potential for discrimination in the workplace against PLWHA.

Considering the number of psychological and social variables that may be predictive of employment status in PLWHA, along with the various biomedical and biosocial predictors described in earlier sections, it is helpful to examine past research that has integrated these variables. The following section describes studies that have included the present study's major psychosocial predictors of interest (e.g., mood, social support) and employment status. It is important to note, however, that some of the studies did not focus on employment status, and some only occasionally examined the direct relations between the psychosocial variables and employment.

HIV, Physical Health, Psychological Adjustment, Social Support, and Employment

In their study on the quality of life in HIV-infected women in the southeastern United States ($N = 264$), Sowell et al. (1997) included the social factors of social support, material resources, disclosure, and family functioning in examining quality of life in PLWHA. Psychological factors that were measured were stigma, emotional distress, intrusive thoughts, avoidance, and fatalism. The stigma scale was constructed by the authors to measure the frequency of concern about how others perceived the individual (e.g., whether one felt ashamed of illness, felt blamed by others). Quality of life was defined as the variables of daily functioning, general anxiety, and symptoms. The majority (70%) of the sample had a household income of less than \$10,000. Twenty-one percent of the participants were either employed full-time or employed part-time. Regarding disease status, 30% of the participants were classified as asymptomatic, 24% were categorized as symptomatic, and 46% had a diagnosis of AIDS. Employment status

was examined in relation to the quality of life variables (symptoms, daily functioning, and general anxiety). However, employment status was not examined in relation to social support variables. Regarding employment, the findings demonstrated that full-time workers were characterized as younger and asymptomatic and had lower levels of limited daily functioning. Working women (full-time) also had lower levels of psychological distress (i.e., general anxiety). This was the only finding in which employment was examined in relation to the other research variables. In terms of the social factors, detached mode of family functioning predicted greater levels of anxiety, whereas a cohesive family related to lower levels of anxiety. Additionally, cohesive family functioning and greater material resources negatively related to symptoms. Alternatively, disclosure of disease status to others was positively correlated with symptoms. This study did not focus on employment as an outcome, but it did indicate how employment status relates to quality of life in a similar way that social support relates to quality of life. Therefore, it would be important to examine how these variables relate to one another in predicting adjustment to work.

In another study where employment status was included as a variable but was not an outcome variable, Swindells et al. (1999) examined the effects of social support, coping style, and hopelessness on quality of life (QOL) in 138 HIV-infected patients (92% male). The majority of the sample was white (70%), with the rest of the sample reporting as African American (22%), Hispanic (5%), Asian (1%), and other (2%). Additionally, the majority of the sample was gay or bisexual (67%). Regarding disease status, 34% of the participants were asymptomatic, 6% were symptomatic but not AIDS diagnosed, and 60% had a diagnosis of AIDS. The baseline median for CD4 count was

268, with a range of 4 to 796. The design of the study was longitudinal, such that the measures were administered at baseline, at four–six months, and at 12 months. The QOL measure (Medical Outcome Study Short-Form Health Survey; Ware & Sherbourne, 1992) assessed the domains of physical functioning, role functioning, social functioning, mental health, health perceptions, and pain.

Especially relevant to the present study, employment status in this study was an independent variable and was found to relate to QOL, such that those individuals who were employed had significantly higher levels of physical functioning, had significantly less pain, and perceived better health than their unemployed counterparts. The psychosocial independent variables, such as mood and social support, were not examined in terms of their relations to employment. In terms of the QOL variable, the findings demonstrated that satisfaction with social support, as measured with the Social Support Questionnaire (Sarason et al., 1983), predicted better QOL. Better QOL was also associated with greater use of problem-focused coping, whereas emotion-focused coping and avoidance coping were predicted by poorer QOL. As expected, greater levels of hopelessness, assessed using the Beck hopelessness scales (Beck, Ward, & Mendelson, 1961) predicted poorer QOL. Medication adherence was found to relate to higher QOL at six months.

While this research supports the present study's contention that physical health status, defined as physical and role functioning and pain symptoms, relates to employment, there continues to be a need to include the psychological and social factors in the prediction of employment variables. The present study seeks to extend and clarify

these prior research findings through examining the unique contributions of biological, psychological, and social factors in predicting workplace experiences in PLWHA.

Biopsychosocial Contributors, HIV, and Decisions about Work

In understanding work adjustment in PLWHA, a couple of studies have gone beyond merely measuring employment status as an indicator of work functioning. While work adjustment was not directly assessed in either study, both studies, which were mostly qualitative, examined the variables affecting the process of change in employment in PLWHA. These researchers (Brooks & Klosinski, 1999; Ezzy et al., 1999) actually examined the factors, such as work needs and values, that contribute to decisions regarding leaving a job and remaining at a job in PLWHA who were employed, as well as factors affecting decisions to return to work in PLWHA who were unemployed.

One study, which examined biological, psychological, and social factors as they relate to employment decisions, was a large survey conducted by Ezzy et al. (1999). More specifically, the authors examined the relations among disease progression, employment status, poverty, and economic hardship in their study of PLWHA. Additionally, the authors sought to examine the role of psychosocial variables in work-related decisions of PLWHA. Respondents who completed their survey were 925 PLWHA, which represented 8.3% of the PLWHA population in Australia during 1997. The authors did not report demographic information. A survey format was utilized to assess physical health, employment history, psychosocial functioning related to changes in employment status, income, and economic hardship. Multiple responses could be given for each survey question by respondents, and no standardized or validated measures were used. The authors found that those PLWHA who were not working and

wanted to return to work said that they wanted this change most commonly because of financial reasons, then for “psycho-emotional” reasons (e.g., to relieve boredom, to do something worthwhile), and last, because they were experiencing improved health. When respondents who were not currently working were asked why they had left work, the majority (71%) of responses cited “psycho-emotional” reasons (e.g., stress, depression, anxiety), while 50% of responses cited expected ill health. Among respondents who returned to work, the majority of their responses indicated that they wanted to return because of financial reasons, while 45% of participants’ responses cited returning because of “psycho-emotional” reasons (e.g., to relieve boredom, to do something worthwhile), and 26% of responses cited improved health. The authors, therefore, concluded that while physical health influenced decisions on leaving and/or returning to work, psychological factors and financial concerns were more plentiful in PLWHA’s responses, signifying the importance of the various reasons.

While Ezzy et al.’s (1999) findings were important in introducing the need to evaluate psychosocial factors in understanding the employment decisions of PLWHA, their methodology was problematic. They did not explicitly explain their qualitative or coding methods, nor did they adequately define the psychosocial constructs of interest. Additionally, the quantitative data that were reported, in terms of the questions they asked, were not validated measures and were reported in terms of frequency of answers to single items.

Although Ezzy et al. (1999) utilized a national sample, increasing their ability to generalize findings, they did not use standardized measures and were unclear how the results followed from the questions that were asked. While they provided the actual

items, the format of some of the questions was unclear. For example, for the item “Identify why you had stopped working (stress/depression/anxiety; low energy levels; poor health; to move to a different job; to have more quality time; retrenched/sacked; expecting illness in the future; to move to a different location),” it is unclear if the participants had to choose one reason from this list, if they could choose multiple reasons, or if it was open-ended. Additionally, the authors did not provide a rationale for categorizing the reasons for leaving work as they did. The stress/depression/anxiety reason, which was the authors’ “psychosocial” component, does not seem to necessarily fit as one category. A validated measure or procedure would be more likely to assess whether depression was a factor or if a symptom, such as low energy level, was more related to the physical effects of the illness.

A qualitative study utilizing a focus group format also found psychosocial factors, in conjunction with biomedical factors, to be important determinants in PLWHA’s feelings toward returning to work (Brooks & Klosinski, 1999). Brooks and Klosinski (1999) sought to develop a comprehensive framework illustrating the concerns of PLWHA who were interested in returning to work. Participants were randomly recruited from a randomly constructed list of 1,000 clients with HIV/AIDS. The researchers stratified the sample by race/ethnicity to represent the client population, and the sample was stratified by language to ensure participation by monolingual Spanish-speaking clients. Only clients who were not currently working were recruited for the focus groups. Of the 188 clients who were contacted via telephone to participate in the study, 70 agreed to participate, and ultimately 30 of these clients actually participated. Demographic information was collected using a set of 18 questions. The mean age of the participants

was 39 years ($SD = 7.8$), ranging from 21 to 57. Gender information was not reported. The sample was racially diverse, where 43.3% were white, 26.7% were black/African American, and 30.0% were Latino. The majority of the participants was low income and had more than a high school education. Focus group interviews were conducted, and a standardized set of questions was used for the focus groups (three groups/10 participants per group). The focus group interview data were transcribed and then were coded and classified into categories, concepts, and themes.

The categories that emerged regarding reasons for wanting to return to work were (a) psychological and emotional benefits of employment (e.g., sense of purpose, feelings of accomplishment, feelings of usefulness), (b) financial benefits of employment (e.g., independence, security), and (c) social and physical nature of work (e.g., to be around people, to be physically active). The categories that arose in the discussion of what would prevent participants from taking certain jobs were (a) health and medical conditions (e.g., uncertainty about health, jobs requiring excessive physical efforts), (b) medical benefits and financial issues (e.g., inadequate coverage, lower wage jobs), (c) psychological issues (e.g., fear, anxiety, shame, low self-esteem), and (d) social issues (e.g., stigma, prejudice, discrimination). In discussing what work schedule the participants preferred, when given various options, a few participants reported that they wanted 40-hour-a-week jobs (mostly for financial reasons), while the majority preferred working from home, being self-employed, and working part-time because of their individual circumstances. A frequent reason cited for wanting a part-time job was the ability to attend to medical needs and pace oneself based on levels of energy. When asked what type of job the participants preferred, two categories emerged: (a) psychological and emotional rewards

of a job and (b) characteristics of particular types of jobs (e.g., stability, security, based on past experiences and expertise).

Last, when participants were asked what their biggest concerns were in thinking about returning to work, several categories emerged. Reasons related to health and medical conditions were reported, where participants were worried about the course of the disease and their need for flexibility. Benefits were a concern cited only by the English-speaking participants. Across the groups, participants expressed concern about the high cost of HIV/AIDS medications that required most of them to possess certain health coverage. In low-wage jobs participants may make too much to qualify for government-subsidized drug plans, while they do not make enough to afford the needed AIDS drugs. They were also concerned about the effects that short-term and inconsistent employment might have on medical benefits. Other concerns were uncertainty about finding a job because of gaps in their employment history, as well as issues they might have to deal with once they were in the workplace. These workplace concerns included effects of disclosure and discrimination in the workplace.

While these studies are more illustrative of factors related to PLWHA's employment decisions, which is important in ultimately predicting work adjustment, there exist problems in their methodologies. The Brooks and Klosinski (1999) study provided important information regarding reasons PLWHA would want to return to work, which is information that has rarely been reported in the research. This exploratory methodology facilitates understanding of the unique experiences of the participants, which is especially important when studying issues in a population not previously researched. However, the focus group format of collecting data could affect how the participants answer the

questions, where the presence of others can bias one's answers. The participation rate was very low, which might be a function of the structure of the study (i.e., focus groups) as well as factors biasing the findings, such as motivation. The next step in exploring the experiences of PLWHA in the workplace, where findings can begin to be generalized, is to employ quantitative methods utilizing standardized measures. The present study proposes to conduct this method of research. These examinations of the various needs and values of PLWHA regarding their work experience support the importance of considering work adjustment from a biopsychosocial perspective, including examining physical health status (e.g., symptoms and physical functioning), social support, and perceived discrimination.

Summary of Psychosocial Contributors

Research on psychosocial variables in PLWHA provides preliminary evidence of how mood factors and work environment/social support variables may relate to employment and work adjustment PLWHA. Little research, however, has examined these relations directly, if at all. Previous studies that examined the psychosocial variables of mood and social support in relation to employment mostly used employment as a way to describe the sample. Those few studies that did directly examine employment, however, found that lower levels of psychological distress were associated with greater functioning and quality of life, which in turn related to higher levels of employment in PLWHA (e.g., Low-Beer et al., 2000; Sowell et al., 1997).

The qualitative and survey studies, which directly examined what PLWHA considered important in their employment decisions, supported the importance of mood and work environment variables, such as social support and concern about

discrimination, in addition to biomedical variables. There is even support that greater emotional distress contributed to quitting a job over and above ill health (Ezzy et al., 1999). Alternatively, some PLWHA reported psychosocial reasons for wanting to return to work, such as relief from boredom. In terms of support, returning to work was desired in order to connect with other people and gain social support (Brooks & Klosinski, 1999). Alternatively, fears of discrimination and stigma were reported as concerns in returning to work, which supports the present study's argument for including perception of discrimination when predicting work adjustment in PLWHA who are employed.

Summary of HIV and Employment Literature

Some of the major themes identified in the literature review suggest that biological, psychological, and social variables are essential in examining adjustment and employment in PLWHA. Within the area of biomedical contributors, it is evident that disease stage, symptoms, and physical and neuropsychological functioning are important predictors of employment status (e.g., Heaton et al., 1994; Yelin et al., 1991).

Additionally, biosocial variables such as gender, ethnicity, educational attainment, and socioeconomic status may affect employment status and adjustment in PLWHA (e.g., Stoskopf et al., 2001) and therefore should be reported and considered when studying work experiences of PLWHA.

In terms of psychosocial factors, mood and social support have been found to be associated to quality of life and with various areas of functioning in PLWHA (e.g., Sowell et al., 1997; Swindells et al., 1999). Additionally, past studies have demonstrated that emotional needs, social needs, financial needs, and medical needs as well as concern about discrimination are all factors that are reported as important in decisions about

employment in PLWHA (Ezzy et al., 1999). As almost no past research has focused specifically on work adjustment and previous studies have rarely examined the unique contributions of the various psychological, social, biosocial, and biomedical factors on adjustment, the present study proposes to investigate such a model related to work adjustment in PLWHA.

Chapter 3: Statement of the Problem

In addressing the lack of research on the adjustment of PLWHA in the workplace, the present study examined predictors of work adjustment, defined as satisfaction with current job, which has been found to relate to intention to turnover (Betz & Judge, 1994) and turnover (Porter et al., 1994). In order to capture the complexity of the factors involved in workplace adjustment of PLWHA, a biopsychosocial model will be utilized, which encompasses physical and mental health variables, as well as work environment/social support variables.

Descriptive Information

The first purpose of this study was to provide descriptive data. To date, there has been no empirical research examining work experiences and work adjustment in employed PLWHA. However, research has demonstrated that PLWHA are less likely to be employed than their HIV-seronegative counterparts (e.g., Kass et al., 1994), and therefore, was anticipated that on average job satisfaction levels of PLWHA are lower than the general population. Additionally, other work-related variables and descriptives, such as work hours, job tenure, intention to turnover, and type of occupation, were examined.

Biopsychosocial Predictors of Work Adjustment

In addition to providing descriptive information regarding work adjustment in PLWHA, the purpose of this study was to examine the predictors of work adjustment utilizing a biopsychosocial model through examining together the direct effects of the physical health, mental health, and social and environmental predictors on work adjustment (i.e., job satisfaction). Additionally, each part of the model was examined

for its unique contribution in predicting work adjustment, as well as the moderating effects of the support and work environment on the work adjustment variables were tested. Therefore, hypotheses were first framed in terms of correlations between each predictor and the work adjustment variables, followed by hypotheses addressing a biopsychosocial model. Before presenting the hypotheses, a brief summary of the literature that was used to inform the hypotheses is presented.

Biological Predictors. Past research has shown that greater HIV-related symptoms, such as pain and fatigue, and disease progression predict psychological adjustment, where the greater presence of symptoms is related to higher levels of depression and lower levels of positive mood (Billings et al., 2000; Hays et al., 1992). While work adjustment variables have not been examined in PLWHA, employment status and employment decisions (e.g., quitting work, returning to work) have been found to relate to disease progression and HIV-related symptoms, and physical health status, including physical functioning (Ezzy & De Vissor, 1999; Kass et al., 1994; Swindles et al., 1999). In terms of specific symptoms, Darko et al. (1992) found that disease status related to unemployment rates and symptoms of fatigue, although HIV-seropositive individuals who left work since acquiring HIV did not report fatigue as a central reason for them stopping work.

Instead of examining the biomedical predictors in terms of categorical disease stages (e.g., diagnosis and viral load), as is typically done in the research, the present study proposes to assess perceptions of physical health, which include pain and discomfort, as well as physical functioning and role functioning due to disease symptoms, when predicting work adjustment outcomes. While viral load is important

regarding levels of immunosuppression and relate to symptoms, individuals may not have an accurate or recent count of such data.

Similar to the relation between physical health status, cognitive functioning, which is associated with neuropsychological effects of HIV and AIDS, is expected to predict lower levels of work adjustment. The present study defines cognitive functioning in terms of perceived problems with memory functions, problem-solving, and attention. These areas are important as they have been found to relate to lower levels of employment in PLWHA (Heaton et al., 1994). Therefore, it was hypothesized that impairment will also relate to lower levels of work adjustment.

Psychological Adjustment. Past research has found that PLWHA may be more likely to experience psychological distress than the general population (e.g., Perkins et al., 1994). Further, both psychological distress and psychological well-being have been found to predict physical health variables in PLWHA (e.g., Hays et al., 1994; Taylor et al., 2000). Additionally, lower levels of psychological distress (i.e., general anxiety) have been shown to be associated with greater physical and role functioning, which in turn related to higher levels of employment in PLWHA (e.g., Low-Beer et al., 2000; Sowell et al., 1997). While positive mood (psychological well-being) has not been examined in relation to employment variables in PLWHA, it has been found to predict better physical health in this population (e.g., Taylor et al., 2000). Further, positive mood has been linked to better adjustment, in terms of greater use of adaptive coping and social resources in PLWHA (e.g., Billings et al., 2000; Fleishman & Fogel, 1994). Considering the importance of positive mood in relation to physical and psychological health in PLWHA, it is hypothesized that it will relate similarly to adjustment in the workplace.

Therefore a measure of mental health that accounts for both psychological distress and psychological well-being was utilized in assessing the effects of mood on work adjustment in PLWHA in the present study. In addition to mood variables, social and environmental variables were expected to be important in predicting work adjustment in the present study.

Work Environment and Social Support. Currently, no research has empirically examined workplace social support in PLWHA. There is evidence, however, that PLWHA desire to return to work in order to gain social connections (Ezzy et al., 1999). Further, research has found PLWHA to report deterioration in social connections as an effect of stopping work (Ezzy et al., 1998). These findings provide support of the importance of social support at the workplace for PLWHA, which is consistent with other populations in terms of the effects of workplace support on work adjustment variables (e.g., Long et al., 1992).

In other areas of functioning, social support has been found to relate to health status and psychological adjustment in PLWHA. More specifically, satisfaction with social support has been shown to relate to psychological adjustment in PLWHA (Hays et al., 1992). The sources of support assessed in these past studies are support from friends and family. While social support has not directly been examined in terms of its relation with employment, both social support and employment status have been found to relate similarly to quality of life and health in PLWHA (e.g., Swindells et al., 1999). Considering the demonstrated importance of social support from friends and family in adjustment of PLWHA, the present study will examine the correlations between the non-work support variables and work adjustment variables.

Alternatively, perception of discrimination has been found to contribute to PLWHA's decisions regarding returning to work (Brooks & Klosinski, 1999). Perception of discrimination has not been examined in relation to work adjustment variables in employed PLWHA. However, in similarly stigmatized groups, such as lesbians and gay men, perception of discrimination has been found to relate to both job satisfaction and organizational commitment (Waldo, 1999). Considering that perceived discrimination related to sexual orientation may be an issue for PLWHA, apart from discrimination related to disease status, the former type of discrimination will be considered in the present study and included in the analyses.

In addition to the direct effects of work environment and support on work adjustment, there is likely to be moderating effects of these factors in the relation between physical and mental health and work adjustment. Much of social support literature and research supports the buffering and moderating effects of social support in terms of the relation between stress and health outcomes, including in the workplace (e.g., House, 1981). Therefore, the present study examined both direct effects of social support on work adjustment and the moderating effects of social support and perceived discrimination.

Hypothesis 1. The Relation of Biomedical Factors to Work Adjustment

Perceived physical health status as indicated by the a self-report measure of presence and burden of common symptoms involved in HIV/AIDS (physical function, cognitive function), with higher scores indicating better physical health (less symptom presence/burden), will be positively related to indicators of work adjustment, such that

better physical health (less symptom presence/burden) will be related to higher levels of work adjustment.

Hypothesis 1A: Physical health status, defined as perceived function, pain, and role function involved in HIV/AIDS (MOS-HIV; Wu et al., 1997), where higher scores indicate good physical health status and lower scores indicate poor physical health status, is positively related to job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983), such that poorer physical health is associated with lower levels of job satisfaction.

Hypothesis 1B: Physical health status, defined as perceived presence and burden of common symptoms involved in HIV/AIDS (MOS-HIV; Wu et al., 1997), where higher scores indicate good physical health and lower scores indicate poor physical health, is positively related to affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993) defined as feeling of attachment to one's organization, such that poorer physical health is associated with lower levels of affective organizational commitment.

Hypothesis 1C: Cognitive function (MOS-HIV; Wu et al., 1997), related to self report of memory, attention, and concentration problems, where higher scores indicate better cognitive functioning and lower scores indicate poorer cognitive functioning, is positively related to job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983).

Hypothesis 1D: Cognitive function (MOS-HIV; Wu et al., 1997), related to self report of memory, attention, and concentration problems, where higher scores indicate better cognitive functioning and lower scores indicate poorer cognitive functioning, is

positively related to affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993).

Hypothesis 2: The Relation of Psychological Factors to Work Adjustment

Psychological adjustment, defined on a continuum between emotional distress and psychological well-being, where higher scores indicate better mental health and lower scores indicate poorer mental health, is positively related to work adjustment variables, such that better mental health correlates with greater work adjustment and poorer mental health correlates with lower levels of work adjustment.

Hypothesis 2A: Mental health (MOS-HIV; Wu et al., 1997), defined as a combination of negative emotional states (e.g., depression/anxiety) and positive emotional states (e.g., calmness), where higher scores indicate better mental health and lower scores indicate poorer mental health, is positively related to job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983).

Hypothesis 2B: Mental health (MOS-HIV; Wu et al., 1997), defined as a combination of negative emotional states (e.g., depression/anxiety) and positive emotional states (e.g., calmness), where higher scores indicate better mental health and lower scores indicate poorer mental health, is positively related to affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993).

Hypothesis 3: The Relation of Perceived Social Support to Work Adjustment

Perceived workplace support, defined as the availability and reliability of social support from one's supervisor and coworkers, relates to work adjustment variables, such

that greater levels of perceived social support correlate with better work adjustment and lower levels of perceived social support correlate with poorer work adjustment.

Hypothesis 3A: Perception of the availability and reliability of support from supervisors (Social Support Questionnaire, Caplan et al., 1980), where higher scores indicate greater levels of social support and lower scores indicate poorer support, is positively related to job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983).

Hypothesis 3B: Perception of the availability and reliability of support from supervisors (Social Support Questionnaire, Caplan et al., 1980), where higher scores indicate greater levels of social support and lower scores indicate poorer support, positively relates to affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993).

Hypothesis 3C: Perception of the availability and reliability of coworker social support (Social Support Questionnaire, Caplan et al., 1980), where higher scores indicate greater levels of social support and lower scores indicate poorer levels of support, positively relates to job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983).

Hypothesis 3D: Perception of availability and reliability of support from coworker (Social Support Questionnaire, Caplan et al., 1980), where higher scores indicate greater levels of social and lower scores indicate poorer social support, positively relate to affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993).

Hypothesis 4: The Relation of Perceived Discrimination to Work Adjustment

Perceived discrimination in the workplace, defined as perceived discrimination based on HIV/AIDS status and sexual orientation, negatively relates to work adjustment, such that higher levels of perceived discrimination correlate with poorer work adjustment and lower levels of perceived discrimination correlate with greater work adjustment.

Hypothesis 4A: Perception of discrimination related to HIV/AIDS, defined as the number of HIV/AIDS-related discriminatory events experienced in one's workplace, negatively relates to job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983).

Hypothesis 4B: Perception of discrimination related to HIV/AIDS, defined as the number of HIV/AIDS-related discriminatory events experienced in one's workplace, negatively relates to affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993).

Hypothesis 4C: Perception of discrimination related to sexual orientation, defined as the observed and experienced prejudicial beliefs and behaviors related to sexual orientation in the workplace (revised Workplace Prejudice/Discrimination Inventory; James et al., 1994), where higher scores indicate greater prejudice observed/experienced, negatively relates to job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983).

Hypothesis 4D: Perception of discrimination related to sexual orientation (revised Workplace Prejudice/Discrimination Inventory; James et al., 1994), defined as the perceived and experienced presence of prejudicial beliefs and behaviors related to sexual

orientation in the workplace, negatively relates to affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993).

Hypothesis 5: Biopsychosocial Model of Work Adjustment

Biomedical factors, psychological factors, and social/environment factors will each contribute in the prediction of work adjustment. Psychosocial factors will contribute as much if not more to the prediction of work adjustment than biomedical factors. Finally, social/environmental factors will moderate the relation between biomedical and work adjustment factors and between psychological and work adjustment factors.

Hypothesis 5A. Biomedical factors, which were found to predict work adjustment in preliminary analyses will collectively contribute to a significant proportion of variance of job satisfaction.

Hypothesis 5B: Psychological factors (i.e., psychological adjustment) will significantly contribute to the variance of job satisfaction over and above the effects of the biomedical factors.

Hypothesis 5C: Work environment/support factors (i.e., coworker and supervisor support and perceived discrimination) will significantly contribute to the variance of job satisfaction over and above the effects of biomedical and psychological factors in predicting work adjustment.

Hypothesis 5D: Work environment/support factors will moderate the relations of biomedical and psychological factors to job satisfaction. Consistent with Judd, Kenny, and McClelland's (2001) definition of a moderator, moderation in the current model

involves a test of the statistical interaction of the physical and mental health variables with work environment/support (moderator), examining whether a variable that is a product of two factors (e.g., physical health \times environment/support) predicts job satisfaction over and above the factors' main effects.

Hypothesis 5E: Biomedical factors, which were found to predict work adjustment in preliminary analyses will collectively contribute to a significant proportion of variance of organizational commitment.

Hypothesis 5F: Psychological factors (i.e., psychological adjustment) will significantly contribute to the variance of organizational commitment over and above the effects of the biomedical factors

Hypothesis 5G: Work environment/support factors (i.e., coworker and supervisor support and perceived discrimination) will significantly contribute to the variance of organizational commitment over and above the effects of biomedical and psychological factors in predicting work adjustment

Hypothesis 5H: Further, work environment/support factors will moderate the relations of biomedical and psychological factors to organizational commitment.

Hypothesis 6: The Relation of Work Adjustment Variables to Intention to Turnover

Work adjustment measures (e.g., job satisfaction, organizational commitment) positively correlate with intention to stay/quit, defined as the extent to which one wishes to remain at one's current job, where higher scores on the intention to stay measure indicate a greater desire to remain at one's job.

Hypothesis 6A: Job satisfaction (FACES; Kunin, 1955; Job Satisfaction Scale; Cammann et al., 1983) is negatively related to intention to stay (Intention to Quit Measure; Colarelli, S. M. (1984).

Hypothesis 6B: Affective organizational commitment (ACS; Meyer, Allen, & Smith, 1993) will negatively relate to intention to stay (Intention to Quit Measure; Colarelli, S. M. (1984).

Chapter 4: Method

Design

This study used a descriptive, nonexperimental, cross-sectional, correlational design to examine the relations between biopsychosocial factors and work adjustment variables in persons living with HIV/AIDS (PLWHA).

Participants

Individuals responded to a request for persons who are living with an HIV or AIDS diagnosis and working at least part-time. Fifty-seven employed persons over 18 years of age and living with an HIV/AIDS diagnosis completed surveys and fit the criteria for study participation. Participants worked *a minimum of* (at least) 34 hours per week ($M = 35.33$; $SD = 19.77$). These participants found out about the study through online, newspaper, and flyer advertisements or through persons involved with HIV/AIDS care networks/consortiums in the Washington, D.C., and New York City metropolitan areas and in the State of Illinois. Table 1 displays a comprehensive description of the sample. Of these 57 participants, 36 were male and 21 were female; 2% of the sample identified as transgendered. Of the 36 male participants, 21 reported that they were gay, seven were heterosexual, six identified as bisexual, one identified as “other sexual orientation,” and one responded that he was unsure of his sexual orientation. Of the 21 female participants, two identified as lesbians, 14 were heterosexual, four identified as being bisexual, and one participant did not report her sexual orientation. The sample was 42% white/Euro-American, 33% black/African American, 10% Hispanic, 7%

biracial/multiracial, 4% foreign national, 2% Native American/Native Alaskan, and 2% other racial distinction. The participants' mean age was 42.67 ($SD = 9.06$).

Forty-two percent of the participants were living with a diagnosis of HIV+ asymptomatic, defined as “without symptoms,” while 21% were HIV+ symptomatic (with symptoms), and 35% were diagnosed with AIDS (2% did not report their diagnosis). The range of time since participants received their first positive HIV test result was from one month to 216 months (18 years), and the average time since participants' first positive HIV test result was 88 months ($SD = 72$) or just over seven years. Seventy-four percent of the sample endorsed that they were receiving treatment with antiretroviral therapy.

In terms of employment status, 58% of participants were employed in paid full-time jobs, and 39% were employed in paid part-time jobs (3% did not report employment status); the mean number of hours worked per week by participants was 34 hours ($SD = 19.6$). Typically, participants had been working at their jobs for over three years ($M = 39$ months; $SD = 46.3$ months). The majority of participants (63%) had disclosed their HIV/AIDS status to their supervisor or employer, and the majority of the sample (74%) did not rely on their job for health insurance.

Table 1

Demographic Characteristics of Survey Sample

Characteristics	Number	Percent
Race/Ethnicity		
Black/African American	19	33.3
White/Euro-American	24	42.1
Hispanic	6	10.5
Biracial	4	7.0
Other	1	1.8
Foreign national	2	3.5
Gender		
Female	21	36.8
Male	36	63.2
Transgendered	2	3.5
Sexual Orientation		
Gay/Lesbian	23	40.4
Bisexual	10	17.5
Heterosexual	21	36.8
Unsure	1	1.8
Other	1	1.8
Not reported	1	1.8
Romantic Relationship		
Yes	30	52.6
No	24	42.1
Not reported	3	5.3
Employment Status		
Full-time	33	57.9
Part-time	22	38.6
Not reported	2	3.5
Education		
Some high school	4	7.0

Characteristics	Number	Percent
High school degree or GED	20	35.1
Technical school	1	1.8
Two-year college	7	12.3
Some 4-year college	9	15.8
Bachelor's degree	9	15.8
Some graduate school	4	7.0
Master's degree (M.A./M.S.)	1	1.8
Doctorate (Ph.D.)	2	3.5
Other	0	0
Not reported	0	0
Income		
\$0–19,999	23	40.3
\$20,000–39,999	8	14
\$40,000–59,999	10	17.5
\$60,000–79,999	7	12.2
\$80,000–99,999	0	0
\$100,000+	2	3.5
Not reported	7	12.2
State of Residence		
California	3	5.3
Colorado	2	3.5
Florida	3	5.3
Illinois	10	17.5
Iowa	1	1.8
Maryland	3	5.3
Missouri	1	1.8
New York	26	45.6
Ohio	1	1.8
Virginia	4	7.0
Washington, D.C.	2	3.5
Not applicable (South Africa)	1	1.8

Characteristics	Number	Percent
HIV/AIDS Diagnosis		
AIDS	20	35.1
HIV+ (symptomatic)	12	21.1
HIV+ (asymptomatic)	24	42.1
Viral Load (T Cell Count)		
< 100	5	8.8
100–199	5	8.8
200–299	7	12.3
300–399	6	10.5
400–499	12	21.1
500+	15	26.3
Not reported	7	12.3
Receiving Antiretroviral Therapy		
Yes	42	73.7
No	10	17.5
Not reported	5	8.8
Rely on Job for Health Insurance		
Yes	14	24.6
No	42	73.7
Not reported	1	1.8
Disclosed Disease Status to Employer		
Yes	36	63.2
No	20	35.1
Disclosed Disease Status to Friends/Family		
Yes	51	89.5
No	5	8.8
Not reported	1	1.8

Instruments

A questionnaire packet included a demographics questionnaire, including information on current job and disease status; a measure of perceived physical health symptoms; a cognitive functioning instrument; a measure of mental health (i.e., psychological distress and well-being); a social support measure (i.e., measuring work and nonwork support); workplace discrimination measures (HIV/AIDS and sexual orientation); and perceived competence; a job satisfaction measure; an organizational commitment instrument; and a job turnover intentions measure. Last, participants were provided with an opportunity to write about their experiences in the workplace and concerns they found relevant to work in their lives.

Demographics. Demographic information was collected using a questionnaire designed for this study (Appendix A). This questionnaire asked participants to provide the following information about themselves: (a) age; (b) ethnic/racial identification; (c) gender; (d) sexual orientation; (e) state of residence in the United States or country of residence if not the United States; (f) total years of education and degrees received; (g) HIV/AIDS diagnosis; (h) viral load (CD4 T lymphocyte count [normal range = 500–1,300]); (i) time passed since diagnosis; (j) diagnosis of cognitive impairment/learning disabilities; (k) other medical conditions; (l) use of antiretroviral drugs; (m) employment status (part-time versus full-time); (n) job title; (o) number of hours working per week; (p) number of months at current job; (q) whether their HIV status had been disclosed to their supervisor; (r) whether they relied on their job for medical insurance; and (s) level of income (monthly/yearly).

Physical Health. As shown in Appendix B, physical health was measured utilizing the “Medical Outcomes Study HIV Health Survey” (MOS-HIV; Wu et al., 1997), which is a comprehensive assessment of health-related quality of life (HR-QOL) that has been extensively used in association with HIV/AIDS. The MOS-HIV was adapted from a widely validated health status questionnaire and removed questions that were not relevant to HIV infection and AIDS patients. Additionally, the authors added questions that assess relevant HR-QOL associated with HIV/AIDS. This 35-item survey measures 10 facets of health as follows: (a) health perceptions, with five items; (b) pain, with two items; (c) physical functioning, with six items; (d) role functioning, with two items; (e) social functioning, with one item; (f) cognitive functioning, with four items; (g) mental health, with five items; (h) energy/fatigue, with four items; (i) health distress, with four items; and (j) quality of life, with one item.

MOS-HIV (Wu et al., 1997) items and scales were scored in three steps. First, several items in the scales were recoded so that lower scores indicated poorer health/well-being and higher numbers indicated better health/well-being. Second, item scores in each scale were summed to compute scale scores. Last, raw scale scores were transformed linearly to a 0 to 100 scale, with 0 indicating poorest health and well-being and 100 indicating best health and well-being. In terms of items left blank, as recommended in the scoring manual, scale scores were calculated if the respondent answered at least half of the individual items in a multi-item scale. Missing items were then substituted by the respondent’s average score (across the completed items in the scale).

Using exploratory and confirmatory factor analyses, Revicki, Sorensen, and Wu (1998) found that physical function, pain, and role function most strongly loaded on the factor they termed the physical health summary score. The present study proposed to use this score in assessing physical health status. However, the items did not all load onto the same factor in the present study. Therefore, the symptom-specific scales, the “Pain Scale” and the “Energy/Fatigue Scale,” were utilized in assessing commonly experienced HIV/AIDS symptoms.

The Pain Scale comprised two items and measured participants’ own reports of presence/burden of pain-related symptoms, where an example item read, “How much bodily pain have you generally had during the past 4 weeks?” For this question, respondents are asked to rate their answer on a Likert-type scale from 1 (none) to 6 (very severe), with total scale score ranging from 2 to 12. One item was recoded so that the lowest number indicated poorer health/well-being and the highest number signified better health. The Pain Scale total score was transformed linearly to a 0 to 100 scale, with 0 indicating poorest health related to pain (greatest amount of pain) and 100 indicating best health/functioning related to pain (least amount of pain).

The Energy/Fatigue Scale measured participants’ own reports of presence/burden of energy/fatigue-related symptoms, where example items read, “How often during the last 4 weeks did you feel worn out?” and “How often during the last 4 weeks did you feel full of pep?” Respondents rated their answers on a scale of 1 (all of the time) to 6 (none of the time). This scale contained four items, where two were recoded, and scores ranged from 4 to 24. Mean scores were transformed linearly to a 0 to 100 scale, with 0 indicating

lowest energy levels (highest fatigue levels) and 100 indicating high levels of energy (lowest fatigue levels).

In a recent study of individuals living with HIV ($N = 154$), Miners, Sabin, Mocroft, Youle, Fisher, and Johnson (2001) reported a mean of 63.8 ($SD = 28.4$) on the Pain Scale and 47.6 ($SD = 23.3$) on the Energy/Fatigue Scale. Their study demonstrated adequate internal consistency reliability on the Pain and Energy/Fatigue Scales, reporting alphas of 0.87 and 0.90, respectively. In the present study participants reported a mean of 67.06 ($SD = 22.61$) for the Pain Scale and a mean of 55.61 ($SD = 20.85$) on the Energy/Fatigue Scale. Internal consistencies for the physical health scales, Pain and Energy/Fatigue, were adequate, with alphas of 0.74 and 0.81, respectively.

The MOS-HIV has evidenced good construct, concurrent, and predictive validity in PLWHA. The MOS-HIV has been found to relate to other validated HR-QOL measures, such as the EuroQoL self-report (EQ-5D) questionnaires, where conceptually similar domains were correlated with one another (Miners et al., 2001). Validation studies found that the MOS-HIV differentiated between asymptomatic and symptomatic individuals (e.g., with early AIDS-related complex), where asymptomatic individuals reported superior overall health, as well as better health related to their report of pain and fatigue symptoms (i.e., less pain and fatigue) when compared to their symptomatic counterparts (Wu et al., 1991). Revicki et al. (1995) found that the MOS-HIV related to HIV symptoms, where the increase of HIV-related symptoms negatively related to health perceptions, pain, energy, and cognitive functioning. Limitations on the MOS-HIV have been reported regarding some evidence of ceiling effects in very healthy and very ill individuals (Wu et al., 1997).

Cognitive Functioning. The “Cognitive Function Scale” of the MOS-HIV (Appendix B) measures functional status due to neuropsychological impairment, including questions about memory, decision making, attention, and concentration. This four-item scale was used in the present study to assess cognitive functioning in PLWHA. Example items from this scale read, “How much of the time during the past 4 weeks did you forget things that happened recently, for example, where you put things and when you had appointments?” and “How much of the time during the past 4 weeks did you have difficulty doing activities involving concentration and thinking?” These events were then rated on a six-point scale from 1 (all of the time) to 6 (none of the time), with the total scale score ranging from 4 to 24. Again, like the other scales in the MOS-HIV Health Survey, the Cognitive Function Scale total score is transformed linearly to a 0 to 100 scale, with 0 indicating poorest cognitive functioning and 100 indicating best cognitive functioning. A study of individuals with HIV/AIDS reported a mean of 66.0 ($SD = 25.3$) and an internal consistency reliability estimate of 0.92 for the cognitive functioning subscale (Miners et al., 2001). In the present study, participants reported greater cognitive functioning on average ($M = 79.11$; $SD = 17.81$), with an internal consistency reliability estimate of 0.88 for the Cognitive Function Scale.

In a recent study, Knippels, Goodkin, Weiss, Wilkie, and Antoni (2002) demonstrated concurrent validity of this subscale, where cognitive functioning subscale scores significantly related to overall neuropsychological test performance. More specifically, cognitive functioning subscale scores were associated with the domains of abstraction, language, and visuospatial abilities, controlling for CD4 cell count and disease stage.

Psychological Adjustment. The “Mental Health Scale” of MOS-HIV (Appendix B) was used to measure both emotional distress (i.e., depression and anxiety) and positive mood (i.e., well-being) during the past four weeks. Examples of items read, “How much of the time during the past 4 weeks have you felt downhearted and blue?” and “How much of the time during the past 4 weeks have you been a happy person?” Respondents are asked to rate their answers on a six-point scale, from 1 (all the time) to 6 (none of the time). Positive mood items (e.g., “calm and peaceful”) are recoded, and then the items are summed into a total scale score. Scale sums ranged from 5 (poor mental health) to 30 (good mental health). As with all the MOS-HIV scales, the Mental Health Scale is converted to fit a 0 (worst mental health) to 100 (best mental health) scale score. A recent study of individuals with HIV/AIDS reported a mean of 59.9 ($SD = 20.8$) and an internal consistency reliability estimate of 0.84 for the mental health subscale (Miners et al., 2001). The Mental Health Scale mean for the present study’s sample is 67.65 ($SD = 18.29$), with an internal consistency reliability estimate of 0.79.

Similar to validity evidence described regarding the physical health scales of the MOS-HIV, there is support that the mental health scale relates to markers of disease progression (i.e., CD4 cell count [Miners et al., 2001]) and HIV-related symptoms (Revicki, Wu, & Murray et al., 1995). Additionally, MOS-HIV Mental Health Scale scores have been found to significantly correlate with depression scores assessed with the Center for Epidemiologic Studies Depression Scale (Revicki et al., 1995).

Social Support. Perceived social support, defined as perception of the availability and reliability of support from immediate supervisor, coworkers, and family/friends, was measured utilizing the “Social Support Questionnaire” (Caplan, Cobb, French, Van

Harrison, & Pinneau, 1980), as shown in Appendix C. The questionnaire was made up of four items per scale, and examples of items read, “How much does each of these people go out of [his or her] way to do things that make your work life easier for you?” and “How much can each of these people be relied on when things get tough at work?” Respondents were asked to rate their answers to each of the four questions for their immediate supervisor, other people at work, and family/friends/partner using a five-point scale, from 0 (don’t have any such person) to 4 (very much). Three separate scale scores were obtained through computing the average of the items for each scale, and scores ranged from 0 (no social support) to 4 (much social support). Missing items were replaced with the average of the items that the respondent did complete. Caplan et al. (1980) reported means for groups of employees across various occupations, and means for supervisor support ranged from 2.40 ($SD = 0.73$) to 3.24 ($SD = 0.82$). The group on the low end of the range was “blue collar workers, assemblers- nonmachine paced” and the group reporting the highest level of support were professors. Support from coworkers scales means ranged from 2.63 ($SD = 0.70$) to 3.50 ($SD = 0.49$) and support from family/friends ranged from 3.20 ($SD = 0.73$) to 3.76 ($SD = .33$). Caplan et al. (1980) demonstrated adequate internal consistency reliability for supervisor support, coworker support, and family/friend support, reporting alphas of .83, .73, and .81, respectively.

The present study found a mean of 2.64 ($SD = 1.03$) for the “Supervisor Social Support Scale,” a mean of 2.58 ($SD = 1.03$) for the “Coworker Social Support Scale,” and a mean of 3.17 ($SD = 0.80$) for the “Family/Friends Social Support Scale.” Internal reliability for the social support scales of supervisor, coworkers, and family/friends were adequate, with alphas of 0.85, 0.89, and 0.83, respectively. In terms of predictive

validity, Caplan et al. (1980) found the “Supervisor Support Scale” and the “Coworker Support Scale” to negatively correlate with the job satisfaction in both healthy and non-healthy individuals.

Workplace Discrimination. Two measures of perceived workplace discrimination were used, one related to HIV/AIDS and another related to sexual orientation. As shown in Appendix D, perception of workplace discrimination was assessed using a measure constructed by the author. This measure assesses the extent to which HIV/AIDS-related discriminatory or stigmatizing experiences are experienced in the workplace. A list was constructed using information from the section on HIV/AIDS in the Americans with Disabilities Act containing discriminatory experiences that PLWHA may face in the workplace. For each item, participants were asked to indicate whether they had encountered the event of HIV-related workplace discrimination at their current job. Each item endorsed was given a score of 1, and scale scores could range from 0 to 15. A high score indicated a high level of HIV-related discrimination experienced in one’s workplace, whereas a low score indicated minimal to no experience of HIV-related workplace discrimination. On average, participants in the present study reported 1.0 ($SD = 2.26$) discriminatory event. The present study demonstrated adequate internal reliability, with alpha of 0.88 for the “Perceived Discrimination Related to HIV/AIDS Scale.”

Additionally, a modified version of the “Workplace Prejudice/Discrimination Inventory” was included (see Appendix E) in order to account for perceived workplace discrimination based on sexual orientation (James, Lovanto, & Cropanzano, 1994). The original measure was constructed to assess perception of race discrimination in the

workplace, and Ragins and Cornwell (2001) modified the measure by replacing terms relating to race with terms relating to sexual orientation. The instrument is made up of 15 items measuring both experienced and observed events of discrimination (both loading on a single factor), and example items read, “Prejudice exists where I work,” and “I have sometimes been unfairly singled out because of my sexual orientation.” Respondents were asked to rate each item on a seven-point Likert scale ranging from 1 (completely disagree) to 7 (completely agree). Four items were recoded, and then items were summed to obtain the scale score, ranging from 15 (no perceived/experienced discrimination) to 105 (much perceived/experienced discrimination). Missing items were replaced with the average of the items that the respondent did complete.

Ragins and Cornwell (2001) reported a mean of 45.13 ($SD = 20.54$) for gay and lesbian employees ($N = 534$). This is similar to the mean found in the original version based on race discrimination, where James et al. (1994) obtained a mean of 45 ($SD = 20$). Also, James and associates reported good internal consistency with an alpha coefficient of 0.94, where as Ragins and Cornwell found adequate internal consistency reliability with an alpha coefficient of 0.82. The present study obtained a sample mean of 38.67 ($SD = 17.86$) and an internal consistency reliability estimate of 0.86 for the Workplace Prejudice/Discrimination Inventory.

The Workplace Prejudice/Discrimination Inventory has been found to relate to theoretically relevant constructs in terms of minorities’ experiences of difference and bias at work (James et al., 1994). Predictive validity for the use of this instrument in the present study was demonstrated as the measure was found to relate to work attitudes in previous research (Ragins & Cornwell, 2001). Ragins and Cornwell (2001) found that

greater levels of perceived workplace discrimination related to sexual orientation were found to predict lower levels of job satisfaction and organizational commitment and higher levels of intention to turnover.

Job Satisfaction. Job satisfaction was assessed using two separate measures. The “FACES Job Satisfaction Scale” (Kunin, 1998), seen in Appendix F, was developed to assess employee attitudes and involved checking faces rather than words to indicate feeling tone. More specifically, participants were asked, “Please select which of the below set of faces represents how you feel about your current job.” They were provided with a man’s face and a woman’s face for each expression, ranging from 1 (very happy face) to 5 (very distressed/angry face). This item was recoded so that a higher score indicated greater job satisfaction and a lower score signified poorer job satisfaction. As there is only one item, missing items could not be replaced. The present study obtained a sample mean of 3.56 (SD = 1.27) on the FACES Job Satisfaction Scale. The internal consistency estimate was not obtained because there is only one item on this scale.

Another measure of job satisfaction was utilized to assess the extent to which respondents liked their jobs (see Appendix G). The “Job Satisfaction Measure” (Cammann, Fichman, Jenkins, & Klesh, 1983) comprised three items, and participants were asked to what extent they agreed or disagreed with the statements. An example item read, “In general, I like working here.” Respondents were asked to rate each item on a seven-point Likert scale from 1 (completely disagree) to 7 (completely agree). Before computing the scale scores, a negatively phrased item was recoded, and responses to the three items were then averaged in order to obtain the scale score; scores ranged from 1 (very dissatisfied with one’s job) to 7 (very satisfied with one’s job). If a respondent left

one item blank, the average of the other two items was used to replace the missing item. The present study found a mean of 4.98 ($SD = 1.72$) and an internal consistency reliability estimate of 0.85, indicating adequate reliability.

Organizational Commitment. Organizational commitment was assessed utilizing the “Organizational Commitment Scales” (Meyer, Allen, & Smith, 1993), including the “Affective Commitment Scale” (ASC), “Continuance Commitment Scale” (CCS), and “Normative Commitment Scale” (NCS). These scales are shown in Appendix H. Through the construction of these three distinct scales this measure captures various conceptualizations of one’s feelings of commitment to an organization, such as affective attachment, perceived costs of leaving the organization, and obligation to the organization. The scales are all made up of six items, where respondents are asked to rate their answers on a seven-point response scale, from 1 (strongly disagree) to 7 (strongly agree). Four negatively phrased items were recoded. Then scale scores were averaged to create composite scores for each scale, ranging from 1 to 7, where 1 indicates a low level of commitment and 7 indicates a high level of commitment.

The ASC measures affective attachment to one’s organization, and example items from the ASC read, “This organization has a great deal of personal meaning for me” and “I really feel as if this organization’s problems are my own.” On this scale, three items were recoded. Again, the possible range of composite scores is from 1 (low commitment) to 7 (high commitment). A validity study for this scale reported a mean of 3.91 ($SD = 1.47$) and an alpha level of 0.82, demonstrating adequate internal reliability (Meyer et al., 1993). The present study obtained a sample mean of 4.09 ($SD = 1.44$) and an internal consistency reliability estimate of 0.77 for the ASC.

The CCS, measuring commitment related to the cost of leaving versus staying at an organization, and the NCS, assessing commitment due to feelings of obligation to the organization, were included in the survey of the present study. However, the psychometric qualities of these subscales will not be described because they were not test variables in the present study.

Regarding the construct validity of the commitment scales, they have been found to correlate with other work adjustment variables, such as job satisfaction. Meyer, Allen, and Smith (1993) found that job satisfaction correlated positively with affective and normative commitment and negatively with continuance commitment. In terms of predictive validity, affective and normative commitment to the organization has been found to correlate negatively with intention to leave the organization. However, continuance commitment did not significantly correlate with intention to leave the organization (Meyer et al., 1993). In another study, affective commitment was found to correlate positively with job performance, while continuance commitment correlated negatively with measures of performance. The construct of organizational commitment has been found to relate to predictor variables examined in this study, such as mental and physical health (Leong, Furnham, & Cooper, 1996).

Because the present study aimed to examine work adjustment outcomes that could contribute to both well-being in the workplace (e.g., job satisfaction) and job performance, as well as intentions to remain in an organization because one *wants* to, the Affective Commitment Scale was chosen as the commitment outcome measure.

Turnover Intentions

The final work adjustment variable, employees' intentions to stay at their job, was assessed utilizing Colarelli's (1984) three-item intention to stay measure (see Appendix I). An example item reads, "I frequently think of quitting my job." Respondents are asked to rate the extent to which they agree with the statement on a five-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). After accounting for the two reverse-scored items, responses were summed to determine intention to stay, ranging from 3 (minimal intentions to stay) to 15 (strong intentions to stay). While Colarelli (1984) reported a reliability coefficient of 0.75, Saks and Ashforth (1997) provided evidence of reliability in finding a reliability coefficient of 0.86. The present study found a mean of 9.29 ($SD = 4.16$) and an internal consistency reliability estimate of 0.84 for the "Intention to Stay Measure." Saks and Ashforth found support that this measure relates to other relevant work attitudes.

Procedure

Two methods of data collection were used. Data were initially collected using an online survey because the Internet can potentially reach people across a wider geographical area and can provide a greater level of confidentiality. Recruitment for the online survey involved announcements on listservs and websites, a newspaper advertisement, and flyer distribution at HIV/AIDS consortium meetings. Next, mail-in surveys were distributed at HIV/AIDS care networks/consortiums in order to boost recruitment returns and to promote diversity within the sample. Individuals were invited to participate if they were 18 years of age or older, were employed, and were living with HIV/AIDS diagnosis.

Internet/Online Data Collection. The choice of an online survey was made because the Internet can provide greater accessibility to PLWHA who are currently in the workplace. Additionally, the Internet is a mechanism that can provide greater privacy or confidentiality among its users. This privacy is often important for PLWHA, as they are vulnerable to stigmatization and discrimination. A recent study has shown that individuals living with HIV/AIDS utilize the Internet as a coping strategy, reporting that this use promotes feelings of empowerment, augments social support, and facilitates their ability to help others (Reeves, 2000). An online survey was used to promote the likelihood of obtaining a national sample. Nevertheless, the use of the Internet could restrict the sample to those with Internet access.

The present study advertised and attempted to recruit participants through the construction of links to the survey website from established HIV/AIDS online websites all over the United States. E-mails to over 80 HIV/AIDS listservs/groups were sent asking for the distribution of information regarding study participation. See Appendix J for an example of this e-mail. Flyers advertising the Internet survey were distributed at HIV consortium meetings in Washington, D.C., and in New York City. See Appendix K for the flyer. Additionally, the online survey was advertised in the New York City *Blade*, a metropolitan-based free newspaper reporting on news and services especially relevant to the gay, lesbian, bisexual, and transgendered communities (see Appendix L). Next, advertisements for study participation were posted in the “Volunteer Section” of Craig’s List, a free online resource for major metropolitan cities in the United States and in Canada; for this study, Craig’s List announcements were posted in the San Francisco,

Washington, D.C., Manhattan, Queens, and Brooklyn “Volunteer Sections” (see Appendix M). Overall, 18 individuals submitted completed online surveys.

The online survey was hosted on a University of Maryland server. Webpage authoring software was used to create the website, which contained the informed consent page, survey page, debriefing page, and resource page. Participants were asked to complete the online survey one time.

Individuals who fit the criteria (i.e., living with HIV/AIDS and currently employed) and wished to complete the survey would go to a webpage that contained the informed consent text (Appendix N). Participants were informed that the information collected during this study would be confidential. Furthermore, all of the information that participants provided was kept in a password-protected database, accessible only to the principal investigator. The participants were informed that participating in this study included a possibility that they might feel uncomfortable completing the questionnaire. If they were to feel uncomfortable at any time, they could contact the principal investigator and ask questions about the project. Further, they were told that they could discontinue participation at any time. Also, following their participation, the principal investigator was available by phone or e-mail to answer any questions or concerns and provide a brief explanation of the project.

Participants were asked to indicate their consent by clicking on the “I agree. Take me to the survey” link at the bottom of the informed consent page. Upon clicking the link they were directed to the survey. When the participants completed and submitted the survey, they were asked to read a debriefing statement (Appendix O) to educate them about the study and discuss any concerns they might have. They were also directed to a

resource page (Appendix P) containing phone numbers and websites providing assistance to PLWHA and addressing mental and physical health needs, as well as workplace concerns.

Mail-In Survey. After the first six months of recruitment in the Washington, D.C., metropolitan area and through four HIV/AIDS listservs/websites, a paper, mail-in version of the survey was constructed and a monetary incentive was implemented. These changes were made due to the low responsiveness to Internet recruitment and in order to reach PLWHA who do not have access to the Internet.

As an additional recruitment and data-collection procedure, the principle investigator presented the study at meetings both to professionals working with PLWHA and to PLWHA (see Appendix Q for meeting script). The investigator asked those present to take survey packets to give to persons who fit the criteria for participation and whom they thought might be interested in taking the survey. The packets included a consent form (see Appendix R), the survey, the resource list, the debriefing form (see Appendix S), a return addressed stamped envelope, and a raffle ticket for a drawing for \$100.

Two hundred fifty packets were handed out at two meetings. Upon follow-up with several individuals, it was generally reported that about half of the surveys were handed out. Through these efforts, 27 valid surveys and 20 nonvalid surveys (from unemployed individuals) and 3 incomplete surveys were returned. Additionally, 100 packets were sent to a contact at the Illinois Department of Health, in the Division for Persons with Disabilities, and the packets were forwarded to 10 HIV/AIDS consortiums. Ten

completed surveys were returned from Illinois; it is unclear how many surveys reached potential participants.

Regarding the drawing for \$100, Internet and non-Internet participants were entered into the same drawing. Advertisements and flyers were altered to include information about the \$100 drawing. The original Internet consent form was changed to include information about this incentive (see Appendix T). After filling out the online survey, participants were provided with specific information about how to enter the drawing (see Appendix U). Further, a new debriefing form for the online survey included information about drawing entry (see Appendix V). Participants who completed the paper survey, instead of the online survey, were instructed about the drawing in the consent letter, where they were asked to keep their raffle ticket stub and told to check the website in spring 2004 or call the principle investigator around that time.

Survey Response. A total of 31 participants submitted valid completed surveys via the online survey and 26 participants completed the paper version of the survey. Additionally, six partially-completed surveys were submitted (3 online surveys and 3 paper surveys), and 30 surveys (1 online and 29 paper) were submitted by unemployed individuals and therefore were not valid.

Chapter 5: Results

Data Analyses

Descriptive data for the sample were obtained and are shown in Table 1 in the previous chapter. In this chapter the means, standard deviations, ranges, and reliabilities, including a list of means and standard deviations by disease status, are displayed in Table 2. Next, correlations between the variables of interest were examined (see Table 4 for the bivariate correlation matrix). Last, the prediction model, as shown in Table 5, was analyzed utilizing hierarchical regression analysis.

Description of Sample

In this section, the sample will be described in terms of the demographics and variables of interest. Statistical analyses testing for differences among groupings within the sample were not performed due to the small size of the sample.

In the present study, 24 participants reported that they were diagnosed with HIV+ asymptomatic diagnosis, while 12 participants were HIV+ with symptoms, and 20 individuals were diagnosed with AIDS (one participant did not report diagnosis). Overall, participants reported experiencing “good” levels of health, with HIV+ asymptomatic participants reporting “good/very good” overall health, participants with AIDS reporting “good” health, and HIV+ symptomatic participants reporting “fair/good” overall health. See Table 2 for the breakdown of means by disease status. Compared to validity data for the Medical Outcomes Study HIV Health Survey (MOS-HIV [see Burgess, Dayer, Gatalan, Hawkins, & Gazzard, 1993]). HIV+ asymptomatic and HIV+ symptomatic participants had similar overall health to their counterparts in the validity study. However, by looking at the means of individuals in the present study compared to the

validity study, participants living with an AIDS diagnosis reported higher scores on overall health ($M = 58$; $SD = 24.1$; range 0–100) than the validity study's participants with AIDS ($M = 38$; $SD = 22.1$; range 0–100). Again, higher scores are indicative of report of better health. Statistical analyses could not be conducted because the raw data were not available from the validity study, but this represents a difference of nearly one standard deviation between the present study and the validity study.

Regarding specific symptoms, on average participants reported experiencing moderate amounts of pain and reported feeling fatigued/low energy “some of the time.” Overall, participants infrequently (“a little of the time”) reported experiencing cognitive functioning problems involving attention, memory, and concentration. All groups in the present study reported cognitive functioning levels similar to those of HIV+ asymptomatic groups in validity studies (e.g., Burgess et al., 1993).

In terms of mental health symptoms, the mean for the Mental Health Scale was 67 ($SD = 18.2$; range 0-100), which suggests that typically participants reported experiencing anxiety/depressive symptoms from “some of the time” to “a little of the time,” while they perceived somewhat greater (i.e., “some of the time”) positive mood symptoms. This average was similar to means found in Burgess et al.'s (1993) validity study. There did not appear to be significant differences between the diagnosis groups in the validity study or in the present study.

Table 2

Means, Standard Deviations, and Reliabilities of Variables

Scale/Measure	Scale Range	Means (SDs) by Disease Status				Scale Relia-- bilities
		HIV+ Asymptomatic (n = 24)	HIV+ Symptomatic (n = 12)	AIDS (n = 20)	Total (n = 56)	
Overall health (+)	0–100	65.42 (24.13)	42.08 (26.06)	58.25 (24.99)	58.42 (26.09)	0.84
Pain (+)	0–100	70.37 (26.75)	60.19 (20.90)	67.78 (18.35)	67.26 (22.76)	0.74
Energy/fatigue (+)	0–100	53.13 (22.59)	50.00 (21.11)	62.25 (18.17)	55.61 (20.85)	0.81
Cognitive functioning (+)	0–100	79.17 (20.62)	77.92 (14.69)	79.47 (17.07)	79.11 (17.81)	0.88
Mental health (+)	0–100	66.00 (19.09)	62.33 (16.22)	71.80 (18.19)	67.65 (18.29)	0.79
Perceived discrimination—sexual orientation	15–105	39.13 (20.01)	48.24 (16.51)	32.89 (14.27)	38.67 (17.86)	0.86
Perceived discrimination— HIV/AIDS	0–15	0.79 (1.44)	2.00 (4.28)	0.65 (0.99)	1.00 (2.27)	0.88
Supervisor social support	0–4	2.32 (1.27)	2.82 (1.05)	2.91 (0.56)	2.64 (1.03)	0.85

Scale/Measure	Scale Range	Means (SDs) by Disease Status				Scale Relia-- bilities
		HIV+ Asymptomatic (n = 24)	HIV+ Symptomatic (n = 12)	AIDS (n = 20)	Total (n = 57)	
Coworker social support	0–4	2.45 (1.21)	2.55 (0.96)	2.76 (0.86)	2.58 (1.03)	0.89
Job satisfaction (Cammann et al., 1983)	1–7	4.47 (1.81)	4.76 (1.83)	5.72 (1.32)	4.98 (1.72)	0.85
Job satisfaction (FACES)	1–5	3.17 (1.23)	3.18 (1.60)	4.20 (0.83)	3.56 (1.27)	N/A
Affective commitment	1–7	3.75 (1.29)	3.92 (1.39)	4.65 (1.53)	4.09 (1.44)	0.77
Intention to stay	3–15	8.62 (4.18)	8.72 (4.15)	10.40 (4.11)	9.29 (4.16)	0.84
Weekly hours worked	3–123	37.30 (14.64)	29.55 (18.60)	32.72 (24.99)	33.96 (19.58)	N/A

Note: Higher scores for MOS-HIV scales marked with a positive sign (+) indicate better health status and well-being.

In terms of work-related variables, as shown in Table 2, on average participants worked 33.96 ($SD = 19.77$) hours per week, where asymptomatic participants worked the most hours per week. On average, participants who were HIV+ with symptoms had been at their jobs for the longest period of time, followed by HIV+ asymptomatic participants, and persons with AIDS had been at their current job the least amount of time.

In terms of work adjustment variables, participants, on average, were moderately satisfied with and affectively committed to their jobs (see Table 2 for means). Participants with an AIDS diagnosis reported the highest level of job satisfaction on both measures, scoring one standard deviation higher than participants with an HIV (asymptomatic) diagnosis on the Job Satisfaction Scale (Cammann et al., 1983). A test for statistical significance was not conducted due to the small size of the groups.

The majority of participants (63.2%) had disclosed their HIV/AIDS status to their supervisor/boss, and the majority of participants (73.7%) did not rely on their job for health insurance. On average, participants agreed that they received social support in the workplace, reporting both supervisors and coworkers to be “a little” to “somewhat” available, reliable, and easy to approach. These rates were similar across the different diagnosis groups. Furthermore, typically participants perceived fairly low levels of workplace discrimination related to sexual orientation. Lesbian, gay male, and bisexual participants reported higher levels of perceived workplace discrimination related to sexual orientation compared to heterosexual participants (gay/lesbian, $M = 39.36$, $SD = 19.73$; bisexual, $M = 43.91$, $SD = 18.13$; heterosexual, $M = 33.81$, $SD = 15.92$). Again, statistical analyses to test the differences were not conducted due to the small sample

size. Generally, gay and lesbian participants in the present study reported levels of perceived/experienced discrimination similar to those reported by the participants in Ragins and Cornwell's (2001) validity study ($M = 45.31$; $SD = 20.54$). When looking at the means by disease status, it is notable that HIV+ symptomatic participants reported one standard deviation above participants living with AIDS on the measure of perceived/experienced discrimination related to sexual orientation.

In terms of perceived discrimination related to HIV/AIDS, participants reported an average of one discriminatory event ($SD = 2.27$), and each discriminatory event on the list had been experienced by two or more participants. Table 3 shows the percent of the sample that endorsed each discriminatory event.

Primary Analyses

Given the small sample size in the present study, an alpha level of 0.05 was used as an acceptable level for detecting statistical significance in the correlational and regression analyses.

Hypothesis 1. The Relation of Biomedical Factors to Work Adjustment

Perceived physical health status as indicated by the a self-report measure of presence and burden of common symptoms involved in HIV/AIDS (physical function, cognitive function), with higher scores indicating better physical health (less symptom presence/burden), will be positively related to indicators of work adjustment, such that better physical health (less symptom presence/burden) will be related to higher levels of work adjustment.

Table 3

Frequency/Percent of Participants Endorsing Each HIV/AIDS-Related Discriminatory

Event

Event	Frequency	Percent
1. Receiving complaints (directly or indirectly) by others that they may contract HIV by working alongside you	6	10.5
2. Been physically isolated because of your illness	5	8.8
3. Been excluded from meetings because of your illness	2	3.5
4. Not being allowed to take time off because of your illness	4	7.0
5. Having your health care benefits reduced because of your illness	5	8.8
6. Being refused the request for a different position with less demands on your health, as recommended by your doctor	4	7.0
7. Without your input, being transferred to another job because of your illness	2	3.5
8. Having an annual cap on AIDS-related benefits that is less than the cap for other major illnesses	3	5.3
9. Receiving limited medical coverage because of illness	4	7.0
10. Being subject to the violation of confidentiality concerning your disease, such as your medical condition being discussed with other employees	6	10.5
11. Not being granted a request to transfer because of your illness	3	5.3
12. Being faced with an employer who allowed a hostile work environment	2	3.5
13. Being ignored by coworkers because of your illness	4	7.0
14. Being retaliated against because of your illness	3	5.3
15. Not being granted an illness-related request for more flexible work hours	3	5.3

Because the items of the three scales that were to make up “physical health status” did not load onto the same factor, as had occurred in Revicki et al.’s (1998) study, this physical health summary score was not utilized in the present study. Instead, the commonly experienced HIV/AIDS-related physical symptoms, measured by the Pain Scale and the Energy/Fatigue Scale (MOS-HIV), were utilized to capture perceived physical health status.

Hypothesis 1A. Physical pain, defined as the perceived presence/burden of physical pain symptoms, where higher scores indicated better perceived health status or lower levels of perceived physical pain and lower scores indicated poorer perceived health status or higher levels of pain, is positively related to job satisfaction. To explore this relationship, the correlation between perceived pain and job satisfaction was examined. The relationship between the Pain Scale (MOS-HIV; Wu et al., 1997) and the Job Satisfaction Measure (Cammann et al., 1983) was examined utilizing the “Pearson’s Zero-Order Correlational Analysis.” As indicated in Table 4, the correlation between pain and this measure of job satisfaction was 0.12 (*ns*).

To further explore this relationship, the correlation between the Pain Scale and the FACES Job Satisfaction Scale (Kunin, 1998) was examined utilizing the Pearson’s Zero-Order Correlational Analysis. As indicated in Table 4, the correlation between pain and this measure of job satisfaction was 0.08 (*ns*).

Hypothesis 1B: Perceived pain defined as the perceived presence/burden of physical pain symptoms, where higher scores indicated better perceived health status or lower levels of perceived physical pain and lower scores indicated poorer perceived health status or higher levels of pain, is positively related to affective organizational

commitment. To explore this relationship, the correlation between the Pain Scale (MOS-HIV; Wu et al., 1997) and the Affective Commitment Scale (ACS; Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, the correlation between pain and job satisfaction was 0.12 (*ns*).

Hypothesis 1C: The presence/burden of energy/fatigue symptoms, where higher scores indicated high energy/low fatigue levels and lower scores indicated low energy/high fatigue levels, is positively related to job satisfaction. To explore this relation, correlations between the Energy/Fatigue Scale (MOS-HIV; Wu et al., 1997) and the Job Satisfaction Measure (Cammann et al., 1983) were examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, energy/fatigue significantly correlated with this measure of job satisfaction ($r = 0.31; p < 0.05$), such that people who reported more energy (less fatigue) were more satisfied with their jobs than people who reported lower levels of energy (greater fatigue).

To further explore this relation, correlations between the Energy/Fatigue Scale and the FACES Job Satisfaction Scale (Kunin, 1998) were examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, energy/fatigue significantly correlated with this measure of job satisfaction ($r = 0.43; p < 0.01$), such that people who reported more energy (less fatigue) were more satisfied with their jobs than people who reported lower levels of energy (greater fatigue).

Hypothesis 1D: The status of energy/fatigue symptoms, where higher scores indicated high energy/low fatigue levels and lower scores indicated low energy/high fatigue levels, is positively related to affective organizational commitment. To explore this relationship, the correlation between the Energy/Fatigue Scale (MOS-HIV; Wu et al.,

1997) and the ACS (Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, the correlation between energy/fatigue and affective organizational commitment was 0.17 (*ns*).

Hypothesis 1E: Cognitive function, related to self report of memory, attention, and concentration problems, where higher scores indicate better cognitive functioning and lower scores indicate poorer cognitive functioning, is positively related to job satisfaction. To explore this relationship, the correlation between the Cognitive Function Scale (MOS-HIV; Wu et al., 1997) and the Job Satisfaction Measure (Cammann et al., 1983) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, cognitive function significantly correlated with this measure of job satisfaction ($r = 0.26$; $p < 0.05$), such that people who reported better cognitive functioning were more satisfied with their jobs than people who reported poorer cognitive functioning.

To further explore this relationship, the correlation between the Cognitive Function Scale and the FACES Job Satisfaction Scale (Kunin, 1998) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, cognitive function significantly correlated with this measure of job satisfaction ($r = 0.28$; $p < 0.05$), such that people who reported better cognitive functioning were more satisfied with their jobs than people who reported poorer cognitive functioning.

Hypothesis 1F: Cognitive function, related to memory, attention, and concentration, where higher scores indicate better cognitive functioning and lower scores indicate poorer cognitive functioning, is positively related to affective organizational commitment.

Table 4

Bivariate Correlations of Variables of Interest

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
Physical and Mental Health													
1. Energy/fatigue (+)	1.00												
2. Pain (+)	0.35**	1.00											
3. Cognitive functioning (+)	0.53**	0.45**	1.00										
4. Mental health (+)	0.68**	0.32*	0.60**	1.00									
Perceived Social Support													
5. Supervisor support	0.37**	0.15	0.11	0.38**	1.00								
6. Coworker support	0.26*	0.10	0.22	0.39**	0.49**	1.00							
7. Family support	0.26*	0.13	0.30*	0.40**	0.19	0.53**	1.00						
Discrimination													
8. Discrimination related to sexual orientation	-0.36**	-0.11	-0.27*	-0.49*	-0.39**	-0.49**	-0.20	1.00					
9. Discrimination related to HIV/AIDS	-0.28*	-0.23	-0.43*	-0.31*	-0.09	-0.15	-0.16	0.36**	1.00				
Work Adjustment													
10. Job satisfaction	0.31*	0.12	0.26*	0.48**	0.40**	0.37**	0.14	-0.58**	-0.17	1.00			
11. Job satisfaction (FACES)	0.43**	0.08	0.28*	0.47**	0.45**	0.45**	0.28*	-0.58**	-0.41**	0.77**	1.00		
12. Affective organizational commitment	0.17	-0.04	0.10	0.24	0.48**	0.33**	0.01	-0.45**	-0.22	0.65**	0.56**	1.00	
13. Intention to stay	-0.003	0.002	0.12	0.15	0.25	0.20	0.02	-0.41**	-0.32*	0.70**	0.61**	0.71**	1.00

Note: Higher scores for MOS-HIV scales marked with a positive sign (+) indicate better health status and well-being. * $p < .05$; ** $p < .01$.

To explore this relationship, the correlation between the Cognitive Function Scale (MOS-HIV; Wu et al., 1997) and the ACS (Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, the correlation between cognitive function and affective organizational commitment was 0.10 (*ns*).

Hypothesis 2: The Relation of Psychological Factors to Work Adjustment

Mental health, defined on a continuum between emotional distress and psychological well-being, where higher scores indicate better mental health and lower scores indicate poorer mental health, is positively related to work adjustment variables, such that better mental health correlates with greater work adjustment and poorer mental health correlates with lower levels of work adjustment.

Hypothesis 2A: Mental health, defined as a combination of negative emotional states (e.g., depression/anxiety) and positive emotional states (e.g., calmness), where higher scores indicate better mental health and lower scores indicate poorer mental health, is positively related to job satisfaction. To explore this relation, the correlation between the Mental Health Scale (MOS-HIV; Wu et al., 1997) and the Job Satisfaction Measure (Cammann et al., 1983) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, mental health significantly correlated with job satisfaction ($r = 0.48$; $p < 0.01$), such that people who reported better mental health were more satisfied with their jobs than people who reported poorer mental health.

To further explore this relation, the correlation between the Mental Health Scale and the FACES Job Satisfaction Scale (Kunin, 1998) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, mental health again significantly correlated with job satisfaction ($r = 0.47$; $p < 0.01$).

Hypothesis 2B: Mental health, defined as a combination of negative emotional states (e.g., depression/anxiety) and positive emotional states (e.g., calmness), where higher scores indicate better mental health and lower scores indicate poorer mental health, is positively related to affective organizational commitment. To explore this relation, the correlation between the Mental Health Scale (MOS-HIV; Wu et al., 1997) and ACS (Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, the correlation between mental health and affective organizational commitment was 0.24 (*ns*).

Hypothesis 3: The Relation of Perceived Social Support to Work Adjustment

Perceived workplace support, defined as the availability and reliability of social support from one's supervisor and coworkers, relates to work adjustment variables, such that greater levels of perceived social support correlate with better work adjustment and lower levels of perceived social support correlate with poorer work adjustment.

Hypothesis 3A: Perception of the availability and reliability of support from supervisors, where higher scores indicate greater levels of social support and lower scores indicate poorer support, is positively related to job satisfaction. To explore this relation, the correlation between the Supervisor Support Scale from the Social Support Questionnaire (Caplan et al., 1980) and the Job Satisfaction Measure (Cammann et al.,

1983) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, supervisor social support significantly correlated with this measure of job satisfaction ($r = 0.40$; $p < 0.01$), such that people who reported greater supervisor support were more satisfied with their jobs than people who reported lower levels of supervisor support.

To further explore this relation, the correlation between the Supervisor Support Scale and the FACES Job Satisfaction Scale (Kunin, 1998) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, supervisor social support again significantly correlated with this measure of job satisfaction ($r = 0.45$; $p < 0.01$).

Hypothesis 3B: Perception of the availability and reliability of support from supervisors, where higher scores indicate greater levels of social support and lower scores indicate poorer support, positively relates to affective organizational commitment. To explore this relation, the correlation between the Supervisor Support Scale from the Social Support Questionnaire (Caplan et al., 1980) and the ACS (Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, supervisor social support significantly correlated with affective organizational commitment ($r = 0.48$; $p < 0.01$), such that people who reported greater supervisor support were more affectively committed to their organization/job than people who reported lower levels of supervisor support.

Hypothesis 3C: Perception of the availability and reliability of coworker social support, where higher scores indicate greater levels of social support and lower scores indicate poorer levels of support, positively relates to job satisfaction. To explore this

relation, the correlation between the Coworker Social Support Scale from the Social Support Questionnaire (Caplan et al., 1980) and the Job Satisfaction Measure (Cammann et al., 1983) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, coworker social support significantly correlated with this measure of job satisfaction ($r = 0.37$; $p < 0.01$), such that people who reported greater coworker support were more satisfied with their jobs than people who reported lower levels of coworker support.

To further explore this relation, the correlation between the Coworker Social Support Scale and the FACES Job Satisfaction Scale (Kunin, 1998) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, coworker social support again significantly correlated with job satisfaction ($r = 0.45$; $p < 0.01$).

Hypothesis 3D: Perception of availability and reliability of support from coworkers, where higher scores indicate greater levels of social and lower scores indicate poorer social support, positively relate to affective organizational commitment.

To explore this relation, the correlation between the Coworker Social Support Scale from the Social Support Questionnaire (Caplan et al., 1980) and the ACS (Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, coworker social support significantly correlated with affective organizational commitment ($r = 0.33$; $p < 0.01$), such that people who reported receiving greater coworker support were more affectively committed to their organization/job than people who reported lower levels of coworker support.

Hypothesis 4: The Relation of Perceived Discrimination to Work Adjustment

Perceived discrimination in the workplace, defined as perceived discrimination based on HIV/AIDS status and sexual orientation, negatively relates to work adjustment, such that higher levels of perceived discrimination correlate with poorer work adjustment and lower levels of perceived discrimination correlate with greater work adjustment.

Hypothesis 4A: Perception of discrimination related to HIV/AIDS, defined as the number of HIV/AIDS-related discriminatory events experienced in one's workplace, negatively relates to job satisfaction. To explore this relation, the correlation between perceived discrimination related to HIV/AIDS and the Job Satisfaction Measure (Cammann et al., 1983) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, the correlation between perception of HIV/AIDS workplace discrimination and this measure of job satisfaction was -0.17 (*ns*).

To further explore this relation, the correlation between perceived discrimination related to HIV/AIDS and the FACES Job Satisfaction Scale (Kunin, 1998) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, perceived HIV/AIDS discrimination significantly correlated with this measure of job satisfaction ($r = -0.41$; $p < 0.01$), such that people who reported higher levels of discrimination were less satisfied with their jobs than people who reported lower levels of discrimination.

Hypothesis 4B: Perception of discrimination related to HIV/AIDS, defined as the number of HIV/AIDS-related discriminatory events experienced in one's workplace,

negatively relates to affective organizational commitment. To explore this relation, the correlation between perceived discrimination related to HIV/AIDS and the ACS (Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, the correlation between perception of HIV/AIDS workplace discrimination and affective organizational commitment was -0.22 (*ns*).

Hypothesis 4C: Perception of discrimination related to sexual orientation, defined as the observed and experienced prejudicial beliefs and behaviors related to sexual orientation in the workplace, where higher scores indicate greater prejudice observed/experienced, negatively relates to job satisfaction. To explore this relation, the correlation between perceived discrimination related to sexual orientation, as measured by the revised Workplace Prejudice/Discrimination Inventory (James et al., 1994), and the Job Satisfaction Measure (Cammann et al., 1983) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, perceived prejudice related to sexual orientation significantly correlated with job satisfaction ($r = -0.58; p < 0.01$), such that people who reported higher levels of sexual orientation discrimination/prejudice were less satisfied with their jobs than people who reported lower levels of sexual orientation discrimination/prejudice.

To further explore this relation, the correlation between perceived discrimination related to sexual orientation and the FACES Job Satisfaction Scale (Kunin, 1998) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, perceived prejudice related to sexual orientation again significantly correlated with job satisfaction ($r = -0.58; p < 0.01$).

Hypothesis 4D: Perception of discrimination related to sexual orientation, defined as the perceived and experienced presence of prejudicial beliefs and behaviors related to sexual orientation in the workplace, negatively relates to affective organizational commitment. To explore this relation, the correlation between perceived discrimination related to sexual orientation, as measured by the revised Workplace Prejudice/Discrimination Inventory (James et al., 1994), and ACS (Meyer, Allen, & Smith, 1993) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, perceived prejudice related to sexual orientation significantly correlated with affective organizational commitment ($r = -0.45$; $p < 0.01$), such that people who reported higher levels of sexual orientation discrimination/prejudice were less affectively committed with their jobs than people who reported lower levels of sexual orientation discrimination/prejudice.

Summary of Findings

Biomedically, energy/fatigue and cognitive functioning were found to correlate with job satisfaction. The more energized people felt, the more likely they were to be satisfied with their jobs. The presence/burden of pain symptoms and level of cognitive functioning were not found to relate to job satisfaction. None of the biomedical variables was found to relate to affective organizational commitment.

Psychologically, mental health symptoms (depression/anxiety) were significantly related to both measures of job satisfaction, where better mental health was associated with greater job satisfaction. Alternatively, poorer mental health correlated with lower levels of job satisfaction. Mental health was not found to significantly correlate with affective organizational commitment.

In terms of social/environmental factors, the availability and reliability of supervisor and coworker support were found to positively correlate with job satisfaction (both measures) and with affective organizational commitment. Perceived workplace discrimination related to HIV/AIDS and perceived workplace prejudice related to sexual orientation were found to negatively correlate with job satisfaction. While perceived prejudice related to sexual orientation was found to negatively relate to affective organizational commitment, perceived HIV/AIDS-related discrimination was not found to relate to affective commitment.

Biopsychosocial Model

The following hypothesis tested the present study's theoretical structure of the biopsychosocial model by exploring the contributions of biomedical factors (i.e., pain and energy symptoms), psychological variables (i.e., mental health status), and social factors (i.e., social support and perceived workplace discrimination/prejudice) in the prediction of outcome variables measuring work adjustment. Further, the hypothesis that psychosocial variables will contribute more in the prediction of job satisfaction is explored.

Hypothesis 5: Biopsychosocial Model of Work Adjustment

Biomedical factors, psychological factors, and social/environment factors will each contribute in the prediction of work adjustment. Psychosocial factors will contribute as much if not more in the prediction of work adjustment than biomedical factors. Finally, social/environmental factors will moderate the relation between

biomedical and work adjustment factors and between psychological and work adjustment factors.

Because the sample size needed to test the hypothesized biopsychosocial model was not obtained after 15 months of data collection, modifications were made in the data analyses. The decision was made to exclude examining interaction and moderating effects and to modify some hypotheses by eliminating some predictor and criterion variables to increase power. Below are the original hypotheses, with revised hypotheses demonstrating the modifications.

Hypothesis 5A. Within the biopsychosocial model, biomedical factors (i.e., energy/fatigue, pain, and cognitive functional status) will collectively contribute to a significant proportion of variance of job satisfaction. In order to maximize power while still testing the main effects of interest, the decision was made to only examine one of the three physical health symptoms. In terms of internal validity, the Pain and Energy/Fatigue Scales more clearly measure physical symptoms in comparison to the Cognitive Function Scale, and typically these symptoms are observed in PLWHA across disease status (Hoffman, 1996). Another decision was made to exclude pain in the regression equation because the correlational analyses did not find the Pain Scale to correlate with the outcome variables. Therefore, the Energy/Fatigue Scale was the only biomedical variable retained for testing the biopsychosocial model.

Hypothesis 5A—Revised: As a part of the biopsychosocial model, the biomedical symptom “energy/fatigue” significantly contributes to the variance of job satisfaction. A hierarchical, blockwise regression analysis was computed to assess the proportion of variance accounted for by physical health (biomedical), mental health, and work

environment variables in the prediction of job satisfaction (see Table 5). The order in which the blocks of variables were entered into the regression equation was based on the order of experience from internal factors to external factors. Therefore, the physical health symptom (i.e., energy/fatigue) was entered in the first block, followed by the entry of the mental health variable in the second block. The work environment variables (i.e., supervisor support, perceived discrimination) were entered in the third and final block.

In the prediction of job satisfaction, together physical health, mental health, and work environment variables accounted for 51.9% of the variance. Specifically, the physical health variable of energy/fatigue accounted for 21% of the variance.

Hypothesis 5B: Psychological factors (i.e., mental health) will significantly contribute to the variance of job satisfaction over and above the effects of the biomedical factors. In the prediction of job satisfaction, mental health significantly predicted job satisfaction, accounting for an additional 6.2% of the variance over and above the contributions of the physical health variable.

Hypothesis 5C: Work environment/support factors (i.e., coworker and supervisor support and perceived discrimination) will significantly contribute to the variance of job satisfaction over and above the effects of biomedical and psychological factors in predicting work adjustment.

Table 5

Summary of Hierarchical Regression Analysis for Variables Predicting Job Satisfaction

($N = 55$)

Predictor	B	SE B	β
Step 1			
Energy/fatigue	0.03	0.01	0.46**
Step 2			
Energy/fatigue	0.02	0.01	0.25
Psychological Adjustment	0.02	0.01	0.32*
Step 3			
Energy/fatigue	0.01	0.01	0.15
Mental health	0.01	0.01	0.09
Supervisor support	0.36	0.14	0.29**
Perceived discrimination—HIV/AIDS	-0.12	0.06	-0.22*
Perceived discrimination—sexual orientation	-0.02	0.01	-0.30*

Note: Step 1— $R^2 = 0.21$, $F(2, 52) = 13.84$, $p < 0.001$; Step 2— $\Delta R^2 = 0.06$, $F(1, 51) =$

4.17, $p < 0.05$; Step 3— $\Delta R^2 = .25$, $F(3, 48) = 8.22$, $p < 0.001$

** $p < 0.01$; * $p < 0.05$.

In order to maximize power and minimize Type II error, the present study excluded the Coworker Social Support Scale in its test of the proposed biopsychosocial model. While coworker social support is important and should be considered in the research, for this scaled-down analysis, supervisor social support and workplace discrimination were deemed more important in their impact on job satisfaction and therefore were retained for analysis.

Hypothesis 5C—Revised: Work environment/support factors (i.e., supervisor support and perceived discrimination/prejudice) will significantly contribute to the variance of job satisfaction over and above the effects of biomedical and psychological factors in predicting work adjustment. In the prediction of job satisfaction, work environment/support variables significantly predicted job satisfaction, collectively accounting for an additional 24.7% of the variance over and above the contributions of the physical and mental health variables. An examination of the beta weights indicated that supervisor support, perceived discrimination related to HIV/AIDS, and perceived discrimination related to sexual orientation were the significant contributors.

Hypothesis 5D: Psychosocial factors will contribute as much if not more in the prediction of work adjustment than biomedical factors. As shown in Table 5, support for this hypothesis was found, such that when the mental health variable was added to the regression equation (the second step) the biomedical variable, energy/fatigue, no longer significantly predicted job satisfaction and in the third step of the equation, social/environmental factors accounted for more of the variance in job satisfaction than did energy/fatigue.

Hypothesis 5E: Work environment/support factors will moderate the relations of biomedical and psychological factors to job satisfaction. Consistent with Judd, Kenny, and McClelland's (2001) definition of a moderator, moderation in the current model involves a test of the statistical interaction of the physical and mental health variables with work environment/support (moderator), examining whether a variable that is a product of two factors (e.g., physical health \times environment/support) predicts job satisfaction over and above the factors' main effects.

In order to maximize power and minimize Type I Error, only the main effects could be examined and moderating effects had to be excluded. This decision also reflects the importance of establishing evidence for main effects before testing for moderating effects.

Hypothesis 5F: Biomedical factors (i.e., physical health status and cognitive functional status) will significantly contribute to the variance of organizational commitment. Due to the small size of the sample and because organizational commitment is less central to this study, the decision was made to not test the prediction of organizational commitment.

Hypothesis 5G: Psychological factors (i.e., mental health) will significantly contribute to the variance of organizational commitment over and above the effects of the biomedical factors (i.e., physical health status and cognitive functional status). Due to the small size of the sample and because organizational commitment is less central to this study, the decision was made to not test the prediction of organizational commitment.

Hypothesis 5H: Work environment/support factors (i.e., coworker and supervisor support and perceived discrimination) will significantly contribute to the variance of organizational commitment over and above the effects of biomedical and psychological factors in predicting work adjustment. Due to the small size of the sample and because organizational commitment is less central to this study, the decision was made to not test the prediction of organizational commitment.

Hypothesis 5G: Further, work environment/support factors will moderate the relations of biomedical and psychological factors to organizational commitment. Due to the small size of the sample and because organizational commitment is less central to this study, the decision was made to not test the prediction of organizational commitment.

Additional Analyses

Hypothesis 6: The Relation of Work Adjustment Variables to Intention to Turnover

Work adjustment measures (e.g., job satisfaction, organizational commitment) positively correlate with intention to stay, defined as the extent to which one wishes to remain at one's current job, where higher scores on the intention to stay measure indicate a greater desire to remain at one's job.

Hypothesis 6A: Job satisfaction is positively related to intention to stay. To explore this relation, the correlation between the Job Satisfaction Measure (Cammann et al., 1983) and the Intention to Stay Scale (Colarelli, 1984) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, job satisfaction significantly correlated with intention to stay ($r = 0.70$; $p < 0.001$), such that people who

were more satisfied with their jobs had higher levels of intent to stay at their jobs than people who reported lower levels of job satisfaction.

To further explore this relation, the correlations between the FACES Job Satisfaction Scale (Kunin, 1955; 1998) and the Intention to Stay Scale were examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, job satisfaction again significantly correlated with intention to stay ($r = 0.61$; $p < 0.001$).

Hypothesis 6C: Affective organizational commitment is positively related to intention to stay. To explore this relation, the correlation between the ACS (Meyer, Allen, & Smith, 1993) and the Intention to Stay Scale (Colarelli, 1984) was examined utilizing the Pearson's Zero-Order Correlational Analysis. As indicated in Table 4, affective organizational commitment significantly correlated with intention to stay ($r = 0.71$; $p < 0.001$), such that people who were more affectively committed to their organizations/jobs had higher levels of intent to stay at their jobs than people who reported lower levels of affective organizational commitment.

Hypothesis 7: Additional Biopsychosocial Model of Work Adjustment

Recognizing that not all participants in the sample identified as lesbian, gay, or bisexual, and therefore may not be affected by sexual orientation discrimination, an additional regression analysis, which excluded sexual orientation discrimination, was conducted. In this model, it was hypothesized that HIV/AIDS workplace discrimination would continue to be a significant predictor, and potentially an even strong predictor, of job satisfaction, compared to the original model.

Table 6*Summary of Alternative Hierarchical Regression Analysis for Variables Predicting Job**Satisfaction (N = 55)*

Predictor	B	SE B	β
Step 1			
Energy/fatigue	0.03	0.01	0.43**
Step 2			
Energy/fatigue	0.01	0.01	0.22
Psychological Adjustment	0.02	0.01	0.33*
Step 3			
Energy/fatigue	0.01	0.01	0.11
Mental health	0.01	0.01	0.20
Supervisor support	0.39	0.15	0.31**
Perceived discrimination—HIV/AIDS	-0.16	0.06	-0.28*

Note: Step 1— $R^2 = 0.19$, $F(2, 53) = 12.24$, $p < 0.001$; Step 2— $\Delta R^2 = 0.06$, $F(1, 52) = 4.30$, $p < 0.05$; Step 3— $\Delta R^2 = .15$, $F(2, 50) = 6.20$, $p < 0.01$

** $p < 0.01$; * $p < 0.05$.

The hypothesis was supported, such that HIV/AIDS workplace discrimination was a stronger predictor of job satisfaction compared to the strength of the relation found in the original model. It is important to note that through removing a variable, power for finding significance was also improved for other variables, such as psychological adjustment and supervisor support, where Beta increased in these cases. However, the Beta for energy/fatigue actually decreased, when sexual orientation discrimination was excluded.

Chapter 6: Discussion

The present study was the first to examine the prediction of work adjustment in employed persons living with HIV/AIDS (PLWHA). This study offers an important opportunity to expand current knowledge about employment and work adjustment processes in PLWHA, addressing the complexity and diversity of the experiences within the HIV/AIDS community. The present study was designed to test a biopsychosocial model of work adjustment, which posits that physical health, psychological health, and environmental/social factors collectively and uniquely contribute to the prediction of work adjustment in PLWHA. Further, consistent with Hoffman and Driscoll's (2000) Concentric Biopsychosocial model, in the present study the psychosocial variables were expected to have an even greater role in the prediction of job satisfaction than the biomedical factors had. An examination of the buffering effects of social support was an aim of this study as well. However, due to the small size of the sample, the buffering hypothesis could not be tested. This study's findings did demonstrate the importance of utilizing a biopsychosocial perspective when examining work adjustment in PLWHA as all levels of functioning (i.e., physical health, psychological health, social/environment) were found to uniquely contribute to the prediction of job satisfaction, with social/environmental variables being especially strong predictors of work adjustment.

This discussion section provides descriptive information about the sample and identifies the individual factors within the biopsychosocial model, as well as discusses the findings regarding the relationships between these individual factors and the work adjustment factors. Second, the results of the regression analysis examining the biopsychosocial model is presented, discussing each level of the model for its unique

contribution in the prediction of job satisfaction. Further, the regression results are presented, as they relate to Hoffman's and Driscoll's (2001) Concentric Biopsychosocial Model, demonstrating that psychosocial variables significantly contributed as much, if not more, to the variance in job satisfaction compared to the biomedical factors. Third, the limitations of the current study are addressed. Finally, implications of the biopsychosocial model's utility in providing an understanding of work adjustment in PLWHA are discussed, especially addressing implications for future research and practice.

Work Adjustment

In this study, work adjustment was defined as the extent to which individuals felt satisfied with and affectively committed to their jobs or organizations. The majority of participants worked in full-time positions and reported that they were moderately satisfied with and moderately affectively committed to their jobs. Further, there did not appear to be large differences in work adjustment between participants who were living with HIV+ asymptomatic, HIV+ symptomatic, and AIDS diagnoses, although analyses were not conducted to test for differences. An important finding regarding the predictive validity of the work adjustment variables was that they were highly correlated with turnover intentions, where employees who were satisfied with and more affectively committed to their jobs were the more likely to report greater intentions to stay at their job. This finding supports past research that has demonstrated such relations between job satisfaction, organizational commitment, and turnover intentions (e.g., Meyer et al., 1993). Again, through studying the precursors of turnover intentions (and potential

turnover), in case job satisfaction and affective organizational commitment, there is evidence of a preventive approach.

Biomedical

In this study, moderate to low levels of physical symptoms were expected as employed PLWHA tend to report fewer physical health symptoms compared to their unemployed counterparts. The present study examined symptoms commonly experienced by PLWHA (e.g., Darko et al., 1992; Yelin et al., 1991). On average, participants in this study reported moderate levels of pain and fatigue, and reported occasionally experiencing problems with their cognitive functioning. The presence/burden of such symptoms is consistent with past literature describing these symptoms as common in PLWHA (e.g., Hoffman, 1996; Hudson, Kirksey, & Holzemer, 2004; Lagana et al., 2002; Millikin, Rourke, Halman, & Power, 2003). Further, the finding that fatigue levels tended to be one of the more reported physical health symptom measured in this study is consistent with the relative levels found in measure development and validation studies (Burgess et al., 1992; Wu et al., 1991). It is important to note that these differences are only reported as descriptive rather than statistical data because statistical analyses of differences could not be conducted due to the small sample size.

Overall, participants in the present study tended to report better physical health compared to participants in past studies, when comparing the means (e.g., Burgess et al., 1992). One possible reason for this difference is that this study was specifically examining PLWHA who were working unlike other studies where participants tended to be unemployed, where data collected on employment was secondary to the primary

purpose of those studies. The exclusion of unemployed individuals in the present study could have skewed the results toward self-reports of better health. This assertion is consistent with past research findings, where employed PLWHA tended to be physically healthier than their unemployed counterparts and reported that illness symptoms contributed to their employment decisions (e.g., Brooks & Klosinski, 1999; Darko et al., 1992; Ezzy et al., 1999). Again, there are very few studies that have examined such relationships.

The present study seems to both partially support and contradict past research that found physical health to worsen with disease status (e.g., HIV+ vs. AIDS). Consistent with past research, HIV+ asymptomatic participants reported the best levels of physical health. Inconsistent with past research, however, participants with AIDS reported better physical health than HIV+ symptomatic individuals. Because the disease status groups were so small in the present study, several individuals may have skewed the means of the two groups. Therefore, meaningful interpretations cannot be made. However, another possibility is that report of current diagnosis may not be indicative of actual health status, since some respondents may have been diagnosed with AIDS in the past, and after antiretroviral treatment, they may not be as physically ill.

In terms specific physical health symptoms' correlations with work adjustment, the present study hypothesized that fatigue, pain, and cognitive functioning would correlate with work adjustment (i.e., job satisfaction and organizational commitment) in PLWHA. More specifically, poorer health status (i.e., greater symptoms presence/burden) was expected to be associated with lower levels of job satisfaction and organizational commitment, whereas better health status (lower symptom load) was

expected to be associated with greater job satisfaction and organizational commitment. Findings demonstrated that energy/fatigue was the best physical health correlate of job satisfaction, such that PLWHA who reported higher energy levels (lower fatigue) were more likely to be satisfied with their jobs. On the other hand, participants reporting lower energy and greater fatigue were less likely to be satisfied with their jobs. Fatigue may contribute to workers feeling less able to complete and/or enjoy their work tasks, which may cause them to feel less satisfied with their job. Alternatively, given the correlational nature of the analyses, workers who feel less satisfied with their jobs may feel more fatigued and less energized. It is important to note that causality cannot be inferred from these correlational findings.

While past HIV/AIDS research has demonstrated that PLWHA are more likely to be unemployed and have more fatigue than their HIV-seronegative counterparts (e.g., Darko et al., 1992), no previous studies could be found that examined the relation between fatigue and work adjustment (e.g., job satisfaction) in PLWHA. Therefore, this is the first study to link fatigue with job satisfaction in PLWHA. However, the present study's finding is consistent with research on the link between fatigue and work adjustment of other medical populations and of non-medical populations, where fatigue has been found to relate to job stress and subsequent levels of job satisfaction (e.g., Baanders, Rijken, & Peters, 2002; MacDonald, 2003).

Another area of functioning affected by HIV/AIDS is cognitive functioning, an area that has been central in past research examining employment in PLWHA (e.g., Heaton et al., 1994; Heaton et al., 1996; Rabin et al., 2004). In the present study, participants across the disease status groups, on average, reported only occasionally

experiencing problems with cognitive functioning, such as attention, memory, and concentration difficulties. This level of self-reported cognitive functioning is similar to that of the HIV+ asymptomatic group in validity studies (e.g., Burgess et al., 1993). In other words, participants in the present study did not follow the validity study's pattern of worsening cognitive functioning as disease progressed, defined by diagnosis. The lack of differences seems consistent with past research showing that employed individuals, regardless of disease status, tend to report better cognitive functioning than their unemployed counterparts (Heaton et al., 1994). Statistical tests for differences could not be conducted due to small sample size.

In addition to obtaining descriptive information on participants' cognitive functioning, the present study examined the relationship between cognitive functioning and work adjustment. Findings demonstrated that cognitive functioning, defined as self-report of memory, attention, and concentration difficulties, was associated with work adjustment, although this relationship was not as strong as the correlation between energy/fatigue and work satisfaction. One reason for this finding could be that poorer cognitive functioning contributes to greater difficulties in completing tasks at work and to lower feelings of job competence. Another explanation could involve a third factor, such as depression, which was positively correlated with problems in cognitive functioning. However, past research has found cognitive impairment to relate to employment outcomes after controlling for depression (Heaton et al., 1994).

While the presence/burden of physical pain was expected to relate to work adjustment, the present study did not find evidence for such a relationship. Although Swindles et al. (1999) found that employed individuals reported significantly less pain

than their unemployed counterparts, it is unclear whether or not the symptom of pain was a significant factor affecting work adjustment in employed individuals. Research on adjustment to other illnesses/injuries (e.g., chronic illnesses, back pain) has suggested that pain can contribute to individuals becoming dissatisfied with their jobs and can even lead to work disability (Baanders et al., 2002; van Poppel, Koes, Deville, Smid, & Bouter, 1998). However, pain in the present study was not associated with job satisfaction in such a way. This may be due to the nature of their pain, such as severity and frequency. Unlike previous research that found constant pain to be a frequent experience of PLWHA (e.g., Lagana et al., 2002), the participants in the present study reported mild to moderate pain presence/burden, and therefore, pain may not be severe enough to affect feelings about work. Again, it is important to note that the majority of participants in past studies were unemployed, sometimes due to burden of their physical symptoms, making direct comparisons difficult.

The differences in how the various physical health symptoms related to job satisfaction in the present study could be explained by differences in the intrusiveness of the symptoms. Illness intrusion research posits that the intrusiveness of a symptom, not just the report of symptom frequency, predicts adjustment and quality of life (Devins, 1991). The present study measured both symptom frequency and the extent to which symptoms limited functioning. Participants in this study may not experience pain to be intrusive enough to affect their work attitudes and well-being, whereas their fatigue symptoms and cognitive difficulties may be more intrusive to the participants when it comes to work adjustment in particular. Again, such causal interpretations cannot be made due to the correlational nature of this study. Overall, the finding that level of pain

did not predict job satisfaction in the present study has implications for considering the potential for differences in how specific physical symptoms relate to job satisfaction. Future research should address such differences.

Similar to the relations expected between physical health symptoms and job satisfaction, the present study hypothesized that physical health symptoms would be associated with affective organizational commitment or feelings of emotional/affective attachment to one's job or organization. As an important indicator of work adjustment and well-being, affective organizational commitment was expected to be associated with physical health symptoms, which may contribute to worker's ability to feel affectively engaged in and committed to their workplace/organization. Findings did not support this hypothesis. While a couple of past studies have found people with high organizational commitment to report less physical and mental health difficulties (e.g., Leong, Furnham, & Cooper, 1996), there has been little research or evidence for this relation. Perhaps experience of physical symptoms has more of a relationship to general feelings of well-being at work (i.e., job satisfaction) than to feelings of attachment to one's specific organization.

Summary. In summarizing the relations found between the specific physical health symptoms and work adjustment in the present study, an overarching finding is that these symptoms were differentially related to work adjustment in employed PLWHA. Energy/Fatigue symptoms showed the strongest association with job satisfaction, while cognitive functioning had weaker correlation with job satisfaction. Pain symptoms did not relate to job satisfaction in the employed PLWHA in this study. Again, no relationships were found between physical symptoms and affective

organizational commitment. Later in this chapter, the relation between energy/fatigue and job satisfaction in the context of the biopsychosocial model is discussed.

Additionally, implications, limitations, and recommendations for future research regarding the above findings are presented. The next section summarizes the present study's findings regarding the relationship between psychological adjustment and work adjustment in employed PLWHA.

Psychological

Although some previous studies on employment in PLWHA have discussed the relationship between of psychological adjustment and employment outcomes (e.g., Brooks & Kolsinski, 1999; Ezzy et al., 1999; Martin et al., 2003), the majority of studies in this area have focused on disease status/progression and physical health. So, not only is this the first study to examine job satisfaction in PLWHA, it is one of few studies to examine psychological adjustment in relation to employment in PLWHA.

On average, participants in the present study reported moderate levels of emotional distress on a scale ranging from report of no psychological distress to report of great distress. Compared to Wu et al.'s (1991) validation study, this level of psychological adjustment/distress is similar to reported levels of patients with AIDS. In terms of other comparison groups in Wu et al.'s study, participants in the present study reported poorer psychological adjustment than patients with other illnesses (e.g., hypertension, diabetes); still the group reporting the poorest psychological adjustment levels were patients with a diagnosis of depression (Wu et al., 1991). These comparisons could not be statistically tested as the raw data was not available from Wu et al.'s study.

The present study found that better psychological adjustment, defined as lower levels of depressive symptoms and greater levels of calmness and contentment, was associated with higher levels of work satisfaction. Alternatively, participants who reported greater depressive symptoms were less likely to be satisfied with their job. While no previous research could be found on job satisfaction in PLWHA, the present study does support past research that showed psychological factors to affect PLWHA decisions to return to or leave work (e.g., Ezzy et al., 1999). This connection is relevant because job satisfaction has been found to be a precursor of job turnover (e.g., Porter et al., 1974). This finding is also consistent with past research on psychological adjustment and work adjustment among other populations, where depression has been found to relate to job dissatisfaction (e.g., Judge & Locke, 1993).

Similar to the potential effects of fatigue, depression may contribute to workers feeling less able to complete and/or enjoy their work tasks, which may cause them to feel less satisfied with their jobs. Alternatively, given the correlational nature of the analyses, workers who feel less satisfied with their jobs may feel less fulfilled and more depressed. Again, it is important that one does not draw conclusions of causality in correlational studies. Later in this chapter, psychological adjustment is discussed in the context of the biopsychosocial model and implications and limitations are addressed.

Social Support/Environment

Workplace support. Recognizing the importance of work environment for PLWHA, the present study examined the relationship between workplace social support (i.e., supervisor and coworkers) and work adjustment, as well as tested the relationship between perceived and experienced workplace discrimination and work adjustment. In

terms of workplace social support, PLWHA in this study, on average, agreed that they received social support in their place of work, where, on average, they reported both supervisors and coworkers to be “a little” to “somewhat” available, reliable, and/or easy to approach. This level of perceived workplace support is similar to those reported in Caplan et al.’s (1980) measure validity study. There are no population norms as no other studies on workplace support for PLWHAs could be found.

In terms of the association between the support PLWHA perceived from supervisors and coworkers and their adjustment to work, both types of support were found to positively relate to job satisfaction and affective organizational commitment. More specifically, individuals who perceived greater workplace social support were more satisfied with and affectively committed to their jobs or organizations. Alternatively, those workers who perceived less supervisor and/or coworker support tended to be less satisfied with and affectively committed to their jobs or organizations. This finding is consistent with a body of research that has demonstrated the association between a supportive work environment and job satisfaction (e.g., Baruch-Feldman, Brondolo, Ben-Dayan, & Schwartz, 2002).

Social support at work may contribute to individuals’ well-being at work in several ways. In terms of PLWHA, Brooks and Kolsinski (1999) found that unemployed PLWHA desired to return to work in order to connect socially with other people. The workplace can provide individuals with a range of support sources in their lives. In addition to the direct effects on adjustment associated with connecting to supportive others, social support can buffer or moderate the effects of stress in people’s lives, such as at occupational and illness-related stressors (e.g., House, 1981, Newcomb,

1990). This is especially important for PLWHA whose health changes could cause employment problems and who may have concerns of discrimination (Brooks & Kolsinski, 1999). The present study planned to test the buffering hypothesis of social support (House, 1981), but, unfortunately, it is now beyond the scope of this study due to our inability to obtain a large enough sample size. Again, none of the causal interpretations can be made based on this study's correlational findings.

Discrimination. Recognizing the potential for stigmatization and discrimination in the lives of PLWHA, related to both HIV/AIDS and sexual orientation (and potentially related to gender and racial minority status), the present study examined these factors in relation to work adjustment. In terms of HIV/AIDS discrimination, participants in the present study reported an average of one discriminatory event when choosing from the list of events based on the Americans with Disabilities Act (ADA) section on HIV/AIDS. Further, two or more participants had experienced each discriminatory event on the list. The most frequently endorsed discriminatory events were: a) Receiving complaints (directly or indirectly) by others that they may contract HIV by working alongside you, b) Being subject to the violation of confidentiality concerning your disease, such as your medical condition being discussed with other employees, c) Been physically isolated because of your illness, and d) Having your health care benefits reduced because of your illness. Experiencing just one of these stigmatizing and isolating situations can feel very uncomfortable and even dangerous to one's health and safety, which is quite concerning. These findings are also concerning because by law, individuals should be protected from such treatment.

Regarding disclosure of disease status, the majority of participants in the current study had disclosed their disease status to their employers, although a relatively large number of individuals still had not disclosed their status. While the relation between HIV/AIDS discrimination and disclosure was not tested in the present study, past research on other stigmatized groups could shed light on what may affect individuals' disclosure decisions. For example, disclosure of one's sexual orientation at work has been found to relate to perceived sexual orientation discrimination, where employees who experienced greater discrimination were less likely to disclose their sexual orientation at work (Ragins & Cornwell, 2001). The fact that the majority of participants in the current study had disclosed their disease status could relate to lower levels of perceived discrimination in their workplaces. However, higher rates of disclosure could relate to the need to disclose in order to receive necessary accommodations based on greater burden of symptoms, regardless of perceived discrimination. In fact, past research has shown that PLWHA who experience greater physical symptoms are more likely to have disclosed to others about their disease status than healthier individuals (Sowell et al., 1997). Comparisons to literature regarding workplace discrimination and disclosure in employed PLWHA cannot be made because no studies have asked these questions to this population.

Worry about discrimination had been identified as a major concern of individuals when considering returning to work (Brooks & Kolsinski, 1999; Martin et al., 2003). In the interest of examining whether or not the experience of discrimination actually does relate to work adjustment in employed PLWHA, the present study tested the relationship between perceived HIV/AIDS discrimination and work adjustment outcomes. It was

hypothesized that perceived discrimination at work would negatively correlate with job satisfaction and organizational commitment. Findings demonstrated that perceived HIV/AIDS discrimination was associated with job satisfaction, such that individuals reporting having experienced workplace discrimination related to HIV/AIDS were less satisfied with their jobs than individuals reporting less workplace discrimination. This finding is especially interesting because, on average, individuals reported only one discriminatory event, and yet, there was still an association between such an experience and job satisfaction. This illustrates the potential impact that discrimination can have. One fairly intuitive reason for this finding could be that the experience of such events contributes to negative feelings about one's job. However, due to the correlational nature of this study, the finding could indicate that the less satisfied one is with his/her job the more likely it is that individual perceives discrimination. Also, when drawing conclusions, it is important to think about variables that might confound the relationship, such as physical symptoms and psychological adjustment. Later in this chapter, the relationship between discrimination and job satisfaction in the context of the biopsychosocial model is explored.

As the majority of participants in the current study identified as being gay, lesbian, or bisexual, the possibility of sexual orientation discrimination is important to consider, especially as past research has found this type of discrimination to be associated with job satisfaction (Ragins & Cornwell, 2001). Further, because the stigmatization of HIV/AIDS is still often associated with sexual orientation and sexual activity, heterosexual individuals with HIV/AIDS may also feel affected by discrimination related to sexual orientation in their workplaces. Participants in this study

reported experiencing sexual orientation discrimination, and, on average, levels of perceived discrimination were fairly similar across the different sexual orientation groups, although gay, lesbian, and bisexual individuals reported somewhat higher levels of perceived discrimination compared to heterosexual individuals. Overall, participants reported fairly similar levels of perceived discrimination compared to norms from Ragins and Cornwell's 2001 study, which included only gay and lesbian participants. This finding of minimal difference between gay/lesbian/bisexual participants' and heterosexual participants' perceptions of sexual orientation discrimination is an interesting finding that was not expected based on past research, and is a consideration that should be addressed in future research.

The current study hypothesized that sexual orientation discrimination would negatively correlate with work adjustment. Results supported this hypothesis, demonstrating that this type of workplace discrimination was associated with work adjustment, such that PLWHA who perceived greater levels of sexual orientation discrimination were less satisfied with and less affectively committed to their jobs/organizations. This finding is consistent with past research, which demonstrated that sexual orientation discrimination at work predicted greater levels of job dissatisfaction in gay and lesbian employees (e.g., Ragins & Cornwell, 2001). Again, the perception of discrimination and prejudice in one's workplace may contribute negatively to one's well-being in the workplace, although causation cannot be concluded in this study.

Summary. In sum, the current study's findings demonstrated the relationship between experience of a supportive and safe work environment and work adjustment.

One interesting finding is that PLWHA who felt safe enough to participate in this study, on average, reported having experienced some level of discrimination both related to HIV/AIDS and related to sexual orientation. While causal associations cannot be concluded, the relations found between the support/discrimination variables and work adjustment contribute to a crucial foundation in providing a better understanding of PLWHA's work experiences. The next section of this chapter discusses the unique contributions of physical health, psychological adjustment, and work environment variables in the prediction of job satisfaction, as well as tests the relative significance of psychosocial variables once physical symptoms are accounted for.

Biopsychosocial Model

The present study examined a model that is missing from the literature, which considers the role of variables representing multiple domains relevant to disease effects including biomedical (physical health), psychological (psychological adjustment), *and* social/environmental variables as they relate to job satisfaction. Furthermore, the present study specifically hypothesized that psychosocial factors (i.e., psychological adjustment and social support) would account for a greater amount of variance in job satisfaction than variance accounted for by biomedical factors. In testing a model of work adjustment, the present study sought to first test the contribution of common HIV/AIDS-related physical health symptoms in the prediction of work adjustment (i.e., job satisfaction). Energy/Fatigue, the physical health symptom that was most strongly associated with job satisfaction, was entered into the first step of the model and was found to account for a significant amount of the variance in job satisfaction (21%), where higher energy/lower fatigue levels were associated with greater job satisfaction.

After accounting for the variance explained by energy/fatigue, psychological adjustment was entered into the model and was expected to contribute to the prediction of job satisfaction above and beyond fatigue levels. Psychological adjustment did significantly predict job satisfaction after controlling for fatigue symptoms, accounting for 6% of the variance. After entering psychological adjustment into the model, energy/fatigue no longer was a significant predictor of job satisfaction.

Finally, after the indicators of health and adjustment were accounted for in the prediction of job satisfaction, it was predicted that both social support and perceived discrimination would significantly predict levels of job satisfaction in PLWHA above and beyond physical health psychological adjustment variables. Each of the work environment/support variables significantly contributed to the prediction of job satisfaction above and beyond the variance accounted for by the physical health and psychological adjustment indicators. In fact, this third step of the model accounted for the greatest amount of the variance in job satisfaction (25%) compared to the other predictors in the model. Furthermore, when work support/discrimination variables were entered into the model, psychological adjustment no longer significantly predicted levels of job satisfaction. This finding demonstrates the importance of perceived workplace social support and discrimination in the prediction of job satisfaction, above and beyond the physical health and psychological adjustment variables.

The results in the present study support the proposed biopsychosocial model, illustrating the importance of accounting for each area of functioning, especially perception of work environment, when predicting work adjustment in PLWHA. In terms of past HIV/AIDS employment literature, this finding supports and extends Ezzy

et al.'s (1999) research, where they found PLWHA reporting psycho-emotional reasons as contributing to their decisions to leave or return to work apart from physical health reasons. Their finding points to the possibility that while fatigue relates to job satisfaction, after accounting for fatigue symptoms, psychological adjustment is still a significant predictor of job satisfaction (above and beyond fatigue). Again, it is important to note that energy/fatigue no longer was a significant predictor of job satisfaction, which may have implications for the potential overlap between report of fatigue symptoms and the report of depressive symptoms. Past literature has discussed the comorbidity of fatigue and depression (e.g., Abbey & Garfinkel, 1991; Natelson, 1998)

In addition to demonstrating the unique contribution of psychological adjustment in the prediction of job satisfaction in PLWHA, perceived workplace support and discrimination were found to account for variance in job satisfaction above and beyond physical health and psychological adjustment indicators, and they were the strongest predictors of job satisfaction. In fact, after social support and discrimination variables were entered into the model, psychological adjustment no longer significantly predicted job satisfaction. This finding supports the potentially integral role that perception of work environment, including discrimination, may play in PLWHA's adjustment and well-being in their workplaces. Further, the results illustrate the role that HIV/AIDS discrimination has, aside from sexual orientation discrimination, in predicting job satisfaction in PLWHA. Past research that has examined both types of discrimination in PLWHA could not be found in the literature. However, past research has shown the gay and lesbian employee's perceptions of discrimination in their workplaces related to their

job satisfaction levels (e.g., Ragin & Cornwell, 2001), and past research on PLWHA has found that concerns about HIV/AIDS discrimination affect employment decisions (e.g., Brooks & Klosinski, 1999). It is important to note that

Summary. Again, findings on this study's proposed biopsychosocial model illustrate the significance of looking beyond disease progression and symptoms, when explaining employment concerns of PLWHA. Psychological adjustment, capturing depressive symptoms, accounted for variance in job satisfaction above and beyond that explained by reported fatigue. Further, after this psychological variable was entered into the model, fatigue no longer was a significant predictor of job satisfaction. It is important to consider the potential overlap in the measurement of depressive symptoms and fatigue symptoms when interpreting this finding. Last, in the final step of this study's model, social support and perceived workplace discrimination, related to both HIV/AIDS and sexual orientation, significantly predicted levels of job satisfaction. Further, they accounted for the more of the variance than did the physical health and psychological adjustment variables from the earlier steps.

Additional Findings

Recognizing that not all participants in the sample identified as lesbian, gay, or bisexual, and therefore may not be affected by sexual orientation discrimination, an additional regression analysis that excluded sexual orientation discrimination was conducted. This step was also taken to acknowledge the distinctiveness of HIV/AIDS discrimination, as sexual orientation is not directly linked to disease status. Findings demonstrated that HIV/AIDS discrimination was a stronger predictor of job satisfaction when sexual orientation discrimination was excluded. This finding could be due to

improved power when fewer variables are entered into the equation. Further, this finding may add to the evidence that perceived HIV/AIDS discrimination is distinct from sexual orientation discrimination in the workplace. It is also noteworthy that more than two decades into the AIDS epidemic and HIV/AIDS discrimination and stigma in the workplace still appear to be a concern for PLWHA. Future research could examine if certain segments of the HIV/AIDS community experience more workplace HIV/AIDS discrimination than others, as well as investigate individual vs. cumulative affects of multiple types of discrimination.

Limitations

It is important to recognize several limitations of the current study, related to internal validity, external validity, and measurement. While the present study is one of the only studies to examine employment issues in PLWHA using standardized measures, the use of self-report, quantitative measures, may pose limitations. In self-report measures, bias may be a factor in how people answer the questions, which can contribute to inaccuracies and can diminish validity of findings. Often disease progression and physical health indicators have been assessed by medical measures (e.g., blood levels) and standardized testing batteries in order to maximize construct validity. These types of tests were not used in the present study. The impact of measurement choice was illustrated in recent research. For example, Millikin et al. (2003) found subjective neurocognitive complaints (self-report) and objective neuropsychological assessments of these complaints to differ in how they relate to depression and fatigue in participants living with HIV/AIDS. Additionally, these measures were only moderately correlated with one another. When considering the

present study's findings, further research is needed to examine whether objective measures (e.g., neuropsychological battery) also relate to work adjustment.

Similarly, common method biases could also pose a problem regarding the validity of results. This refers to potential problems when using common measurement methods where the variance is attributed to the method of measurement rather than to the construct of interest, which affects the validity of the study's conclusions (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). The present study utilized a common method measurement (e.g., Likert scale, self-report), as well as measured variables that have been shown to have relatively high levels of method variance (e.g., job attitude variables). Therefore, it is important to consider how much of the variance in the model was attributed to measurement error and not to the actual constructs of interest. Podsakoff et al. (2003) made several recommendations for accounting for and minimizing method biases (e.g., control for social desirability, counterbalance question order, differing response formats).

Other measurement limitations may exist, such as participants' self-report of their current HIV/AIDS status (e.g., HIV+ vs. having AIDS) as viral load could change and their disease status could go from AIDS back to HIV. However, participants may not be aware of the change in diagnosis. This affects the meaning and validity of such comparisons so common in earlier studies. Other potential measurement limitations involve discriminant and construct validity of certain measures. For example, the MOV-HIV Health Survey (Wu et al., 1997) "Energy/Fatigue Scale" (e.g., "Did you feel full of pep?") and "Mental Health Scale" (e.g., "Did you feel weighted down by your health problems") were highly correlated in the present study, which calls into question

the extent to which these scales are measuring discrete constructs. This overlap between self-report of fatigue and depressive symptoms has been well-documented and discussed in the fatigue literature (e.g., Abbey & Garfinkel, 1991; Moss-Morris & Petrie, 2001). First, it has been suggested in the literature that fatigue is a characteristic of depression and anxiety (Natelson, 1998). Therefore, many measures of depression include items assessing somatic symptoms, such as fatigue. Some researchers suggest utilizing multiple measures of depression that evaluate its affective, cognitive, and somatic components, as well as, through use of self-report and clinician-report in order to differentiate between mere fatigue symptoms and fatigue as a part of depression (Abbey & Garfinkel, 1991). This connection between fatigue and depression continues to be a much debated and researched area, especially in the chronic fatigue syndrome literature.

Regarding design of the study, this study utilized a cross-sectional design and therefore, conclusions about causality cannot be made. A longitudinal design is a method that would allow for causal conclusions to be drawn from the data, and therefore it is recommended for future research. Another type of limitation of this study's design is the potential presence of factors that were present pre-diagnosis, such as pre-morbid depression, as well as pre-morbid cognitive and physical impairments, and therefore, finding regarding these factors may not be unique HIV/AIDS.

In addition to measurement and design limitations, another limitation of the current study relates to sampling. This non-randomized sampling procedure may contribute to biased results and minimizes generalizability. One sampling limitation found throughout the literature, is self-selection bias, where respondents often self-select and "tend to be more motivated, and often have more resources than other HIV-infected

persons” (Hoffman, 1997). For example, the employed PLWHA in the present study may be healthier than employed PLWHA who did not choose to participate. Other sampling limitations may exist regarding the representativeness of this study. For example, although many efforts and contacts were made to reach a large segment of the population (e.g., Internet recruitment, city-wide meetings), relatively few individuals chose to participate. Again, one reason could be that many PLWHA are not employed. Another reason for low response could relate to the large numbers of studies being done on this population, studies that often give monetary reimbursement to each recruited individual (e.g., Martins et al., 2003). Additionally, the sensitive nature of the research could contribute to some people not participating due to concern of anonymity, even when steps to maximize anonymity were outlined. Therefore, findings based on this study’s sample may not reflect the experiences of all employed PLWHA. It is difficult to know to what extent this sample resembles the population of interest because an exact return rate could not be obtained.

Another factor that affects both internal and external validity is the diversity of participants, an issue in research throughout the field of psychology and especially in HIV/AIDS research. Addressing the limitation of past research where there has been a tendency toward use of homogenous samples, reflecting only segments of the HIV/AIDS community, the present study obtained a sample fairly similar to the HIV/AIDS population demographics reported by CDC (2002), in terms of gender, sexual orientation, and race/ethnicity, (<http://www.cdc.gov/hiv/stats/hasr1402/table3.htm>). Further, the majority of participants in this study were from states that are on the list of 10 leading states or

territories reporting the highest number of cumulative AIDS cases among residents as of December 2002 (CDC, 2002). Of note, in the present study, women comprised a slightly higher proportion of the sample (36.8%) compared to the percentage reported by the CDC (2002), which comprised 25% of all cases of HIV/AIDS diagnoses through 2002. It is important to note that these comparisons are confounded by the fact that only 39 states were a part of the national survey and that people tend to underreport their HIV status. While obtaining a sample of participants that resembles the population promotes generalizability, these within-sample demographic differences (e.g., gender, race/ethnicity) could have confounded the results. For example, past research has found differences in health and employment outcomes based on gender and race/ethnicity (e.g., Diaz et al., 1994; Stoskopf et al., 2001). With a larger sample size, more preliminary analyses for differences based on important demographic variables could have been conducted. In fact, as biosocial variables (e.g., gender, race, sexual orientation) are a part of the biopsychosocial model, these variables should be included in the model once an adequate sample size is obtained.

Implications and Recommendations for Research and Practice

This study helps the field clarify the importance of examining psychosocial factors, not just physical health factors, when researching employment issues in PLWHA. This finding is especially useful as these psychosocial factors are often more amenable to interventions and to change than are many biomedical variables (Hoffman & Driscoll, 2001). In this section, this study's findings will be discussed in terms of their implications for future research and practice.

On a theoretical level, the findings demonstrated the utility of a biopsychosocial perspective in addressing the complexity of adjustment with illnesses, such as HIV (Hoffman & Driscoll, 2000). First, this study illustrated the importance of examining specific symptoms (e.g., fatigue and pain) when examining the relation between physical health and job satisfaction. This approach challenges the use of HIV/AIDS status as a proxy for physical health symptoms found in many past studies. Again, this contention is based on the finding that fatigue significantly related to job satisfaction, while report of pain symptoms did not. Future research could examine these differences in how various symptoms relate to work adjustment, especially through utilizing multiple measures in order to maximize construct validity. Further, studies that examine illness intrusion (Devins, 1991) as a potential moderator or mediator in the relation between physical symptoms and work adjustment could lend insight into what contributes to these differences in how various physical symptoms relate to job satisfaction.

Based on the current study's findings, work adjustment theories that do not account for factors, such as physical health and discrimination experiences, neglect potentially important parts of PLWHA's work experiences. Current person-environment (P-E) theories of work adjustment (e.g., TWA; Dawes & Lofquist, 1993), which postulate that P-E fit predicts work adjustment (e.g., job satisfaction), could start to explain how work environments need to address (or fit) the diverse needs and values of employed PLWHA. Presently, such P-E fit models have not accounted for "person" factors, such as illness status and sexual orientation. Nor have these models factored in specific discrimination experiences when assessing environment factors. However,

there is a trend in the field of vocational and career theory to examine more contextual factors such as gender, ethnicity, SES, and disability (e.g., Kenny, Blustein, Chaves, Grossman, & Gallagher, 2003; Martin-Crane, Beyerlein, & Johnson, 1995; Tinsley, 1993), which could start to address the needs of PLWHA.

Several theories of career development conceptualize career identity as a central task of adulthood, where a job and career can provide a sense of meaning and self-concept for an individual (e.g., Super, 1953). Past qualitative research supports this concept of career identity, where individuals living with HIV/AIDS identified a central reason for wishing to return to work was their desire to feel like they are doing something meaningful (Brooks & Kolsinski, 1999). Studies are needed that examine the process of career development and career salience while coping with a chronic disease, especially examining the effects of career development disruption due to illness status. Additionally, as many individuals living with HIV/AIDS may have feelings of uncertainty about the future, research addressing the how this ambiguity affects career planning is needed (Hoffman, 1997).

In terms of theory testing, the present study was largely exploratory, especially because the smaller sample size made testing for moderators and mediators unfeasible. Future research could test for the appropriateness of established models of work adjustment (e.g., TWA; Dawes & Lofquist, 1993) and examine how these models are or are not adequately explaining work adjustment processes of PLWHA. Such research could illustrate how career and vocational theories and interventions may need to be adjusted when applied to PLWHA. Larger scale research on work adjustment of PLWHA could be undertaken and more complex models tested. Causal models could

be examined, utilizing structural equation modeling and longitudinal designs. The implementation of this type of research will likely require better funding and the commitment and involvement of HIV/AIDS agencies/organizations in order to recruit enough participants. In addition to more complex designs focusing on employed PLWHA, future work adjustment research comparing seropositive individuals with seronegative individuals could further clarify the distinct needs of PLWHA.

Another area needing future research and intervention involves the role of work accommodations. Currently, little is known about the effectiveness of the types of accommodations required under the Americans with Disabilities Act. For example, some accommodations, which allow PLWHA to continue working, may substantially change important aspects of the job leading to less satisfaction and a poorer “fit” (see Hoffman, 1997). Intervention research could be undertaken in order to examine the extent to which different workplace accommodations/interventions help PLWHA sustain productivity and well-being at work.

Regarding applied implications, if this study is replicated and extended, and causation is established, healthcare professionals could provide PLWHA information on how to identify physical health psychological adjustment symptoms affecting their work adjustment, and help them prevent and manage symptoms. In terms of intervention recommendations, clarifying the origin of symptoms is critical. For example, it is important to recognize that there could be factors other than HIV disease, such as depression, contributing to physical health symptoms (see Millikin et al., 2003). This is especially true for the study of fatigue, as fatigue has been found to correlate highly with depression (as they did in the present study). Therefore, researchers, PLWHA, and

healthcare professionals need to be cognizant of the etiology of various symptoms.

Regarding workplace intervention, decreased work hours and/or greater flextime may be necessary when symptoms are greater. Promoting employers' awareness about physical health and psychological adjustment issues could empower them to address employees' needs, maximizing employees' satisfaction, and possibly their productivity. Because energy/fatigue and cognitive difficulties can be affected by HIV/AIDS and by stress, stress levels could be evaluated and workshops offered to help PLWHA cope with stressors they encounter on the job. Before, implementing such changes, however, it is important that more research be conducted in this area of intervention.

Regarding the role of psychological adjustment in PLWHA's adjustment to work, healthcare providers should assess for depression in PLWHA, especially as research has demonstrated a trend of underdiagnosis of depression in HIV-infected patients (see Asch et al., 2003). In terms of intervention, because many PLWHA cannot afford mental health care, systemic changes may be needed to promote better psychological services and provisions.

Finally, if replicated and extended, this study's findings on social support and discrimination could have applied implications for how employers address the needs of their employees living with HIV/AIDS. In terms of discrimination, it is important to highlight the potential role of perceived workplace discrimination, in this case HIV/AIDS and sexual orientation discrimination, as a proxy for supportiveness of workplace environment, especially for PLWHA. Research examining the concept of a discriminatory or stigmatizing workplace environment is needed to help better illustrate to impact of various kinds of stigma and discrimination perceived by PLWHA. Again,

it is notable that participants who identified as heterosexual also choose to complete the perceived sexual orientation workplace discrimination questionnaire and reported similar levels of this type of perceived discrimination. Perhaps due to their HIV/AIDS status, they are still sensitive to sexual orientation discrimination even though they do not identify as gay/lesbian/bisexual. Future research is needed to examine this possibility. Further, this finding has implications for the importance of assessing perceived discrimination in groups who are not traditionally seen as “stigmatized,” as a “stigmatizing workplace environment” may affect employees regardless of whether or not they are vulnerable.

Therefore, in terms of promoting a supportive work environment, supervisors/employers who not only are reliable and approachable, but also are attentive to and address workplace discrimination will likely create a more enjoyable work environment, with happier and more affectively committed employees. Part of being supportive is that employers can sensitively respond to the needs of their employees. This may mean that employers need to be educated about the sensitive issues involved with HIV/AIDS, such as confidentiality and education of coworkers. On a systemic level, employers and employees need to foster a safe and comfortable work environment, addressing stigmatization and discrimination (e.g., HIV/AIDS, sexual and racial minority status), especially as PLWHA could be targets of multiple types of discrimination.

Further, it is important to note that HIV/AIDS discrimination predicted job satisfaction apart from the variance accounted for by sexual orientation discrimination. Moreover, HIV/AIDS discrimination was an even stronger predictor of job satisfaction

once sexual orientation discrimination was taken out of the model, which could, in part, be due to overall increase of power. The potential impact that just one event could have on an individual's well-being is an important area for future research. For example, future research could extend this study's findings by creating a measure that assesses the relative impact (e.g., stress) that each act of HIV/AIDS discrimination has on an individual, which could be informed by critical incident research.

Regarding organizational interventions, several agencies offer training to employers and organizations on addressing the needs of PLWHA and for promoting discrimination-free workplaces. Such large-scale systemic changes often necessitate policy level support, where funding can be made available for creating better work environments. Policy can also set a better standard for how individuals are treated in their workplaces. Currently, the Americans with Disabilities Act regarding HIV/AIDS accommodation procedures and discrimination laws is at risk of being nullified. This is a major concern because, clearly, there is still a need for such policies.

Summary

The main goal of the current study was to explore predictors of work adjustment utilizing a biopsychosocial model, which entailed examining the ability of physical health, psychological adjustment, and social/environmental variables to predict work adjustment (i.e., job satisfaction). It was hoped that this study would both shed light on this under-studied area and suggest interesting possibilities for future research.

Perhaps the broadest implication of the current study is the finding that workplace social support and perceived discrimination were the strongest predictors of job satisfaction among the biopsychosocial factors. These findings could set the

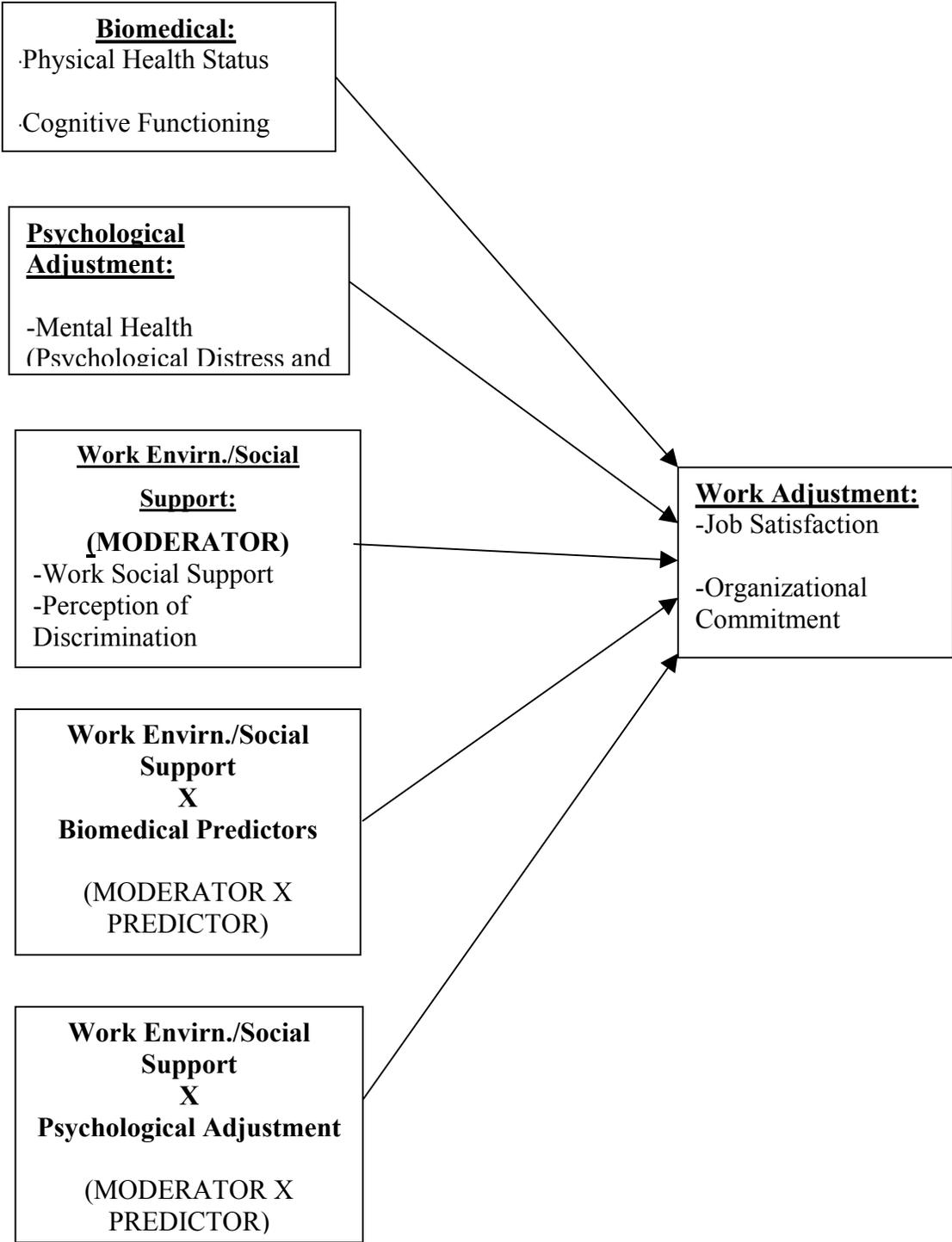
HIV/AIDS and employment research in a new direction, where social and psychological factors are examined in conjunction with physical health. Broadly, these findings suggest the need for future research aimed at gaining a better understanding of the factors that contribute to satisfaction in on-going employment of PLWHA.

Results of the current study also suggest that distinguishing between physical symptoms and psychological adjustment are a potentially fruitful area of work adjustment research, especially in populations living with chronic illnesses with symptoms of fatigue. This finding that there is significant overlap in report of fatigue and depressive symptoms deserves future study, as it could provide information on why some PLWHA continue to work while others terminate their employment.

In summary, more than two decades after the beginning of the AIDS epidemic the area of work adjustment in individuals living with HIV/AIDS is emerging from its incipient stage in the research, laying important groundwork for future research. The current, rather exploratory, study did reveal some intriguing findings in the area of work adjustment in PLWHA. Again, because research into work adjustment in PLWHA is still in its infancy, these findings may have raised more questions than they answered. It is hoped that the current study will add to the literature and stimulate future research that explores in greater detail those who continue to work despite facing challenges of a chronic and often debilitating and unpredictable disease.

Figure Caption

Figure 1. Proposed Biopsychosocial Model of Work Adjustment



7. Please indicate your family's approximate yearly income:
- _____ 0-9,999 _____ 10,000-19,999 _____ 20,000-29,999
- _____ 30,000-39,999 _____ 40,000-49,999 _____ 50,000-59,999
- _____ 60,000-69,999 _____ 70,000-79,999 _____ 80,000-89,999
- _____ 90,000-99,999 _____ over 100,000
8. How long since first HIV+ test? _____ yrs. _____ mos.
9. What is your medical diagnosis? (e.g., HIV+, AIDS) _____
10. Are you currently receiving treatment with antiretroviral (ARV)? ____ Yes ____ No
11. What was your last CD4 T-cell count? _____
12. What is the lowest your CD4 T-cell count has been since you were diagnosed? _____
13. Relationship status: _____ Single, never married
 _____ Married/Living as Married/Partnered
 _____ Divorced
 _____ Separated
 _____ Widowed
14. Employment status: _____ Full-time _____ Part-time
15. During the past 4 weeks, what is the average number of hours you worked per week :

16. Title of position in organization: _____
17. Number of years working in your organization: _____
18. List tasks that you perform at your job (e.g., writing, computing, reading, lifting, teaching, supervising)

19. Do you rely on your job for health insurance? ____ Yes ____ No
20. Have you told your supervisor or employer about your HIV/AIDS diagnosis? ____ Yes
 ____ No
21. Have you told friends and family about your HIV/AIDS diagnosis? ____ Yes ____ No

Appendix B

Medical Outcome Study- HIV Health Survey

(Wu, Revicki, Jacobson, & Malitz, 1997)

Instrument is Copyrighted contact authors for more information.

Appendix C

Social Support Questionnaire

Caplan, R. D., Cobb, S., French, J. R. P., Van Harrison, P., & Pinneau, S. R. (1980)

Social Support Questionnaire

Use the this response scale to answer the questions below:

Very Much 4	Some- what 3	A Little 2	Don't Not At All 1	Have Any Such Person 0
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1. How much does each of these people go out of their way to do things to make your work life easier for you?

- A. Your immediate supervisor _____
- B. Other people at work _____
- C. Your partner, friends, and relatives _____

2. How easy is it to talk with each of the following people?

- A. Your immediate supervisor _____
- B. Other people at work _____
- C. Your partner, friends, and relatives _____

3. How much can each of these people be relied on when things get tough at work?

- A. Your immediate supervisor _____
- B. Other people at work _____
- C. Your partner, friends, and relatives _____

4. How much is each of the following people willing to listen to your personal problems?

- A. Your immediate supervisor _____
- B. Other people at work _____
- C. Your partner, friends, and relatives _____

Appendix D

Work Discrimination Related to HIV/AIDS Checklist

<p>Some persons living with HIV/AIDS report that they have experienced discrimination in their workplace due to their disease status. Below is a list of discriminatory events that individuals have reported to the EEOC over the last few years. Please note that this list does not cover every potential discriminatory event.</p>	
<p>Please indicate which area(s) of discrimination that you have experienced at your current job (NOTE: you can select more than one area from the below list):</p>	
Receiving complaints (directly or indirectly) by others that they may contract HIV by working alongside you	<input type="checkbox"/>
Been physically isolated because of your illness	<input type="checkbox"/>
Been excluded from meetings because of your illness	<input type="checkbox"/>
Not being allowed to take time off because of your illness	<input type="checkbox"/>
Having your health care benefits reduced because of your illness	<input type="checkbox"/>
Being refused the request for a different position with less demands on your health, as recommended by your doctor.	<input type="checkbox"/>
Without your input, being transferred to another job because of your illness	<input type="checkbox"/>
Having an annual cap on AIDS-related benefits that is less than the cap for other major illnesses	<input type="checkbox"/>
Receiving limited medical coverage because of illness	<input type="checkbox"/>
Being subject to the violation of confidentiality concerning your disease, such as your medical condition being discussed with other employees	<input type="checkbox"/>
Not being granted a request to transfer because of your illness	<input type="checkbox"/>
Being faced with an employer who allowed a hostile work environment	<input type="checkbox"/>
Being ignored by co-workers because of your illness	<input type="checkbox"/>
Being retaliated against because of your illness	<input type="checkbox"/>
Not being granted an illness-related request for more flexible work hours	<input type="checkbox"/>

Please describe any discriminatory event(s) that you have experienced at your current job that was not listed above:

A rectangular text input field with a light beige background and a thin border. On the right side, there is a vertical scroll bar with a small triangular slider. The field is currently empty.

Appendix E

Workplace Prejudice/Discrimination Related to Sexual Orientation Inventory (Revised) (James, Lovato, & Cropanzano, 1994)

If applicable, please rate the extent to which you agree with the following statements.

1	2	3	4	5	6	7
Completely Disagree						Completely Agree

1. I have sometimes been unfairly singled out because of my sexual orientation.
2. Prejudice exists where I work.
3. Where I work all people are treated the same, regardless of their sexual orientation.
4. At work I feel socially isolated because of my sexual orientation.
5. At work lesbian, gay, and bisexual employees receive fewer opportunities.
6. There is no discrimination on my present job.
7. Where I work members of the heterosexual individuals are treated better than lesbian, gay and bisexual employees.
8. At work people are intolerant of others who do not identify as heterosexual.
9. Supervisors scrutinize the work of lesbian, gay and bisexual employees more than heterosexual employees.
10. Where I work people who identify with of different sexual orientation groups get along well with each other.
11. At my present job, some people get better treatment because of their sexual orientation.
12. There is discrimination where I work.
13. At work I am treated poorly because of my sexual orientation.
14. At my present place of employment, members of sexual orientation groups do not tell me some job-related information that they share with members of their own group.

Appendix F

FACES Job Satisfaction Scale (Kunin, 1955, 1998)

Instrument is Copyrighted contact authors for more information.

Appendix G

Job Satisfaction Questionnaire

(Cammann, Fichman, Jenkins, & Klesh, 1983).

To what extent do you agree or disagree that the statements describe you?

1	2	3	4	5	6	7
Completely Disagree						Completely Agree

1. All in all, I am satisfied with my job.
2. In general, I don't like my job.
3. In general, I like working here.

Appendix H

Organizational Commitment Scales (Revised) (Meyer, Allen, & Smith, 1993)

Note: The items comprising the Organizational Commitment Scales are not presented to respondents in the order shown, but, rather, are mixed together to form one 18-item series. Each item is presented with a 7-point response scale (1=strongly disagree and 7=strongly agree). Reversed scored items are indicated with an "(R)". Instructions are presented below.

Listed below is a series of statements that represent feelings that individuals might have about the company or organization for which they work. With respect to your own feelings about the particular organization for which you are now working, please indicate the degree of your agreement or disagreement with each statement by circling a number from 1 to 7.

AFFECTIVE COMMITMENT SCALE

1. I would be very happy to spend the rest of my career with this organization.
2. I really feel as if this organization's problems are my own.
3. I do not feel a strong sense of "belonging" to my organization. (R)
4. I do not feel "emotionally attached" to this organization. (R)
5. I do not feel like "part of the family" at my organization. (R)
6. This organization has a great deal of personal meaning for me.

CONTINUANCE COMMITMENT SCALE

1. Right now, staying with my organization is a matter of necessity as much as desire.
2. It would be very hard for me to leave my organization right now, even if I wanted to.
3. Too much of my life would be disrupted if I decided I wanted to leave my organization now.
4. I feel that I have too few options to consider leaving this organization.

5. If I had not already put so much of myself into this organization, I might consider working elsewhere.
6. One of the few negative consequences of leaving this organization would be the scarcity of available alternatives

NORMATIVE COMMITMENT SCALE

1. I do not feel any obligation to remain with my current employer. (R)
2. Even if it were to my advantage, I do not feel it would be right to leave my organization now.
3. I would feel guilty if I left my organization now.
4. This organization deserves my loyalty.
5. I would not leave my organization right now because I have a sense of obligation to the people in it.
6. I owe a great deal to my organization.

From: Meyer, J.P., Allen, N.J., & Smith, C.A. (1993). Commitment to organizations and occupations: Extension and test of a three-component conceptualization. *Journal of Applied Psychology*, 78, 538-551.

Appendix I

Intention to Quit Measure (Colarelli, 1984)

To what extent do you agree or disagree that the statements describe you?

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree
1	2	3	4	5

1. If I have my own way, I will be working for my current employer one year from now.
2. I frequently think of quitting my job.
3. I am planning to search for a new job in the next 12 months.

Appendix J

Hi,

My name is Lisa Baker and I am a doctoral student in the Counseling Psychology program at the University of Maryland at College Park. Dr. Mary Ann Hoffman and I are conducting a study examining work experiences in persons living with HIV/AIDS and we hope that our research will help inform interventions for individuals and communities around work-related issues.

I am contacting you because your organization, The Heart of Richmond AIDS Society, seems to capture a diverse group of people living with HIV/AIDS who could make a valuable contribution to this research through their participation. Participation involves completing a 10-minute anonymous on-line survey, which can be accessed at www.otal.umd.edu/healthandwork

I would greatly appreciate it if you would inform people at your organization about this research opportunity, which can happen several ways: 1) putting a link on your website to our study (www.otal.umd.edu/healthandwork); 2) Sending out an email: below is an email you can just “copy” and “paste” into an email to send to appropriate listservs and/or to individuals; 3) putting up a flyer (see attached flyer).

Thank you for your time and please feel free to email me if you have any questions.

Sincerely,

Lisa Baker

Email/Letter to Interested Persons:

Hi, my name is Lisa Baker and I am a doctoral student in the Counseling Psychology Program at the University of Maryland at College Park. Dr. Mary Ann Hoffman and I are conducting a study examining the experiences of workers living with HIV/AIDS, who are affected by changes in health status and who likely experience diverse work environments. Considering that there is very little research in this particular area, we hope to contribute much needed information about work-related issues to individuals, communities, and professionals.

If you are living with an HIV+ or AIDS diagnosis AND you are currently employed, you can contribute to this important research.

Just go to www.otal.umd.edu/healthandwork in order find out more about this study and to access the 10-minute anonymous questionnaire.

Lisa M. Baker, M.A.
Counseling Psychology Doctoral Candidate
Department of Psychology
University of Maryland at College Park
lbaker@psyc.umd.edu

Appendix K

Flyer Advertisement

15 Minutes of your time...YOU can help HIV/AIDS Research

Online Survey:

www.otal.umd.edu/healthandwork

Presently, very little research has been conducted examining the work experiences of persons living with HIV/AIDS. The Health and Work Study being conducted at The University of Maryland at College Park aims to contribute **much needed** information by studying the experiences of workers living with HIV/AIDS, who are affected by changes in health status and who likely experience diverse work environments.

If you are living with an HIV+ or AIDS diagnosis AND you are currently employed, you can contribute to this important research.

Just go to **www.otal.umd.edu/healthandwork** in order to find out more about this study and to access the **anonymous** questionnaire.

Thank you for your **valuable** contribution!

Appendix L

Newspaper Advertisement

Health and Work Study

If you are living with an HIV+ or AIDS diagnosis AND are currently employed, you can contribute to important research intended to enhance research and community intervention of individuals living with HIV/AIDS.

Go to www.otal.umd.edu/healthandwork in order to access the anonymous questionnaire.

Thank you for your valuable contribution!

Appendix M

Craig's List "Volunteer Section" Announcement

If you are living with an HIV+ or AIDS diagnosis AND are currently employed, you can contribute to important research intended to enhance research and community intervention of individuals living with HIV/AIDS.

Go to www.otal.umd.edu/healthandwork in order to access the anonymous questionnaire.

Thank you for your valuable contribution!

Appendix N

Internet Survey Informed Consent Letter

Please carefully read the following terms of consent:

I am at least 18 years of age and am currently employed. This study includes questionnaires about physical and emotional well-being related to living with HIV/AIDS, in addition to experiences of support in the workplace and outside of the workplace. I will be asked only to complete questionnaires about issues that pertain to me. I am not required to answer every question that might be asked, but I understand that more complete responses on my part will be most helpful to the researchers.

My participation in this research is voluntary. I am free to stop participating at any point without penalty. No information will be submitted to the University of Maryland server until I click on the final "Submit my responses" button at the end of each page. If at any point within one month after I have submitted my responses I wish to withdraw my participation in this study, I may contact the researcher at lbaker@psyc.umd.edu to request deletion of my data.

The data gathered in this study will be treated confidentially. The data will be stored with a random code number, and will be password protected. In order to assure anonymity as well as a high quality data set, the Internet Protocol (IP) address of each computer from which data are submitted, along with a time/date stamp of when the data were submitted, will be recorded. As with other Internet transmissions, it is conceivable that the researcher could use the IP address to gain access to my identity; however I understand that she will not use the information for that purpose. I understand that some employers may monitor Internet activity of their employees. If I complete this survey at work, I understand that my employer may have record of my participation in this study.

I understand that there are no other known risks associated with participation in this study. The benefits of this study are not intended to help me personally, but rather to help the investigator learn more about the work experiences of individuals living with HIV/AIDS.

I am free to ask any questions I may have now or at a later time. I may contact the researcher, Lisa Baker, M.A. at lbaker@psyc.umd.edu or at 301-405-2923 or Dr. Mary Ann Hoffman at lbaker@psyc.umd.edu. Also, I may contact Dr. Harold Sigall, Chair of the Department of Psychology Human Subjects Review Committee at 301-405-5920, if I have questions regarding my rights as a research participant.

By clicking "I agree" below, I attest to the fact that I have read, understand, and agree to the above statements and that I voluntarily agree to participate in this study.

I AGREE.

Appendix O

Online Debriefing Statement

Thank you for taking part in the Health and Work Study. This study is intended to determine what aspects of your health experiences, such as limitations due to your illness, and aspects of your workplace, such as social support at work, contribute to your level of job satisfaction. In order to do this, you were given measures of physical and emotional health, social support, discriminatory experiences at work, job satisfaction, organizational commitment, and intention to remain in the workplace. Because knowledge of the purpose of this study can influence the way in which people take surveys, such as this survey, please do not divulge the purpose of this study to anyone who plans to participate in this study. If you would like to contact me, I can be reached at:

Lisa Baker, M.A.

University of Maryland
Department of Psychology
Biology-Psychology
Building
College Park, MD 20742
301-404-2923
lbaker@psyc.umd.edu

Mary Ann Hoffman, Ph.D.

University of Maryland
Counseling and Personnel Services

3214 Benjamin Building
College Park, MD 20742
301-405-2865
mh35@umail.umd.edu

Please feel free to contact me if you would like results of the study. Thank you again for your participation!

Appendix P

Resource Page

The Body: An AIDS and HIV Information Resource:

<http://www.thebody.com>

A resource for information and resources (includes International resources)

National AIDS Hotline:

800-342-2437 (24 hours a day, daily)

TTY/TDD: 800-243-7889

English Hotline: 800-342-AIDS

Spanish Hotline: 800-344-SIDA

International line: 301-217-0023

International AIDS Society - USA

353 Kearny Street

San Francisco, California 94108

Tel: 415.675.7430

Fax: 415.675.7438

The Gay and Lesbian National Hotline: 888-THE-GLNH (888-843-4564)

Monday - Friday 6 pm to 10 pm;

Saturday 12 pm to 5 pm (Eastern Standard Time)

This is a non-profit organization which provides nationwide toll-free peer-counseling, information, and referrals.

HIVNetwork: A network for persons living with HIV/AIDS. Visit:

www.hivnetwork.com

National Working Positive Coalition. Visit: www.workingpositive.net

Women Alive: 800-554-4876

A national hotline staffed by HIV+ women volunteers. This hotline is geared for HIV+ women who would like peer support or treatment information. Spanish speaking operators are available. Open Monday - Friday 11 am to 6 pm (Pacific Time) 2 pm to 9 pm (Eastern Standard Time).

Women Alive International Hotline: 323-965-1564

The Americans with Disabilities Act Information and Assistance Hotline:

800-514-0301 V/TTY

Appendix Q

HIV/AIDS Network Meeting Script

Hi. My name is Lisa Baker and I am a doctoral candidate at the University of Maryland at College Park. Professor Mary Ann Hoffman, Ph.D. and I are conducting important and much needed research, which focuses on the work experiences of persons living with HIV/AIDS. We aim to contribute much needed information by studying workers living with HIV/AIDS experiences as they may experience changes in health status and likely have diverse experiences in their work environments. We hope that our research will help inform interventions for individuals and communities, such as in Brooklyn, around work-related issues, as well as advance this area of research.

Criteria for participation in this study are: 1) persons at least 18 years of age, 2) have been diagnosed with HIV/AIDS, and 3) are currently employed. Participation involves taking an anonymous survey, which takes approximately 15 minutes, and can be taken either on paper and be mailed to the researcher OR participants can choose to take the survey on the Internet. The website of the survey is www.otal.umd.edu/healthandwork.

You can help with this important research in various ways. If you meet the criteria for participating in the study, you can take the survey yourself and hand it to me today, send it to me, and/or take the survey on the Internet. Additionally, if you know anyone who would be appropriate for participation you can take survey packets with you today and give hand them out to people who you think would be likely to complete the survey. Enclosed in each packet is a consent letter, the survey, a debriefing form, a resource list, and a raffle ticket for \$100.

The letter describing the study and requirements needs to be read thoroughly and it includes instructions for entry into the drawing for \$100. Also, it has my contact information, as well as contact information for others involved in the research. Please let me know if you have any questions. Thank you for your help!!!

Appendix R

Revised Consent Form (mail-in version)

Dear Participant,

If you are living with an HIV/AIDS diagnosis AND are currently employed, you can contribute to MUCH NEEDED and important research, intended address the employment needs of persons living with HIV/AIDS. This important area of intervention and research is aimed at empowering individuals to maintain meaningful employment experiences and/or return to work, and unfortunately, it has not received the attention it deserves by researchers and policy-makers.

My name is Lisa Baker and I am a doctoral candidate at the University of Maryland at College Park. In our counseling and research work, Dr. Mary Ann Hoffman and I realized that employment concerns of persons living with HIV/AIDS needed to be given greater attention and be better addressed. Therefore, we created The Health and Work Project at University of Maryland. Our project focuses on the work experiences of persons living with HIV/AIDS, addressing changes in health status and quality of work environment/supports. We hope our research will help inform interventions for individuals and communities around work-related issues, as well as advance this area of research and policy.

The purpose of this letter is to request your participation in an anonymous survey, which will take approximately 15 minutes to complete. We invite you to participate in this study if you fit the following criteria:

1) you are at least 18 years of age, 2) you have been diagnosed with HIV/AIDS, and 3) you are currently employed. We appreciate your time and contribution to this important study.

Enter Drawing for \$100!!!

In addition to your participation helping this important area of intervention and research, to thank you for your time, you will be entered into a drawing for a \$100 cash prize. Enclosed is half of a raffle ticket for you to keep. Once the data collection is completed (around April 2004), a ticket number will be randomly selected. The winning ticket number will be posted on the following website after data collection: www.otal.umd.edu/healthandwork. If you are unable to access the Internet, you can call me at 201-780-4470 to find out the winning number. If you are selected, you will need to mail me, Lisa Baker, your ticket stub to the below address and provide an address where the prize can be mailed to you. You will be reimbursed for your postage. Please note, the ticket numbers are not associated with the your survey responses.

There are no known risks associated with participation in this study. This study is intended to help the investigators learn more about the work experiences of individuals living with HIV/AIDS. Should you feel uncomfortable with the questions being asked of you at any time during this research, you may contact us and/or end your participation. Additionally, we have constructed and enclosed a list of resources that you can use if you would like more information and assistance.

During participation, I will be available to answer questions at lbaker@psyc.umd.edu or at 973-676-1000 ext. 1280 or you can contact Dr. Mary Ann Hoffman at mh35@umail.umd.edu.

Also, you may contact Dr. Harold Sigall, Chair of the Department of Psychology Human Subjects Review Committee at 301-405-5920, if you have questions regarding your rights as a research participant.

Again, names will not be written on the surveys, and therefore you cannot be identified. A code number will appear on the survey to record the percentage of packets that are returned. These code numbers will not be connected with any identifying information of the participants, nor are they connected with your raffle ticket number. All of your responses will be kept strictly confidential! Following your participation, I will be available by phone to answer any questions or concerns you may have.

Please return the survey in the large envelope. If you are interested in entering the drawing, please hold on to your ticket stub for verification purposes. Finally, the completion of the survey materials will indicate to us your willingness to participate in the study. Thank you in advance for your participation!!!

Sincerely,
Lisa M. Baker, M.A.
Psychology Service (116B)
VA New Jersey Health Care System
385 Tremont Avenue
East Orange, NJ 07018-1095
lbaker@psyc.umd.edu

Mary Ann Hoffman, Ph.D.
Professor
Counseling & Personnel Services
University of Maryland
College Park, MD 20742-1125
mh35@umail.umd.edu

****ALSO: You can choose to take the anonymous survey online at
www.otal.umd.edu/healthandwork

Appendix S

Revised Debriefing Form (mail-in version)

Dear Participant,

Thank you for taking part in the Health and Work Study. This study is intended to determine what aspects of your health experiences, such as limitations due to your illness, and aspects of your workplace, such as workplace social support and discrimination, contribute to your level of job satisfaction. In order to do this, you were given measures of physical and emotional health, social support, discriminatory experiences at work, job satisfaction, organizational commitment, and intention to remain in the workplace. Because knowledge of the purpose of this study can influence the way in which people take surveys, such as this survey, please do not divulge the purpose of this study to anyone who plans to participate in this study. If you would like to contact me, I can be reached at:

Sincerely,

Lisa M. Baker, M.A.
Psychology Service (116B)
VA New Jersey Health Care System
385 Tremont Avenue
East Orange, NJ 07018-1095
lbaker@psyc.umd.edu
(973) 676-1000 ext. 1280

Mary Ann Hoffman, Ph.D.
Counseling & Personnel Services
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mh35@umail.umd.edu

Please feel free to contact us if you would like results of the study. Thank you again for your participation!

****Instruction for entering drawing for \$100 prize!!!**

Remember to hold on to your raffle ticket for the drawing in _____. The winning number will be posted on the following website: www.otal.umd.edu/healthandwork. Also, feel free to call Lisa Baker for the winning number if you are unable to access the Internet at that time. Good luck!

Appendix T

Revised Consent Form (online version)

Introduction to Study and Informed Consent

Welcome to the Health and Work Study! My name is Lisa Baker and I am a doctoral student at the University of Maryland at College Park. Professor Mary Ann Hoffman, Ph.D. and I are conducting important and much needed research, which focuses on the work experiences of persons living with HIV/AIDS. Presently, very little research has been conducted examining the work experiences of persons living with HIV/AIDS. We are attempting to contribute much needed information by studying workers living with HIV/AIDS, who may experience changes in health status and who likely have diverse experiences in their work environments. We invite you to participate in this study if you fit the following criteria: 1) you are at least 18 years of age, 2) you have been diagnosed with HIV or AIDS, and 3) you are currently employed. I appreciate your time and contribution to this important study.

At the end of the survey you will be provided with information for entry into the drawing for a cash prize of \$100!!!!

Please carefully read the following terms of consent:

I am at least 18 years of age and I am currently employed. This study includes questionnaires about physical and emotional health related to living with HIV/AIDS, social support in the workplace and outside of the workplace, and feelings and attitudes related to the workplace. I will be asked only to complete questionnaires about issues that pertain to me. I am not required to answer every question, but I understand that the more complete my responses, the more beneficial to the research.

My participation in this research is voluntary. I am free to stop participating at any point without penalty. No information will be submitted to the University of Maryland server until I click on the final "Submit My Responses" button at the end of each page. If at any point within one month after I have submitted my responses I wish to withdraw my participation in this study, I may contact the researcher at lbaker@psyc.umd.edu to request deletion of my data.

The data gathered in this study will be treated confidentially. The data will be stored with a random code number, and will be password protected. In order to assure anonymity as well as a high quality data set, the Internet Protocol (IP) address of each computer from which data are submitted, along with a time/date stamp of when the data were submitted, will be recorded. As with other Internet transmissions, it is conceivable that the researcher could use the IP address to gain access to my identity; however I understand that she will not use the information for that purpose. I understand that some employers may monitor Internet activity of their employees. If I complete this survey at work, I understand that my employer may have record of my participation in this study.

I understand that there are no other known risks associated with participation in this study.

The benefits of this study are not intended to help me personally, but rather to help the investigator learn more about the work experiences of individuals living with HIV/AIDS.

I am free to ask any questions I may have now or at a later time. I may contact the researcher, Lisa Baker, M.A. at lbaker@psyc.umd.edu or at 301-405-2923 or Dr. Mary Ann Hoffman at mh35@umail.umd.edu. Also, I may contact Dr. Harold Sigall, Chair of the Department of Psychology Human Subjects Review Committee at 301-405-5920, if I have questions regarding my rights as a research participant.

By clicking "I agree" below, I attest to the fact that I have read, understand, and agree to the above statements and that I voluntarily agree to participate in this study.

I Agree.
Take me to the survey

Appendix U

Drawing Entry Instructions (online version)

Instructions for entering drawing for \$100 prize!!! Create 2 codes AND keep a record of your codes.

1) You need to create TWO DIFFERENT codes for entry into the drawing. The codes need to be **different** from one another and each needs to include: **3 letters and 3 numbers in any order**. You may want to choose a combination unique to you to avoid repeat entries.

To Enter the Drawing for \$100 you can submit a set of codes in the boxes below OR you can email your codes to the researcher at Lbaker@psyc.umd.edu.

Code 1: (3 letter & 3 numbers in any order)

Code 2: (3 letter & 3 numbers in any order)

Your codes will be kept separately from your survey responses. If you choose to email your codes totally separately, your email address will be CONFIDENTIAL.

SO, please keep BOTH of your codes because the codes will be used in the drawing. In FALL 2004 the winner will be announced on the website, www.otal.umd.edu/healthandwork

(Note: only Code 1 will be posted on the website).

Appendix V

Revised Debriefing Form (online version)

Thank you for taking part in the Health and Work Study. This study is intended to determine what aspects of your health experiences, such as limitations due to your illness, and aspects of your workplace, such as workplace social support and discrimination, contribute to your level of job satisfaction. In order to do this, you were given measures of physical and emotional health, social support, discriminatory experiences at work, job satisfaction, organizational commitment, and intention to remain in the workplace. Because knowledge of the purpose of this study can influence the way in which people take surveys, such as this survey, please do not divulge the purpose of this study to anyone who plans to participate in this study. If you would like to contact me, I can be reached at:

Lisa Baker, M.A.
University of Maryland
Department of Psychology
Biology-Psychology Building
College Park, MD 20742
301-404-2923
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Mary Ann Hoffman, Ph.D.
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301-405-2865
mh35@umail.umd.edu

Please feel free to contact us if you would like results of the study!

Drawing Entry:

REMEMBER: Please keep BOTH of your codes because the codes will be used in the drawing.

In June/July 2004 the winner will be announced on the website, www.otal.umd.edu/healthandwork(Note: only Code 1 will be posted on the website).

Good luck and thanks again for your participation!

[Click Here for Resources That You May Find Useful](#)

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