1999

**Examination of a stress process model in people living with AIDS/HIV**

Bret Morgan Sawyer  
*College of William & Mary - School of Education*

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EXAMINATION OF A STRESS PROCESS MODEL IN PEOPLE LIVING WITH AIDS/HIV

A Dissertation
Presented to
The Faculty of the School of Education
The College of William and Mary in Virginia

In Partial Fulfillment of the Requirements for the Degree Doctor of Education

by
Bret Morgan Sawyer

November 1998
EXAMINATION OF A STRESS PROCESS MODEL IN PEOPLE LIVING WITH AIDS/HIV

by

Bret Morgan Sawyer

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Dedication

To my partner, Chris, whose support and belief in me helped make this endeavor possible.

To my family for instilling in me the importance of education and for their love and support.

To all of the individuals I have had the honor to work with, both deceased and still living, who inspired this endeavor and motivated me to complete this research.
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Abstract

This survey research examined a stress process model (A-B-C) in People Living With AIDS and/or HIV (PLWAs) with point “A” representing stressful life events, point “B” the PLWAs’ psychological make-up, and point “C” the emotional consequences. Point “A” was assessed by the HIV-stressor scale which yielded two results: (1) number of stressors experienced, and (2) the PLWAs’ perception of how stressful each event was for them. Point “B” was assessed by measuring two constructs: (1) Sense Of Coherence (SOC) which measured the PLWAs’ ability to find meaning in their illness, and (2) Perceived Health Competence (PHC) which measured the PLWAs’ perception that they have control over their health situation. Depression was measured at point “C.” In addition to these factors, length of time since diagnosis of HIV and stage of HIV-infection was examined. In terms of findings, this research demonstrated the following: SOC is significantly related to depression and to perception of stressor severity; PHC was only significantly related to depression; perception of stressor severity and number of stressor(s) was not significantly related to level of depression; PHC was not significantly related to perception of stressor severity; time since diagnosis was not significantly related to SOC; stage of illness was not significantly related to PHC.
EXAMINATION OF A STRESS PROCESS MODEL IN PEOPLE LIVING WITH AIDS/HIV
Chapter One: Rationale

Stress in chronic illness is of interest to researchers because people who are diagnosed with a major illness or with Acquired Immune Deficiency Syndrome (AIDS) will experience much distress as they confront existential issues that center on mortality, disability, role strain, and physical pain (Thompson et. al., 1996). As these individuals live with a chronic illness and face these issues, their core conceptions of self and world are challenged. As individuals begin to cope with their changing reality, they realize that they can no longer engage the world as they once did. They are put into the position of having to redefine themselves (Giovinco and McDougald, 1994). When individuals are diagnosed with AIDS and/or HIV, they are faced with this changing reality and its incumbent stress. A diagnosis of HIV has many more complications than being diagnosed with some other chronic illness, such as cancer or coronary heart disease. For example, since HIV is often sexually transmitted, HIV complicates issues surrounding relationship behaviors. PLWAs must make decisions regarding how close to become to someone before disclosing their HIV-status, and then live, at least temporarily, with the fear of possible rejection. Also, since HIV is considered a sexually transmitted disease, HIV can act as a barrier to physical intimacy. During the act of sex, PLWAs may have difficulty becoming aroused or feeling emotionally connected to another if they are harboring fears of becoming reinfected, or fear that they may infect their HIV-negative partner(s). In addition, the PLWA may become disabled losing their career identity and even the ability to meet their personal needs. Through these multiple losses, the PLWA must somehow adjust to these changes which will probably require some type of redefinition of
In order to enhance this process of redefinition, and hence emotional well-being and quality of life for people living with chronic illnesses, counselors working with this population need to understand the psychological processes which lead to positive adjustment in the face of a serious illness. In addition, since stress has been demonstrated to have a direct negative physiological effect on the immune system (Patterson, 1996; Littrell, 1996; Antoni, 1991), the investigation of stress in chronic illness, and more specifically Human Immunodeficiency Virus (HIV) disease, takes on an even greater importance. In reference to this connection between stress and immunological functioning, Littrell (1996), in the author's review of the literature on the emerging field of psychoneuroimmunology, makes the following observation: "data....show that how people feel and how people appraise their living situations can affect their immune system via the white blood cells, which eliminate or incapacitate viruses, cancers, bacteria, and other microbes" (p. 287). Littrell reveals the practical applications of this data by stating: "Because mental health professionals have developed interventions for changing people's perspectives on life and their resultant feelings, it becomes possible, through psychological interventions, to influence immune system functioning" (p. 287). Therefore, such an investigation could lead to practical implications for counseling People Living With AIDS and/or HIV (PLWAs).

Counseling Implications

If, through this vein of research, a more thorough understanding of cognitive mediators is gained, then this understanding will improve counselors' abilities to enhance quality of life and emotional well-being.
of PLWAs. The importance of understanding the resources PLWAs' draw upon to deal with a potentially terminal illnesses cannot be underestimated for the counselor who works with PLWAs. Through empirically researching the cognitive mediating variables of coherence and perceived health competence, an understanding of these psychological processes which lead to successful adjustment will begin to emerge. Indeed, Litt (1988) stated that "it is expected that continued research in cognitive mediators of stressful experience and their role in appraisal and attribution will have enormous potential for use in clinical interventions" (p. 256). Thompson et. al. (1996) provided an excellent summation as to the possible counseling implications regarding this exploration into the difference between primary and secondary control:

[There are] two avenues for increasing feelings of control. The first is to acknowledge that changing one's situation [primary control] is not the only source of feelings of mastery. A sense of control can also be developed from the perception that one can successfully adjust to adversity and accept undesirable circumstances [secondary control]. This process is similar to Frankl's ideas about the 'search for meaning' in which perceived control can be maintained through finding meaning in adverse situations through the belief that there is always one option for control, that is, to control one's attitude toward suffering. Interventions that help individuals make sense of what is happening to them....or work on ways to accept the aspects of the experience that cannot be changed would be avenues for increasing secondary control (p. 546).

**Phenomenological Experience of HIV**

In 1994, AIDS was the ninth leading cause of death in the United States (Peltz and Brizer), and currently, millions of people in the United States are living with AIDS and/or HIV. For the majority of these people, this diagnosis is a traumatic experience that often involves feelings of contamination, stigmatization, isolation, blame, powerlessness, and loss.
After the initial shock fades, many individuals enter into denial which can last years, attempting to live their lives as if they had not been diagnosed with HIV. After all, nobody would want to identify and confront the aforementioned feelings. However, eventually HIV forces itself into many PLWAs' consciousnesses when HIV begins to physically manifest itself, forcing many individuals to integrate HIV and its psychosocial ramifications into their realities. Existentially, this process will require PLWAs to make sense of this experience.

More often than not, this process is a difficult one. For not only does this process force individuals to face their own mortality and the fact that life is finite, it also forces them to change their conceptualization of HIV that society has encouraged the individual to adopt. Often individuals internalize feelings of contamination and stigmatization because society teaches that HIV is something that only marginalized groups contract (i.e. gay people, drug abusers, promiscuous individuals). In addition, many individuals may feel blamed and punished because society endorses the idea that PLWAs' previous behaviors is what infected them with HIV. Furthermore, individuals will probably fear informing significant others because of their fear of rejection which essentially leaves many PLWAs isolated with their feelings of contamination, blame, loss, and powerlessness. In reference to the loss, many of these individuals will feel a loss of future possibilities in terms of not only career, but perhaps relationships as well. Last, many individuals will feel a sense of powerlessness as their disease progresses and physical symptoms manifest despite their best efforts to take care of themselves. Amidst all this negativity, PLWAs strive to find meaning in their situation. Beecher (1959) identified an
anecdotal example which exemplifies how finding meaning in an adverse situation reduces suffering.

Beecher discovered that "many soldiers wounded in battle did not complain of intense pain despite serious injury that would have prompted complaints of severe pain in others." When these soldiers were questioned, many were found to view the wound as their "ticket home." He concluded that pain experience is determined by factors in addition to the amount of tissue damage, and that one of these is the significance of the injury (Litt, 1988). This vignette clearly demonstrates that through finding meaning in the situation, one's perception of the situation or stressor can be influenced, thereby mediating one's stress response.

When this vignette is placed within the context of a study conducted by Blaney et. al. (1990) in which they demonstrated that HIV-positive people experienced more negative events and rated the impact of these events as more intense than HIV-negative men, the importance of empirically studying and understanding PLWAs' phenomenological experiences can be better appreciated. The idea of placing the war vignette in the realm of HIV is the intent of this proposed study. Another example would be Viktor Frankl's experiences in the Nazi concentration camps where he was able to find meaning through the stance he took toward unavoidable suffering. Even though Frankl did not have immediate control of the situation, he exercised control over his attitude toward the unavoidable suffering. He chose to face Nazi cruelty and degradation with dignity and impunity. In later years, Frankl wrote that this "stance" helped him to survive, but exactly how did this "stance" help Frankl? A stress process model could theoretically help find an answer to this question.
Theoretical Foundation: Green's Stress Process Model

The first aspect is the "input from the environment in the form of an event" (Green, 1990, p. 1633). Words which denote this aspect include stimulus, event, stressor, and loss since all of these terms imply an agent in the environment to which someone is responding. In this aspect, something happens which can probably be defined and measured objectively. For example, a person has been diagnosed with HIV, or has been hospitalized with an opportunistic infection, or has been sent to a concentration camp. The second aspect goes beyond the environment incorporating the person's perception and appraisal of the event. Words which denote this aspect include serious threat, bereavement, and trauma because these terms imply "an interaction between an environmental event and the person who experiences it" (p. 1633). For example, a person is diagnosed with HIV (first aspect), and the person may or may not find meaning in the diagnosis and may or may not feel in control of the situation. These perceptions of meaning and control are cognitive mediating variables which constitute aspect two. For example, Frankl's "stance" toward unavoidable suffering would be considered a part of aspect two. The third and final aspect refers to the psychological result or outcome. Words which denote this aspect include distress, grief, and stress response. Instruments which measure anxiety or depression assess this aspect because emotional states are the possible outcomes of the stressor (aspect one) and the individual's phenomenological world (aspect two). With this theoretical model in mind, two cognitive mediating variables, PHC (Perceived Health Competence) and coherence, will be defined. These two variables both constitute aspect two.
Concept of Perceived Health Competence

Essentially, the purpose of this research is to better understand what role PLWAs' cognitive mediating variables (i.e. PHC and level of coherence) play in influencing their appraisal of stressful life events and thereby mediating their stress response. PHC is closely tied to the concept of generalized self-efficacy which refers to individuals' expectancy that they can effectively interact with their environment (Wallston, 1992). Elsewhere, perceived self-efficacy has been defined as individuals' beliefs regarding their own abilities, and that furthermore, these self-perceptions of efficacy are felt to be strong determinants of emotional processes (O'Leary, 1992). Indeed, O'Leary states that "perceived self-efficacy to cope with stressors has been explored as a buffering factor in the physiological stress response" (p. 236). This appraisal of one's coping resources or ability to manage a situation is termed "secondary appraisal;" it is a self-assessment regarding the individual's perception of what resources he or she can bring to bear against a potential threat (p. 236), while "primary appraisal" refers to the individual's perception of threat salience itself. O'Leary continues that "Those who believe themselves to possess adequate capabilities for managing or controlling a stressor in a manner that prevents damage will be less anxious and should display reduced physiological response to the stressor" (p. 236). One researcher even posited that this secondary appraisal is a "more important determinant of the stress response than the magnitude of the stressful stimulus itself" (Cohen et. al., 1977, p. 142).

For the purposes of this study, PHC will be treated as a cognitive mediating variable that moderates the effects of stressors. The theoretical roots of PHC is based upon Bandura's social cognitive theory...
and the lack of explanatory power behind Rotter's locus of control theory in predicting behaviors and emotional outcomes. In social cognitive theory, perceived self-efficacy plays a central role in the stress response process. In Bandura's (1986) theory, stressors are not treated as being fixed in terms of threat salience, rather the intensity of threat is contingent on the perception of environmental stressors as exceeding one's coping capabilities. Thus, individuals who feel they can "exercise control over potential threats do not conjure up apprehensive cognitions and are not stressed by them" (Wiedenfeld et al., 1990, p. 1083). This notion can clearly be illustrated and substantiated from an historical standpoint.

On the macro-level, one can see historically, that humankind used and still uses mythology, religion, and superstition as its "coping capabilities" to not only explain the unknown, but to also feel control over the environment - to feel that we are not just victims of random acts of chaos. Even today, mankind has turned to science to feel this mastery. For example, computer programs and satellite technology are allowing us to predict the effects of El Nino, and the probable flooding that this weather system will bring to the United States' western coast. Clearly, humankind has a need to feel in control because when we do not feel a sense of mastery over our environment, we experience anxiety regarding an uncertain future. Religion, science, mythology, and superstitious beliefs were or are just tools to help humankind cope with volcanoes, hurricanes, train wrecks, and AIDS. Societal beliefs in these social systems buffer the effects of these stressors by affecting our appraisal processes of these events. If we feel we can predict or exercise control over such events, then these events will not create as much fear.
and distress.

On the micro-level, "Accounts of non-medical healing (and conversely, phenomena like ‘voodoo death’) have, in recent times, been explained by invoking appraisal processes that mediate the impact of a given stressor" (Litt, 1988, p. 241-2). When the concepts of “voodoo death” or “non-medical healing” are explored within the context of Green’s stress process model, the idea of "perceived control" takes on new relevancy. If a tribesmen believes in voodoo magic (perceived control by something external), and is aware that the shaman is invoking forces to destroy him, the tribesman will die, not because of the stressor per se (the shaman’s actions) but rather the tribesman’s perception of the shaman’s powers. Thus, the emotional consequence of this archaic example was death. In terms of non-medical healing, the likelihood of such events transpiring are probably a function of whether the person feels they can exercise control over the disease as well as other variables such as level of disease progression.

**Concept of Coherence**

The second mediating variable of coherence describes an individual’s ability to derive meaning and purpose from his or her situation. Litt (1993) writes that, "Clinically, coherence indexes an individual’s resolve over their current illness, despite the presence of distressing symptoms" (p. 256). Litt continues that, "With greater levels of coherence, patients could experience painful symptoms but still feel 'adjusted' because they have derived meaning from their situations. More specifically, it can be said that they have mentally processed their illness in ways that permit them to live their lives with less cognitive or emotional disruption" (p. 256). Individuals with a weak sense of
coherence are expected to maintain perceptions of environmental demands as stress-producing (Carmel, and Bernstein, 1990).

Antonovsky (1987), the originator of the concept, states that sense of coherence has three core components: comprehensibility, manageability, and meaningfulness. Comprehensibility "refers to the extent to which one perceives the stimuli that confront one...as making cognitive sense, as information that is ordered, consistent, structured, and clear, rather than as noise - chaotic, disordered, random, accidental, inexplicable" (p. 16-7). An individual, who has a high sense of comprehensibility, will expect that the "stimuli that he or she will encounter in the future will be predictable, or at the very least, when they do come as surprises, that they will be orderable and explicable" (p. 17). Antonovsky does note that this concept has nothing to do with desirability, and that events such as death, war, and failure can occur. Thus, all comprehensibility refers to is the individual's ability to make sense of these events.

The second component, manageability, refers to the individual's perception that he or she has at his or her disposal resources to help him or her cope with the stressor. Manageability is formally defined by Antonovsky (1987) as "the extent to which one perceives that resources are at one's disposal which are adequate to meet the demands posed by the stimuli that bombard one" (p. 17). For the purposes of this definition, Antonovsky states that "resources" refers to those both under one's control and under the control of legitimate others (i.e. one's spouse, friends, God, a physician). Antonovsky elaborates that "to the extent that one has a high sense of manageability, one will not feel victimized by events or feel that life treats one unfairly" (p. 18).
The third and final component of "meaningfulness" refers to "the extent to which one feels that life makes sense emotionally, that at least some of the problems and demands posed by living are worth investing energy in, are worthy of commitment and engagement, are challenges that are welcome rather than burdens..." (p. 18). Antonovsky views this component as having the motivational element, and that even if an individual had a high sense of comprehensibility and manageability, this high sense would be temporary if the individual had a low sense of meaningfulness. Thus, Antonovsky felt this was the most important component of the three. Simply put, an individual with a low sense of meaningfulness would give "little indication that anything in life seemed to matter particularly to" him or her (p. 18). In summary, sense of coherence can be defined globally as:

the extent to which one has a pervasive, enduring though dynamic feeling of confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli; and (3) these demands are challenges, worthy of investment and engagement. (p. 19).

In Antonovsky's discussion of sense of coherence, he discusses boundaries and how these imperceptible lines separate what is subjectively important to that particular person and what is not subjectively important to that same individual. This concept suggests that one need not necessarily feel that all life must be highly comprehensible, manageable, and meaningful in order for one to have a strong sense of coherence. Coherence is not a highbrow concept limited to the intellectual elite. Rather, what is important is that individuals have "spheres of life" which are important to them. This sphere could be as simple as tending to a garden, or caring for one's pet. Antonovsky,
however, does state that within one's boundaries, there must be at least four spheres: "one's inner feelings, one's intermediate interpersonal relations, one's major activity, and existential issues (i.e. death, inevitable failures, shortcomings, conflict, and isolation)" (p. 23). The Orientation to Life Questionnaire (a.k.a. Sense of Coherence scale - SOC), measures this sense of coherence and is limited to these four spheres. With the theoretical foundation having been laid, the purpose and rationale will be delineated. As will be discerned, this proposal does significantly extend the research base while being rooted to the existing literature.

**Purpose and Rationale**

One of the purposes of this study is to determine to what extent does PLWAs' PHC and coherence affect appraisal of how much distress various stressors are producing for them. After a thorough review of the literature, not one study was located which attempted to answer this question; however, many studies skirted around this area. In one such study, "The stressors and stress of being HIV-positive," by Thompson et. al. (1996), these authors developed an instrument entitled the "HIV Stressor Scale" (aspect one) which lists 25 common stressful events that PLWAs commonly face: lost job, changed doctors, lost housing, lost health insurance, sexual difficulties, death of a loved one, bureaucratic (red-tape) problems, friend/lover diagnosed with HIV, etc. The participants were instructed to indicate which events they experienced in the previous month by placing a checkmark next to those applicable events. In addition, participants were then requested to rate to what degree each checkmarked event produced distress for them. This appraisal of severity, for Thompson's research study, constituted aspect
two. perception and appraisal of the event; however, this does not at all address how PLWAs' phenomenological world interacted with the stressor to produce the psychological outcome (aspect three - distress). Instead, this study focused on which stressful events (aspect one) were most likely to impact measurements of self-esteem and depression or contribute to problematic behaviors such as substance abuse, and unprotected sex (aspect three), and if perceptions of severity of stressors impacted self-esteem, depression, and problematic behaviors.

As Thompson et. al. (1996) clearly state, the first goal of their study was to identify stressors faced by PLWAs and to examine the relationship between stressors and psychological adjustment to get a clearer picture of the effects of stress in the daily lives of PLWAs; however, Thompson et. al. (1996) do not address PLWAs' unique cognitive mediators. Specifically, these two questions were not researched: (1) "what mediates PLWAs' responses to a stressor, thus reducing or increasing PLWAs' stress responses?, and (2) "what influences PLWAs' appraisal of stressors?" Thompson's second goal was to examine the extent to which stressors, perceived stress, and depression are associated with several unhealthy behaviors: alcohol use, smoking, and unsafe sex. As can be discerned, Thompson's study is concerned about the effects of stress: (1) which types of stressors are associated with worse psychological adjustment (i.e. greater depression), and (2) are stress responses and stressors associated with more unhealthy behaviors? Interestingly enough, the authors conclude, "Interventions are needed to reduce perceived stress..." (p. 13); however, these researchers offer no suggestions, nor do they reason out the research implications of such a statement. This proposed research design will attempt to tease out and
implement these research implications by incorporating aspects of Linn et. al.'s (1993) study.

Linn et. al.'s (1993) study, "HIV-illness, social support, sense of coherence, and psychosocial well-being in a sample of help seeking adults," researches a psychological construct (coherence) that could very well be integral to an intervention to "reduce perceived stress." Linn describes coherence as a person's ability to derive meaning and purpose from his or her situation and as having as its conceptual focus the idea of "being in control." Linn states more specifically that people high in coherence have "mentally processed their illness in ways that permit them to live their life with less cognitive or emotional disruption" (p. 256). Linn's research question was to determine whether the "level of perceived coherence, i.e. the extent to which individuals derive meaning and purpose in their lives despite their HIV-illness, is related to levels of self-esteem and anxiety?" (p. 254). Seligman's (1975) theory is used by Linn as the theoretical basis: "learned helplessness occurs when a person experiences an event or situation as uncontrollable" (p. 255). Linn continues with the idea that HIV-illness is such an event when the "perceived relationship between the individual's health related behavior and their physical well-being breaks down" (p. 255). Linn describes this "perceived relationship" as the "link" (aspect two) between uncontrollable negative events (aspect one) and stress and anxiety (aspect three); however, his study does not address aspect one (stressors) at all. Thus, how aspect two (learned helplessness) impacts PLWAs' perceptions of how much stress each particular HIV-related stressor produce (perception of distress severity) could not be investigated. In summary, Linn's study basically assumes that coherence will impact self-esteem and anxiety,
but does not demonstrate exactly how this connection operates because their study does not address "stressors" at all. This proposed study intends to demonstrate that coherence impacts PLWAs' appraisal of stressor severity which then impacts the psychological outcome.

The results of Linn et. al.'s (1993) study did demonstrate that coherence reduced anxiety; however, the investigation did not answer why or how coherence reduced anxiety. The HIV Stressor Scale, briefly described earlier in Thompson's (1996) study, could potentially provide an answer, and would allow the following question to be researched: "Does coherence impact PLWAs' perception of stressful, uncontrollable events which then impact PLWAs' levels of anxiety?" Since the HIV-Stressor Scale measures PLWAs' severity perceptions (how much distress each stressor created for the subject) regarding 25 different stressors, a more thorough analysis of aspect two is guaranteed. Questions which can now be answered include: does coherence impact the perception of stressor(s)? and is perception of stressor, as measured by the HIV-stressor scale, more related to anxiety than level of coherence? Litt (1988) conducted a thorough review of the literature on this topic. Litt writes that, "cognitive strategies for the amelioration of stressful experience have drawn increasing interest in recent years, but the means by which these strategies result in decreasing aversiveness are not well understood" (p. 241). This state of affairs seems largely unchanged for the past 9 years, especially in the research on HIV. Nobody has researched how PLWAs' cognitive mediators affect their appraisal of stressors.

Surprisingly, as has already been addressed, little empirical research has been done in the area of HIV and Green's stress process

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model. Litt. et. al. (1993), in a literature review, sum this scantiness up best: "little systematic research has been done on factors that influence the psychosocial well-being of persons with HIV. For the most part, there is descriptive research that reports the types of problems persons with HIV have and/or their coping strategies, correlational research of HIV status and psychiatric symptoms, or small sample qualitative studies..." (p. 255). Hall (1996), in her article entitled, "Ways of maintaining hope in HIV disease," shares another perspective on this matter: "There is very little research on individuals' response to living with the daily uncertainty of having HIV disease from the emic or the person-centered perspective of the one who is living with the disease" (p. 284). Clearly, a gap in HIV-psychosocial research exists which does not empirically address cognitive mediating variables within Green's stress process model or any other stress process model for that matter. In addition to addressing this gap, perhaps the inconsistent findings on psychosocial disease stage comparisons could be explained by focusing on aspect two as opposed to aspect three.

Research inconsistency is yet an additional, and final, rationale for conducting this proposed study. For example, Perdices et. al. (1992) discovered that among gay, Australian men, anxiety and depression did not differ between disease states, and Wolf et. al. (1990) also showed no statistical differences in mood between disease states. In addition, Siegel et. al. (1996) found that depressive symptomatology is not related to disease state, and also found no statistical difference in "mental health" as operationally defined by the Mental Health Index. In direct contrast, Kurdek et. al. (1990), in which they compared just two disease states (asymptomatic and symptomatic to include AIDS), demonstrated that the
asymptomatic subjects reported greater death anxiety and more severe psychological distress than symptomatic individuals, while Lyketsos (1996) demonstrated that depression levels peaked just before the onset of AIDS. As can be discerned, and as indicated by Hedge (1991), studies researching emotional state of people in different phases of HIV-infection has not yielded consistent findings. While Hedge (1991) attributes this inconsistency to different sampling and retention methods and to different operational definitions of mental health, he may have overlooked the obvious, e.g. the perceptual / interactional component of aspect two. Since traditionally disease stage comparison focus on aspect three, psychological outcome, perhaps a disease stage comparison which focuses on aspect two (cognitive mediators) is in order. This proposed research endeavor may help us understand these aspect three discrepancies and perhaps even reconcile these differences by shedding light on these contradictory findings. Perhaps by focusing on aspect two, by addressing such concepts as coherence and PHC, the current inconsistent research findings could be better understood. Indeed the following study offers a conceptual framework for studying these two cognitive mediating variables in terms of psychosocial disease stage comparisons.

Thompson et. al. (1996) explore the role of primary control which refers to "having control by believing that you can influence existing realities" (Thompson, 1996, p. 540), and the role of secondary control which involves accepting one's situation and deriving meaning from the event. These researchers posit that primary control is central to positive adjustment if the PLWA's health is not failing, but that when the person's health starts to fail that secondary control becomes a more
important process for positive adjustment. Although the rationale is well-thought out, these researchers use recently developed instruments which have no validity. As a result, the informed reader cannot be assured that these recently developed instruments measure secondary and primary control. With this limitation in mind, this research proposal intends to correct for this deficit by using well-established instruments that have repeatedly demonstrated validity and reliability. With reference to primary control, since the PHC scale measures the belief that individuals have the capability to deal with an illness, the operational definition employed by Thompson et al. (1996) for primary control fits well within the theoretical framework of PHC. With reference to secondary control, since the Sense of Coherence scale measures the ability to derive meaning from life despite the appearance of distressing symptoms and illness related stressors, the operational definition for secondary control employed by Thompson et al. (1996) fits well within the theoretical framework of the Sense of Coherence scale. In light of this study, even though findings have been inconsistent in terms of disease stage comparisons, this idea of primary and secondary control offers a way of understanding these differences. Even though the research has been inconsistent in terms of psychological disease stage comparisons, one consistent finding is that PLWAs, in general, experience more depression, anxiety, and distress than the general population.

Indeed, all of the above findings indicate this greater psychopathology (Siegel et al., 1996; Cassidy et al., 1993; Perdices et al., 1992; Chuang et al., 1989; Selwyn, 1986). For instance, Siegel et al. (1996) discovered that 55% of their subjects scored over 16 on the CES-D (Center for Epidemiological Studies - Depression Scale) which is the cut
off score for meeting the criteria of depression. The mean score for the subjects was 19.18 compared to 8.7 in the general population. In the same study, the Mental Health Index did indicate that respondents in all three groups reported relatively lower levels of overall mental health and psychological well-being as well as high levels of psychological distress in comparison to the general population. Perdices et. al. (1992) wrote that "symptoms of depression and anxiety are...the most prominent findings of psychological dysfunction in persons with HIV-infection" (p. 560-1). In No Longer Immune, Cramer reported that people living with HIV-infection are "among the highest at risk to attempt taking their own lives (Kain, 1989, p. 71-2.). In another study, Jacobson et. al. (1987) reported that asymptomatic, HIV-positive individuals score two to three standard deviations above the mean on instruments that measure psychological distress. Since disease stage may, at most, only partially mediate a PLWA's stress response, then additional factors need to be considered as possible cognitive mediating factors such as an individual's phenomenological world. Indeed, Flannery et. al. (1994) concluded their article which studied a phenomenological construct (coherence) with the following two sentences:

Contributions of personality to stress and adaptational outcomes traditionally have ignored phenomenological constructs, such as sense of coherence, and how such concepts may facilitate or hinder recovery from trauma and stress in normal groups. The next generation of Sense of Coherence studies should explore salience of this construct among troubled persons, in whom fragmentation in Sense of Coherence may play an even greater role in coping with residuals of traumatic stress (p. 577).

In summary, there is a lack of studies which have investigated what role coherence and PHC play in how a PLWA perceives and
appraises HIV-related stressors. Such an investigation has not only theoretical implications, but also may have strong practical implications as to the way counselors currently conceptualize HIV and its psychosocial ramifications. The importance of thoroughly understanding the phenomenological worlds of PLWAs cannot be underscored enough, especially in light of the overwhelming empirical evidence regarding the greater levels of depression and anxiety in this population. As has been indicated, the proposed study attempts to fill several gaps in the current research base. First, this study investigates a question which has never been asked, "To what extent does PLWAs' PHC and coherence affect PLWAs' appraisal of threat regarding HIV-related stressors?" Second, since these cognitive mediators have never been studied within a systemic model (i.e. Green's Stress Process Model), a more complete analysis could be realized. Last, this study will attempt to illuminate why findings regarding psychological disease stage comparisons have been so inconsistent.

In chapter two, the review of the literature is divided into 5 sections: (1) physiological overview of the four stages of HIV-infection, (2) psychological overview of the four stages of HIV-infection, (3) research regarding HIV-related stressors will be discussed, (4) research regarding cognitive mediators and intervening variables will be reviewed, and (5) studies addressing cognitive mediators on stress response will be analyzed.

In chapter three, the research design methodology will be detailed. This study is descriptive research which will use correlational techniques to analyze the data. In this chapter, the scientific questions will be outlined, and the formulation of the research and statistical hypotheses
will be provided in the form of potential answers. Also, how the sample was selected, and its demographic breakdown will be detailed. Last, the assessment methods will be outlined in terms of describing the Orientation to Life Questionnaire (Sense of Coherence Scale - SOC-13) and the PHC as well the HIV-Stressor Scale and the Center for Epidemiological Studies - Depression scale (CES-D). Information regarding instrument validity and reliability will be addressed here. Finally, ethical concerns will be addressed, and how these concerns are handled will be explained.
Chapter Two: Review of the Literature

The review of the literature is divided into five sections. In the first part, the physiological overview of the four stages of HIV-infection will be reviewed so that a thorough understanding of the disease process and related terminology can be understood. This information is integral to any psychological understanding of the disease stages which is presented in section two. In this section, a brief overview is given regarding the psychosocial issues which confront PLWAs. In the third section, research regarding HIV-related stressors will be discussed which is the first part of Green's theoretical model which leads naturally into the fourth section which addresses the second aspect of Green's model: cognitive mediating variables. In this section, the cognitive mediators of coherence and PHC will be defined and the appropriate research reviewed which culminates in the last and fifth section which will present research regarding the stress response and the demonstrated impact of cognitive mediators on the stress response.

Physiological Disease Process Overview: The Four Stages of HIV-Infection

The disease process of HIV basically has four stages: initial infection, asymptomatic phase, symptomatic phase, and AIDS. During initial infection, the individual who has been exposed to HIV will not test positive for HIV because an insufficient amount of detectable antibodies have not been produced. Six months after HIV-exposure, an individual will test positive for HIV 95 percent of the time, and 99 percent of the time one year after initial infection. During this phase, roughly 50% of exposed individuals will experience an acute episode of flu-like symptoms lasting 2-3 days. Also, a person recently exposed to HIV will
have a t-lymphocyte (CD4) count ranging from 800-1100 which would indicate an intact immune system, and which indicates normal immune system functioning. People who are HIV-negative will also more than likely have a CD4 count in this range.

The basic gauge or tool for measuring the strength of an individual's immune system is the CD-4 count which measures the concentration of t-lymphocytes in the blood. The T-lymphocytes are the "watch dogs" of the immune system which basically identify intruders (i.e. viruses, bacterium, fungi, and/or parasites), and direct the white blood cells to destroy the intruders. This process functions well except when the "watch dogs" themselves are targeted by the intruder which is exactly what HIV targets. Essentially, HIV attaches itself to these T-lymphocytes, uses them to replicate more HIV, and unfortunately in the process, destroys the t-lymphocyte. As a result, the "watch dogs" are diminished in number, and less capable of detecting any intruders. Therefore, the CD-4 count measures disease progression in HIV.

Stage II is called the asymptomatic phase; the HIV-asymptomatic individual will have no symptoms during this time except perhaps persistent swollen lymphnodes. On average, this stage can last eight to eleven years with the CD-4 count usually ranging from 500 to 800. During this stage, even though the individual is experiencing no symptoms, HIV is very active reproducing itself thereby increasing the viral load. The viral load, is another blood test, albeit newer, which measures the concentration of HIV in the blood. During this phase, the concentration of HIV is exponentially increasing possibly setting a quicker progression to AIDS. One expert explained viral load this way: viral load determines how fast a person is traveling to AIDS, while the
CD4 count is the distance to AIDS. Antiretroviral therapy (i.e. AZT) aims to reduce the speed traveled (viral load) and increase the distance (CD4 count) and therefore is starting to be used at Stage II.

Stage III is the symptomatic phase with CD-4 counts usually ranging from 200 to 500. In this phase, the individual may experience a variety of symptoms to include:

- "persistent fatigue or lowered energy, an inability to be as active as before, lasting several months."

- weight loss (15 pounds or more, or 10% of the body weight) over a period of three months, in the absence of dieting or change in eating habits.

- swollen lymph glands in the groin, the neck, and the armpits that last for several months and are without apparent cause.

- persistent fever, without apparent cause

- chronic diarrhea

- night sweats (waking up at night to find that the bedclothes are soaked with perspiration)

- flu like symptoms that last for a month or longer

- a dry, persistent cough that lasts for a month or longer and/or shortness of breath <after climbing one flight of stairs>

- a persistent thick, whitish coating on the tongue and/or inside the mouth (thrush)

- clusters of extremely painful small blisters surrounded by reddened itchy skin, typically found on the trunk or the back (shingles), or on the lips or mouth or genitals (herpes simplex)

- easy bruising and unexplained bleeding" (Peltz and Brizer, 1994, p. 454-5).

The only symptom which needed to be added to this comprehensive list is chronic vaginal yeast infections. Amazingly, an individual could experience all of these symptoms and not meet the criteria for Stage IV
AIDS because if the individual's CD4 count is still over 200 and he or she has not been diagnosed with an "AIDS defining illness," then he or she is still classified as Stage III symptomatic HIV-infection.

As has already been indicated, Stage IV is AIDS. At this stage, the individual is highly vulnerable to developing a variety of AIDS-defining opportunistic infections. These illnesses are considered "opportunistic" in that they take advantage of the immune system's weakened state and are considered "AIDS-defining" in that these illnesses were or are often terminal. These 40-plus opportunistic infections have as their etiology various viruses, bacterium, fungi, and parasites that an individual with a strong immune system could easily control or eliminate. For example, Pneumocystis Carinii Pneumonia (PCP) is caused by a parasite that normal antibiotics could not destroy, and Mycobacterium intracellulare bacterium complex (MAC) is caused by a bacterium commonly found in bird feces or in dirt that experts estimate 50% of the population carries; however, since most of the American population have strong immune systems, they remain unaffected. Yet another opportunistic organism is Cytomegalovirus (CMV) which is a virus in the herpes family that can cause blindness in PLWAs. Fortunately, due to medical advances, fewer people die from these common opportunistic infections because medical prophylaxises have been developed. For example, several drugs have been developed or discovered which effectively treat active PCP and which can also actively prevent an onset. Indeed, PCP used to be the number one killer of PLWAs in the early days of the AIDS epidemic, but now, if caught early enough, is almost always dealt with effectively.

**Psychosocial Disease Process Overview: The Four Stages of HIV-Infection**

Before addressing these stages, a helpful beginning would be to
review a qualitative study conducted by Schwartzberg (1993) in which he identifies 10 different meanings that HIV-positive individuals can attach to their diagnoses. In this qualitative study, Schwartzberg interviewed 19 HIV-positive, asymptomatic, gay men to discern "how, if at all, they ascribed meaning to...their HIV infection" (p. 483). After Schwartzberg conducted and tape recorded 180 minute interviews with each participant, he culled out 10 distinctly different "molecular meaning units." These ten units are outlined below and will be followed by a percentage number which refers to the percentage of subjects who ascribe that particular meaning to their diagnosis:

1. **Punishment (13 of 19; 68%)**: "HIV is a punishment because of who I am or because of my past." This meaning is often rooted in the context that before AIDS, "gay men were too sexual, too hedonistic, and too indulgent" (p. 485). For example, one of the subjects stated: "We were playing with fire, and we got burned. That's not the same thing as the finger of God coming down and saying, 'You sluts,' but I was operating with the attitude 'anything goes, there's nothing I won't do' - any number of glory holes, wild scenes..." (p. 485). The affective dimension which pervades this meaning unit is guilt and/or shame over who they are or because of what they have done and perhaps self-hatred and internalized homophobia.

2. **Isolation (7 of 19; 37%)**: "Since I am HIV-positive, I must stay away from others because I might infect them." A variation of this theme is, "My family shuns me because I am HIV-positive; they do not like me to eat with their silverware, and if I do, my mom bleaches it with Chlorox ." An example of more subtle ways that HIV isolates people is indicative of this HIV-positive individual's experience: "A good friend telephoned me
recently with the results of his test. He's negative. Don't misunderstand - I was overjoyed for him. But I also felt something had come between us, a wall, and things will never be quite the same between us. I wanted to say to him, 'I know how you feel,' but I couldn't, because I don't" (p. 486). The affective dimension of this meaning unit may include loneliness, sadness, depression, and anger.

3- Contamination (11 of 19; 58%): "I feel somehow dirty and stigmatized because I am HIV-positive." Many HIV-positive people report feeling "tainted and pariah-like." This sense of contamination can also be projected onto others. For example, one HIV-positive subject spoke about a brief romance with a PLWA; this subject stated that he needed to stop dating him because he felt that this person was "dirty or contaminated." The affective dimension of this meaning making could include feelings of shame and dirtiness.

4- Confirmation that I am Powerless (6 of 19; 32%): "Since I am HIV-positive, I do not even have control over my health or my future." For example, one subject had an identity which consisted largely of the groups he attended (i.e. AA, NA, and SLAA - Sex and Love Addicts Anonymous). Thus, Schwartzberg posed this question, "How does HIV fit into his life?" The subject responded that "I feel like it is just another meeting for me, one more disease to deal with...HIV wasn't something I planned, it just happened" (p. 486). Schwartzberg states he dealt with his HIV in the same manner he dealt with his addictions - with resignation. The affective dimension that may accompany this meaning making could be feelings of helplessness, hopelessness, and resignation.

5- Irreparable loss (14 of 19; 74%): "My HIV-status reminds me of friends I have lost to this epidemic." Another variation on this theme is,
"I have lost my future because I am going to die young." Yet another variation on this theme is the individual who feels HIV has caused him or her to become less attractive as a result of severe weight loss or Kaposi Sarcoma lesions. Other losses include the "loss of gay cultural mores, styles of sexual expression...and the premature relinquishing of personal hopes and fantasies" (p. 485). The affective dimension that may accompany this meaning could include feelings of sadness, grief, depression, and anger.

6- Personal growth (14 of 19: 74%): "HIV has helped me to realize what is important in life: I have reprioritized goals and values." This includes being more appreciative of significant others, becoming more altruistic and less egocentric with friends and family, and becoming more self-actualized. One subject's statement exemplified personal growth: "This is it, you know, moment to moment, and trying to enjoy it, every moment...I have a stronger sense that this is the only time we have, not next week, but now. Get everything you can out of living: do what you want to do, enjoy it. This feels like a positive thing-trying to treasure what's happening right now." The affective dimension that may accompany this meaning is pride in oneself and one's accomplishments, and a renewed appreciation of life.

7- Spiritual growth (8 of 19: 42%): "HIV has allowed me to connect or reconnect to my spirituality, God, or religion." For example one subject stated the following: "It's hard for me at times: I don't understand why HIV is now in my life. God and I have had a lot of knock down, drag out fights about this one, because I can't see it. But there's a growing part of me that trusts God has a reason, there's something here for me" (p. 486). The affective dimension that may accompany this meaning is joy,
understanding, and/or comfort.

8- Relief (4 of 19; 21%): "HIV has allowed me the opportunity to do things I never had time for before." A variation for the gay individual is, "My HIV allowed me to come out of the closet." As one subject related, "It's like a great big sigh of relief. I'm never, ever going back in the closet. To no longer be isolated, to no longer have to live a lie, makes all the difference in the world!" (p. 486). The affective dimension that may accompany this meaning unit could be one of joy, freedom, and reckless abandonment.

9- Belonging (14 of 19; 74%): "For the first time in my life, I feel a part of something." This could include their family, their community, or humanity. For example, "It's brought Larry and me closer together. It's forced us to dispense with some of the bullshit that we would get into and try and really work out what's important in our relationship...We'd been quite cruel to each other in the past, and not respected and treasured each other for what we are...Now, I'm very conscious of how wonderful some of the things are that we have" (p. 485). The affective dimension that may accompany this may include feelings of inclusion, belonging, and community.

10- Strategy (9 of 19; 58%): "HIV has allowed me to feel loved and validated as a human being." For example, some HIV-positive individuals have involved themselves in volunteer work which has allowed them to feel validated as a human being. In this ascription, an HIV-diagnosis can become a potential tool that can be handled for personal gain. For example, "After telling people a couple of times, I realized that it's a very dramatic moment, and I was finding myself enjoying the drama! I love watching the people's reactions" (p. 486).
Hopefully, this understanding of PLWAs' phenomenological experiences will enhance the reader's understanding of the psychosocial stages to be presented next. In stage one, or the seronegative stage, individuals are testing negative even though they have been infected with HIV. In this phase, individuals are probably concerned that they may test positive because they have engaged in a behavior which has put them at possible risk. Obviously, since these individuals cannot be aware of their seropositive status, further discussion of this stage would be of little relevance.

In stage II, assuming individuals are aware of their HIV-positive status, they have an easier time denying the fact that they are HIV-positive because they are not experiencing anything physiologically which would validate this as truth. Unfortunately, individuals are still infectious, and may continue to engage in behaviors which put others at risk for HIV. During this stage, individuals usually begin to fluctuate between denial and the incorporation of HIV into self. Incrementally, individuals integrate HIV into self as they attempt to make meaning out of this situation, and as they are engaging in activities that remind them that they are HIV-positive. For example, individuals who have decided to follow the traditional course of medical treatment would start taking antiretrovirals (i.e. AZT) at this stage, and every time they swallowed those pills (up to three times a day), they will be reminded that they are HIV-positive. Such a frequent, HIV-reminding activity is going to force HIV-positive individuals to reflect more on their HIV-status, and as a result, these individuals are going to have a harder time denying that they are HIV-positive.

At first, people often focus on negativities surrounding HIV. They
may feel alone and isolated because they fear informing anybody of the positive test result which could lead to possible rejection and abandonment. Indeed, unlike other diseases in which family and friends rally around in support, the HIV-positive person is instead often ostracized, rejected, and abandoned by family and loved ones. This rejection occurs for several reasons: (1) uninformed loved ones may fear infection, (2) a lover or spouse may justifiably be concerned about infection, (3) disclosure of HIV-status often precipitates additional disclosures such as homosexuality, infidelities, and injecting drug use history, and (4) the stigmatization surrounding HIV since traditionally only marginalized groups were impacted (i.e. the gay, injecting drug user, and Haitian populations).

In addition to this impending isolation, individuals may focus on the loss of a promising future believing they will die prematurely. Indeed, the first thought that people have upon being diagnosed with HIV is that this is a death sentence, and that they will be dead in under a year or two. Although this death sentence was often a reality in the early days of the epidemic, this belief is no longer true since we now have effective antiretrovirals, prophylactic drugs for PCP and MAC, and blood tests such as the CD4 count and viral load testing. Despite all these advances, however, many uninformed people still initially believe they will die in the near future. In addition to this death sentence perception, individuals may feel contaminated or dirty since they may have blindly introjected society's message that only marginalized and stigmatized groups are infected with HIV since that is what they have been told their entire existence. In addition to feelings of contamination, individuals may feel they are being punished because they are a part of a stigmatized
Furthermore, women who test positive and are pregnant will have to wrestle with difficult issues concerning whether or not to have an abortion. Women's desire to be mothers and leave their legacy to the world is in direct conflict with their fear that their child may be born HIV-positive, and that even if the baby is born HIV-negative, these mothers will want to be able to provide a future for that baby which they cannot promise. These mothers, unfortunately cannot guarantee that they will be physically healthy enough to care for the child, nor that they will live long enough to raise the child. As a result, this is a unique stressor that women often confront as a result of being diagnosed HIV-positive. As a result of issues like this, and all the aforementioned psychosocial issues which surround AIDS, it is not surprising that the literature has repeatedly demonstrated that HIV-positive individuals are one of the most highly-stressed populations.

Empirically, several studies have reported that asymptomatic HIV-positive individuals are the most highly stressed group of people along the AIDS spectrum (Tross, 1985; Temoshok et. al., 1986). Cramer, in his interpretation of these findings, provides the following observation: "This seems to be a result of feeling like one may be a walking time bomb - knowing one is not completely healthy and yet not having any serious signs of illness" (Kain, 1989, p. 63). Cramer explains that individuals with asymptomatic HIV-infection deal with similar stressors that people diagnosed with stage IV AIDS, yet they must also deal with the uncertainty of if, when, and how their HIV-infection will progress to AIDS and ultimately death. In another study, Jacobson et. al. (1987) reported that individuals with asymptomatic HIV-infection scored 2-3 standard
deviations above the means on measures of psychological distress.

In stage III, individuals begin to be physically affected by HIV. At this point, individuals may feel a sense of powerlessness over their HIV, and a sense of fear regarding an uncertain future. Perhaps they have engaged in behaviors that they thought would prevent disease progression (i.e., exercising, eating right, following medical protocol, using alternative medicines, not abusing drugs), and yet the CD4 count continued to drop and the HIV-related symptoms appeared or continued to persist. This disheartening decline usually weakens individuals' denial for they will have a difficult time denying they are HIV-positive when all of this evidence has manifested to the contrary. At this point, individuals are often struggling for control of their body, or they may resign themselves to the fact that they cannot do anything to prevent further deterioration. Also, phenomenologically, individuals may start to view symptoms as validating signs of punishment and/or signposts signaling future loss(es). Indeed, Lyketsos (1996) findings would seem to confirm these clinical observations: "beginning 12-18 months before AIDS diagnosis, there was a significant rise in all measures of depression" in a sample of 911 HIV-positive, gay men (p. 1430). In order to combat this negativity, the counselor must help the client see these symptoms and possible deterioration as not only a challenge to be overcome, but as a learning experience as well. Perhaps how individuals interpret and respond to these symptoms determine if they will intensify efforts to regain control and thus exert some influence on the disease course.

In stage IV (AIDS), individuals are having to accept a new label that they would probably just as soon not face. In many ways, AIDS is a much scarier word, for it essentially means one is that much closer to
death. Medically, AIDS means that one could at anytime develop an opportunistic infection that could lead to death, and thus individuals will more likely experience a higher sense of vulnerability than before. As individuals recognize that death is a distinct possibility, they will probably not only experience fear, but also a sense of urgency. This sense of urgency results from the recognition that life is finite, and that human beings have a limited amount of time to complete certain tasks or resolve unfinished business. Individuals at this point, or sometimes much earlier in the disease process, may begin to recognize what is truly important or meaningful in life. Perhaps they recognize that material possessions are inconsequential in the scheme of things and that spending time with loved ones is more important. They may begin to reprioritize values or allocate time spent differently. They may have gained a spiritual sense of self, or felt more a part of humanity or a community. They may have begun to view their HIV-status as not contaminating or isolating, but rather as liberating and belonging. This coming to terms with one's HIV-diagnosis or AIDS-diagnosis is termed acceptance, and encompasses an expanded awareness, an absent view of illness as a punishment, and a "heightened sense of equanimity, spirituality, and belonging" (Peltz and Brizer, 1994, p. 463).

Unfortunately, not all PLWAs reach this level of acceptance, and as has already been mentioned, some reach it before developing AIDS. As can be discerned from the psychological stage overview, stage theories do not seem to do justice to the human condition and are confined by their universal, sequential steps; however, this overview does offer a loose framework for understanding AIDS. Also, these stages are recyclable. PLWAs do not just enter denial once; they often fluctuates between
acceptance and denial, but generally speaking, with each fluctuation, the denial grows weaker, and the acceptance grows stronger. Since a broad overview regarding the psychology of each stage of HIV has been presented, more detailed findings regarding each stage will be presented next.

Siegel et. al. (1996) write that "although the physiological sequelae of disease progression and the natural history of HIV infection have been extensively studied by biomedical and clinical researchers, relatively little attention has been devoted to an examination of the psychosocial aspects of HIV-disease progression" (p. 229). They further state that "few studies have examined variations in the psychosocial aspects of HIV-disease progression" (p. 229), and as they indicate in their review of the literature, the findings in this area appear contradictory. Their study does attempt stage comparisons by examining the psychosocial adjustment and mental health of 144 gay men who were living in New York City. Surprisingly, these researchers found no differences between disease stages in terms of mental health; however, the data did indicate higher levels of psychological symptomatology and lower levels of psychosocial adjustment when all three groups combined (asymptomatic, symptomatic, and AIDS) were compared to the general population. This study does appear to have several strengths as detailed by the researchers: large sample size, use of several recruiting strategies to ensure broad representation of various groups, and their "multidimensional operationalization of psychosocial functioning to include mental health and psychosocial adjustment to illness" (p. 231). The instruments used seem to be well-suited to their assigned purposes, but no reliability or validity coefficients were reported: depressive
symptomatology is measured by the Center for Epidemiological Studies - Depression Scale (CES-D) which has been found to have high internal consistency and test-retest reliability and was reported to have been validated against other self-report measures of depression; the Mental Health Index (MHI) which measures psychological distress and well-being in adults yields eight different scores (global, distress, anxiety, depression, loss of control, well-being, positive affect, and emotional ties); the Psychosocial Adjustment to Illness Scale (PAIS-SR) which measures social functioning and quality of adjustment to chronic disorders. The domains measured by the PAIS-SR include health care orientation, vocational environment, domestic environment, sexual relationships, extended family relations, social environment, and psychological distress.

In a similar study, Perdices et. al. (1992) partially confirm Siegel's findings. These researchers also did not find that severity of anxiety and depression were related to diagnostic group (disease stage), number of opportunistic infections, or degree of immunodeficiency as measured by CD4 counts; however, anxiety and depression were found to be related to magnitude of HIV-related symptomatology. In comparison to Siegel's study, Perdices used a larger sample of gay men (N=243) and used the same measure for depression (CES-D), but a different measurement for anxiety (Spielberger State/Trait Anxiety Questionnaire). The definite strength of this study is how these researchers itemized and measured HIV-related symptomatology. Twenty-one symptoms were identified and rated by the participants in terms of not just severity, but also frequency and duration. This specificity allowed for a more detailed analysis than simply completing disease stage comparisons. While the aforementioned
two studies do not seem to demonstrate any psychological differences (i.e. depression and anxiety levels) in terms of disease stage, the next group of studies will contradict these findings.

In the first of these investigations, which compared 21 symptomatic, gay men to 27 asymptomatic men, the asymptomatic subjects were found to exhibit higher levels of death anxiety and less optimism as well as more severe psychological distress (Kurdek and Siesky, 1990). Despite this study's smaller sample size, the strength of this study lies in the fact that it used an HIV-negative control group which is something neither Thompson et. al. (1996) nor Perdices (1992) used. Also, this study employed several instruments not used in the earlier mentioned studies. Kurdek et. al. (1990) used Templer's (1970) Death Anxiety scale which is an 11-item, true/false questionnaire with test items like, "I am very much afraid to die." This instrument also was reported to have a Cronbach alpha of .70. Another instrument used in this study was the Life Orientation Test which measures dispositional optimism that was reported to have a Cronbach alpha of .88.

Kurdek's findings regarding more death anxiety and psychological distress, and less optimism in asymptomatic subjects compared to the symptomatic subjects seems counterintuitive and certainly unexpected. The researchers explain this finding with this statement, "A likely explanation for this finding is that asymptomatic subjects experience distress because they have no assurance that their HIV infection will not advance to full-blown AIDS and, consequently, probable imminent death" (p. 857). Unfortunately, for this research design, the authors clustered all symptomatic individuals together to include 12 individuals living with AIDS. Now, if 12 of the 21 symptomatic individuals have already
progressed to AIDS, of course they are no longer going to fear that their HIV-infection will progress to AIDS. Also, another weakness regarding this sample, which was admitted by the researchers, is that the majority of the symptomatic group was solicited from support groups, which was not the case for the asymptomatic group. From professional experience, individuals who are able and willing to attend a support group have usually dealt with living with HIV much better and seem to cope with HIV-infection much better than those individuals who feel incapable or are unwilling to attend. Thus, this characteristic of each group allows for only cautious interpretation of this study's findings.

Another study which seems to support that stage of HIV disease is related to depression has already been briefly mentioned (Lyketsos et. al., 1996). This study, as compared to the previous three, employs the strongest design. The first strength is its large sample size (N=911); however, one limitation is that all subjects were gay males, so generalizability is quite limited. The second strength is the longitudinal design (10 years) with all participants initially being asymptomatic (stage III). Subjects were then seen every six months at which time each subject was administered the CES-D to track for levels of depression. The third strength of this study is that results were analyzed using a nonsomatic CES-D scale so that results were not confounded by the physical manifestations of HIV-disease. With the above strengths in mind, the researchers reported the following finding, "From 60 to 19 months before AIDS, the mean CES-D Scale score at each visit remained stable, without a significant increase from visit to visit. This mean score remained between 9 and 10..." (p. 1432). Then, in the 13 to 18 month pre-AIDS visit, the 7-12 month pre-AIDS visit (p=0.004, N=588), and the

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0-6 month pre-AIDS visit (p=0.001, N=536), a dramatic, statistically significant rise in CES-D scores occurred.

A third study which indicated psychological disease stage differences was a study conducted by Chuang et. al. (1989). The researchers conducted one-hour long, structured interviews with 65 homosexual or bisexual men with 24 of the men being classified asymptomatic, 22 being diagnosed with ARC (AIDS Related Complex - old terminology for symptomatic HIV-infection that is no longer used), and 19 being diagnosed with AIDS. The instruments used included the robust CES-D to measure depression, the Trait Anxiety subscale of the State-Trait Anxiety Inventory, and the Profile of Mood States. Unfortunately, no data was reported regarding the integrity of these instruments. Despite the homogeneity of the sample and the lack of data supporting the selection of measurements, this study did have two apparent strengths: (1) the one-on-one, structured interview format, and (2) none of the subjects refused participation. With these factors taken into consideration, Chuang found that "Patients with asymptomatic HIV-infection and ARC evidenced significantly greater levels of depressive symptoms, mood disturbance, and trait anxiety than did patients with AIDS" (p. 878). In addition to psychological disease stage differences being demonstrated, Chuang also reported that, "Overall, substantially elevated levels of psychosocial distress characterized patients in all three groups" (p. 878). This is a finding, which unfortunately, seems to be universal and consistent from one study to the next. Indeed, Selwyn (1986) reported that 56% of people diagnosed with AIDS, 78% of people diagnosed with ARC, and 39% of people diagnosed as having asymptomatic HIV-infection met the DSM-III criteria for adjustment
disorder with anxiety, depression, or both.

Finally, Patterson et. al. (1996) also found psychosocial disease stage differences; however, these findings contradicted Chuang's findings. In Patterson et. al.'s study, their sample consisted of 414 men which is a much larger sample and which also had heterosexual men represented unlike Chuang's sample. In addition, Patterson used a different measurement for depression (the Hamilton Rating Scale for Depression which has demonstrated inter-rater reliabilities ranging from .80 to .91 and has "well-documented validity"). With these apparent differences in mind, Patterson et. al. stated that "asymptomatic subjects were significantly less depressed than others," which is obviously in direct contrast with Chuang's findings which found elevated levels of depression in asymptomatic and ARC participants. Other than affectional orientation, the two samples seemed similar in terms of income status, educational level, and marital status; however, Chuang et. al. (1989) provided no information regarding the racial breakdown of their sample.

As can be discerned from these six studies which make psychological, disease stage comparisons, no definitive statements can be made. Unfortunately, the findings are contradictory. In addition, none of the above six studies incorporated any phenomenological components (i.e. coherence or PHC), which as mentioned earlier, may help explain the inconsistent findings. One study by Thompson, Nanni, and Levine (1994) may help explain these inconsistencies. These researchers studied the concept of "perceived control" in 104 HIV-positive men. More specifically, these researchers studied two dimensions of perceived control: (1) primary versus secondary and (2) central versus consequence-related. For the purposes of discussion, the former is more relevant to this proposed
line of research. This distinction between these two forms of control (primary versus secondary) was first conceptualized by Rothbaum, Weisz, and Snyder (1982). Primary control refers to "having control by believing you can influence existing realities," while secondary control refers to "gaining control by accepting realities" and "deriving meaning from an event" (Thompson et. al., 1994, p. 540). Thompson et. al. (1996) states that Rothbaum's research has neglected secondary control by focusing almost exclusively on primary control. As a result, Thompson et. al. conducted this study to further investigate what role secondary control plays in positive adjustment for the PLWA. Thompson (1994) speculates that secondary control may be an especially important process when individuals feel that there is little they can do to directly ameliorate their situation (p. 540). Thus, secondary control would play a more prominent role in a PLWAs' adjustment when they can no longer rely on primary control.

With this rationale, these researchers developed these two hypotheses: (1) "The use of both primary and secondary control will be associated with better psychosocial outcomes (less depression)" and (2) Secondary control will be associated with less depression for those who have low beliefs in their primary control, but not for those who are confident in their abilities to effect desired outcomes" (p. 541). In order to test these two hypotheses, these researchers developed their own likert-style questionnaires which measured primary control (good internal consistency - Cronbach alpha = .93), and secondary control (Cronbach alpha = .95); however, no information was given regarding the validity of these scales. With these instruments, Thompson et. al. (1994) confirmed hypotheses one: "stronger beliefs in both primary and secondary control
were associated with less depression" (p. 543). Support was also found for the second hypothesis. In order to test this hypothesis, these researchers split the 104 men into a high primary control group (n=50) and a low primary control group (n=54). In the high primary control group, beliefs in secondary control had a weak relationship with depression levels; however, in the low primary control group, beliefs in secondary control played a much more prominent role. In this group, high beliefs in secondary control was associated with lower depression. This finding would seem to suggest that "secondary control plays a back-up role" (p. 545), and thus these results would seem to support this second hypothesis.

These findings may have direct implications as to the relationship between coherence (secondary control) and depression and PHC (primary control) and depression as well as to the relationship between PHC and coherence. In addition, since Thompson et. al. (1994) do not address how these two types of control impact threat appraisal of stressors, this proposed line of research will be a significant extension of their research.

**HIV-Related Stressors**

HIV-related stressors are those stress-producing events that PLWAs commonly confront as a direct result of living with HIV and its complications and ramifications. The HIV-stressor scale, which was developed by Thompson et. al. (1996) offers a comprehensive listing of these events which is broken down into five categories. The number which follows each aversive event is the percentage of subjects (N=105) who experienced that particular event in the past month. These following events comprise the category of relationship stressors:

- problems in relationship with spouse or lover (52%)
- problems with family (49%)
problems in relationships with friends (46%)
revealed HIV-status to friend, family, or lover (36%)
sexual difficulties (31%)
break-up of friendship (21%)
friend/lover diagnosed with HIV (21%)
break-up of relationship with spouse or lover (18%).

The following events comprise the second category of medical care stressors:
  bureaucratic (red tape) problems (31%)
  problems with healthcare providers (17%)
  lost health insurance (15%)
  changed physicians (11%).

The following events constitute the third category entitled "grief/illness of others:"
  illness of close friend (25%)
  death of close friend (24%)
  stresses of caregiving (18%)
  illness of family member (12%)
  death of family member (9%)
  death of spouse or lover (5%).

The fourth category entitled "financial / housing stressors" constitute these stressful life events:
  financial problems (68%)
  decrease in income (49%)
  moved to a new residence (31%)
  lost job (17%)
  lost housing (14%).

Finally, in the category of job-related stressors, these researchers identified two stressors:
  problems at work (26%)
  problems with co-workers (18%).

Unfortunately, interpretation of Thompson et. al's (1996) findings
are difficult since no control group of HIV-negative subjects was used to help the reader determine what percentage of individuals in the general population experience these aversive life events in the past month; however, since some of the stressors are by their very nature unique to HIV (i.e. disclosing HIV - 36%, and friend diagnosed with HIV - 21%), a prudent assumption would be to assume that these percentages are on average much higher than in the general population. Also, since the literature consistently demonstrates higher levels of psychological symptomatology, anxiety, and depression in the HIV-positive population (Siegel et. al., 1996; Perdices et. al., 1992; Kurdek et. al., 1990), one logical explanation is that this population experiences more acute, stress-producing events. A second, not necessarily exclusive explanation, is that HIV compromises the HIV-positive individual's ability to effectively deal with everyday life bringing about a cascade of stressful life events. Even though the authors did not specify any overlap in terms of whether it was the same group of people who experienced the majority of these stressful life events, this idea seems plausible. For example, if an individual is having severe problems at home and with personal relationships, then work will probably be somewhat affected, and if work is adversely affected, then financial, insurance, and housing difficulties could result. Thereby, the cascade of adverse events would be realized. Finally, in reference to the HIV-stressor scale and Thompson et. al.'s (1996) study, their scale surprisingly did not include such stressors as: (1) decline in CD4 count and/or increase in viral load (bad lab results) which are often taken every three months, (2) change in medication regimen or beginning antiretroviral therapy, (3) appearance of HIV-related symptomatology, (4) aversive reaction(s) to medications which is
extremely common with antiretroviral medications, and (5) substance abuse issues. These events should certainly be added to the HIV-stressor scale. Since HIV-related stressors have been defined and identified, the next sequential step in the stress process, which are the cognitive mediators or intervening variables, will be reviewed.

**Cognitive Mediators**

For the purposes of this study, two different cognitive mediators will be researched: level of coherence and PHC. Before addressing these two specific cognitive mediators, a broad overview of HIV and meaning will be given. Giovinco and McDougald (1994) assert that PLWAs who have "found purpose and meaning in life, even in the crisis of AIDS, experience longer, more productive, purposeful lives" (p. 76). In direct contrast, many individuals who once had been engaging life both professionally and personally find themselves in a compromised situation after being diagnosed with HIV. In addition, these authors posit that individuals who can find meaning in their situation, despite the adverse circumstances, "tend to develop a sense of responsibleness rather than taking on the role of victim" (Giovinco et. al., 1994, p. 80). Indeed, this connection of meaning and taking responsibility for one's situation have strong existential ties to one another. If individuals are able to reach a certain level of personal understanding regarding their being HIV-positive, they are probably much more likely to take responsibility for this circumstance and deal with this situation in a constructive manner. Furthermore, the perceived impact of HIV-related stressors on the self is more likely to be minimized if PLWAs have been able to find meaning in their situation.
The Stress Response and the Role of the Cognitive Mediator

Coherence as a cognitive mediator has been investigated in two studies which have focused on AIDS. In Linn et. al.'s (1993) study, mentioned in chapter one, the researchers posed this question: "Is the level of perceived coherence, i.e. the extent to which individuals derive meaning and purpose in their lives despite their HIV-illness, related to their levels of self-esteem and anxiety?" (p. 254). Linn et. al. demonstrated that coherence was a significant predictor of self-esteem (beta = .48, p < .01) and anxiety (beta = -.31, p < .01). For the most part, this research design seemed strong except for the instruments selected; the sample seemed to be representative of the HIV-positive population with the possible exception of gender: 89% male, 11% female; 78% White, 17% Black; mean age = 34; disease continuum seemed well-represented. No information was provided concerning socioeconomic status. The instruments selected had strong reliability coefficients, but no information was provided regarding the validity of the instruments employed except the instrument which measured self-esteem. The Rosenberg's six-item Self-Esteem scale did obtain a correlation of .60 with Coppersmith's Self-Esteem Inventory thereby demonstrating moderate criterion-related validity. The researchers did not use Antonovsky's scale to measure perceived coherence, and they instead used an instrument developed by Lewis (1990) which lacks empirical validity supporting its use in research. As a result, one cannot be assured if this instrument measures what it purports to measure. Despite the lack of demonstrated robustness of the instruments employed in this study, all instruments selected appear relevant to the research hypotheses.
In another study by Linn et. al. (1995), the researchers investigate a similar theoretical model, albeit more complex, using an African-American sample. The study is a replication of the previous study, and the research question is the same. Perceived coherence is again central to the model as the "cognitive mediator." and unfortunately the Lewis (1990) instrument is again used with no new information regarding its validity; however, the outcome variables have changed somewhat. This time, the measurement of self-esteem is replaced by a measurement of depression (CES-D) which will be demonstrated later to be extremely robust. The other outcome variable is anxiety which is measured by the same instrument from the earlier study with no information presented regarding its validity. The results of this study indicate that a greater sense of coherence reduced depression (beta = -.32; p < .01) and anxiety (beta = -.31; p < .01). Thus, this study seems to validate the previous findings, with a completely African-American sample (N = 255), that sense of coherence does reduce anxiety. Since the review of literature concerning coherence and the stress process has been completed, this next section will focus on PHC and its role in the stress process model for PLWAs.

Since AIDS has consistently demonstrated its unpredictability, PLWAs are forced to face many uncertainties. The first uncertainty is the amount of time they have to live; PLWAs must live with an uncertain future. The second uncertainty centers on the unpredictable nature of when HIV-related symptoms will appear, and the nature of their severity. Symptoms of extreme fatigue, diarrhea, and nausea can make adhering to a schedule or making plans difficult. A third uncertainty relies on what medical treatments will be available and effective for treating HIV. (Reed.
et. al., p. 793). Due to these three major areas of which PLWAs may feel powerless, personal control is probably a major source of concern for PLWAs.

Little research has been done on PHC as a mediating variable in HIV-disease, let alone any other disease. For the most part, despite Wallston's protest and strong theoretical rationale for not using the Multiple Health Locus of Control (MHLC), most researchers seem to misuse this instrument. Indeed, Kurdek (1990) used Wallston's (1976) health locus of control which was used to assess "the extent to which one agrees that health outcomes are under one's control" (p. 849), to see if disease states differed in terms of this dimension. Not surprisingly, Kurdek found no statistical significance between disease states on Locus of Control (LOC), because LOC is dispositional and more fixed, than PHC. The PHC scale would have been the better choice, since it measures if individuals feel they are capable of coping with a given situation, such as living with HIV. In addition, "whether control is internal or external?" is not as an important question as "do individuals feel they have the resources to cope with the situation?" If PLWAs place control externally with professionals such as doctors and counselors, and believe that these "powerful others" (which is an external locus of control scale on the MHLC) can help them cope with HIV, than this external health LOC can be just as adaptive as an internal health LOC. Succinctly stated, PHC has little to do with where control lay, and simply addresses if PLWAs feels they can cope with living with HIV.

Remien et. al.'s (1992) research also incorporated the construct of LOC. Interestingly enough, these researchers did find significant differences among long-term survivors (individuals who have lived with
Stage IV AIDS over three years; N=53), HIV-positive subjects (33% had moderate symptoms, but none had AIDS; N=115), and HIV-negative subjects (N=54) in terms of LOC, but not in the expected direction. Their study demonstrated that the long-term survivor group believed more in “chance,” an external locus of control dimension (p < .001), and less in “powerful others,” another external locus of control dimension (p < .001), than the combined HIV-positive and HIV-negative groups; however, again, no differences were found between groups with respect to internal health LOC. Perhaps if PHC had been assessed, significant difference would have been demonstrated. Again, according to this researcher’s interpretation of Wallston’s writings, the developer of the MHLC, this was not the best construct to use in this study for exactly the same reasons cited with regards to Kurdek’s (1990) study since the findings of this study were also counterintuitive. If PLWAs attain long-term survivorship status, an observer would expect that such individuals would have either a strong internal health LOC, a belief that their actions are why they are still alive (i.e. paying attention to nutrition, following medical protocol, reducing stress, not abusing drugs), and/or a strong external LOC in powerful others, a belief that actions of doctors, nurses, and counselors are why they are still alive; however, Remien’s study suggests long-term survivors view their survival as a result of chance or luck. However, if one looks at this study from an historical perspective, one can see how this study’s internal validity was confounded by history. In 1991, the results of the Concorde Study, the study which discredited any beneficial effects of AZT, came to light. Many PLWAs were disillusioned with doctors and medical science. Even to this day, people are hesitant about taking any antiretroviral
medication because of repercussions of that study. Thus, from this historical perspective, these findings make sense. PLWAs in 1991 were less likely to believe in the efficacy of science and doctors, or to believe that if they religiously took their medications, they would live longer.

One study which did directly address perceived coping self-efficacy (CSE) was Antoni et. al.'s (1997) study which explored CSE as a buffer to psychological and physiological disturbances in PLWAs following hurricane Andrew. For this study, CSE is defined as “people’s beliefs in their capabilities to manage stressful or threatening events” (p. 249). These researcher’s findings suggested that “greater levels of CSE were related to lower emotional distress and post-traumatic stress disorder (PTSD) symptoms” (p. 248) in both the HIV-positive group and the HIV-negative group. Unfortunately, these results must be interpreted very cautiously because no validity or reliability data was given in regards to the instrument assessing CSE. Despite this omission, these researchers did cite other studies which have found that “higher CSE values are associated with better psychological adjustment to highly stressful events such as abortion and physical assault” (p. 249).

Other studies have also substantiated the construct of perceived competence to cope with chronic illness as an important factor in the emotional adjustment to illness. For example, O’Leary (1988) demonstrated that patients living with arthritis who received cognitive behavioral treatments designed to enhance self-efficacy reported less depression. In another study, Wiedenfeld et. al. (1990), experimentally demonstrated that perceived self-efficacy in exerting control over phobic stressors was immunoenhancing. Such findings have also been demonstrated with animals. For example, Shavit and Martin (1987)
demonstrated that if animals were exposed to a stressor, but were concomitantly given the ability to control the given stressor, then these animals experienced no adverse effects; however, animals who were exposed to the same stressors without the ability to control them demonstrated activated neuroendocrine and opioid systems and various impaired components of the immune system. Clearly such profound findings regarding the immune system could have a profound impact on the area of HIV-related counseling. Perhaps such findings support the efficacy of empowerment-centered counseling where the goal is to facilitate clients taking control of their health situation.

In addition to the aforementioned studies, Litt (1988) reviews several studies that are supportive of self-efficacy as a mediating construct in aversive situations; however, these studies were limited to tolerating physical pain (i.e. cold-pressor and electric shock) and not emotional pain or distress. Despite this specificity, Litt feels that self-efficacy is a construct that "may add greatly to existing conceptualizations of appraisal of threat and coping with stressful experience" (p. 252) Thus, this proposed study intends to expand the use of self-efficacy to include emotional pain in the face of illness, and not just physical pain.

In summary, this review of the literature provided both a physiological and psychological overview of the HIV-disease process. The following sections were outlined according to (Green's 1990) stress response model with the first of these sections being devoted to the literature on HIV and stressors. In this section, a brief overview was given regarding the psychosocial issues which confront PLWAs. In the next section, research regarding the cognitive mediators of coherence and
PHC were reviewed as these variables relate to HIV. The final section reviewed the research regarding the relationship between the stress response and the cognitive mediators.
Chapter Three: Methodology

This chapter will begin with a clear, concise statement as to the purpose of this study. In the second section, some operational definitions will be provided so that the scientific questions and research hypotheses in section three can be better understood. In the fourth section, sample selection and the procedure for data collection will be addressed, while in the fifth section, a rationale will be provided for the selection of this particular research design. In the sixth part of this chapter, construction and piloting of the self-developed questionnaire will be described, while in the seventh section, the instruments selected will be described, and the rationale for their selection provided. In part eight, the strengths and weaknesses of this study will be identified which will include a discussion of possible confounding variables. In the ninth section, how the results will be statistically analyzed will be detailed, while section ten will discuss ethical safeguards so that the well-being of potential respondents is protected.

Purpose

The purpose of this study is to better understand what role PLWAs' PHC and level of coherence play as cognitive mediators of stress responses within the theoretical framework provided by Green's (1990) "stress process" described earlier. In the literature (Coward, 1994; Giovinco et. al., 1994; Schwartzberg, 1993), the idea has been expressed that if PLWAs can somehow integrate their HIV-seropositivity into a meaningful framework, they will be able to weather stressors better. In addition, PHC has also been forwarded as a construct which has been related to levels of depression, but which has never been investigated with regards to HIV-disease. This study intends to research the stress
process in PLWAs by addressing how coherence and PHC affect PLWAs' perceptions of how much stress HIV-related stressors are causing them. An additional purpose for this investigation is to determine, using a quasi-longitudinal design, if disease stage is related to PHC and coherence. As was detailed in chapter two, an idea was forwarded that the more negative "molecular meaning units" would predominate (i.e. punishment, isolation, contamination) after a person was diagnosed with HIV, and that as the individual lives with HIV, and as time flows, most individuals would somehow develop a meaningful framework (coherence) that incorporates HIV. With this incorporation, more positive molecular meaning units should be realized (i.e. personal and spiritual growth, belonging). This study is designed to determine if a developmental pattern exist with regards to the ability to derive meaning from one's HIV-diagnosis, and in terms of perceived health competence.

Scientific Question and Research Hypotheses

One of the research questions in this study is to determine whether individuals' level of coherence and PHC are significant cognitive moderators of the stress response process in PLWAs. This question could be answered at two distinctly different points in the stress process which is one of the strengths of this study to be detailed later. The two points are: (1) the participant's appraisal of the HIV-related stressors in terms of the perceived amount of stress produced for that particular subject, and (2) the level of severity regarding the stress response as measured by the CES-D, which measures depression (the emotional outcome). The second research question is to determine whether individuals' level of coherence and PHC is impacted by stage of HIV-infection and/or by time elapsed since diagnosis of HIV. With these two research questions in
mind, the following hypotheses will be explicated:

**H1**: Participants with higher perceived health competence, higher sense of coherence, lower perceived stress, and lower number of stressors will exhibit lower levels of depression. The reasoning behind addressing (1) perceived health competence is because PLWAs who feel empowered and capable of dealing with their health, are less likely to be depressed. (2) sense of coherence is that PLWAs who have been able to accept their HIV-diagnosis are less likely to be depressed. (3) lower perceived stress is an extension of the first two factors, and partially tests Green's stress process model by scientifically focusing on which is more related to depression: perception of HIV-related stressors or cognitive mediating variables such as perceived health competence and sense of coherence. and (4) lower number of stressors is that PLWAs who have experienced a fewer number of stressful life events are less likely to depressed as measured by the CES-D.

H1: $\theta_{xy} = 0$

**H2**: Participants with higher perceived health competence and higher sense of coherence will perceive HIV-related stressors as less stress producing. The rationale for testing this hypothesis is to determine if these two factors, perceived health competence and sense of coherence, independent of stage of diagnosis and time since diagnosis, affect level of perceived stress. The first factor, perceived health competence is being addressed because those participants who perceive they have the resources or capabilities to deal with HIV, will find HIV-related stressors as less threatening. These PLWAs will not feel that these HIV-related stressors produce much stress for them. The rationale for addressing the second factor, sense of coherence, is that PLWAs who have been able to
find meaning in their being diagnosed HIV-positive, will also be able to find meaning in other adverse life events, and if some PLWAs can understand why some stressor(s) have happened to them, then they will probably not feel it produces as much stress for them. Perhaps these stressful events have been assimilated and/or accommodated in a cognitive developmental manner.

H2: $\theta_{xy} = 0$

H3: **Participants who have been diagnosed with Stage IV AIDS and have lived with HIV for a longer period of time, will score higher on the Sense of Coherence Scale, than those individuals diagnosed with Stage IV AIDS and who have not been living with HIV as long.** The rationale behind this hypothesis focusing on the subgroup of stage IV AIDS participants is that first an assumption is made that stage IV AIDS individuals will be unable to rely on their perception of being in control as a way of buffering stress (Thompson’s primary control). These individuals are experiencing a number of symptoms and infections, and are thus less likely to feel in control of their health. As a result, these PLWAs are forced to deal with this sense of powerlessness by seeking meaning in the situation which refers to the individual’s level of coherence (Thompson’s secondary control); however, level of coherence is not something that is attained quickly. Time and experience are often required for the PLWA to derive meaning from their HIV.

H3: $\theta_{xy} = 0$

H4: **Participants diagnosed with AIDS will have a lower perceived health competence score than participants who have asymptomatic-HIV infection.** Since an individual who has been diagnosed with AIDS is more likely to have experienced a number of distressing symptoms and
infections, PLWAs are more likely to feel less in control of their health situation.

**H4: θ_{xy} = 0**

**Sample Selection**

Subjects in this study were not randomly selected from the target population. Participants were recruited from individuals accessing medical services from clinics in Virginia. Three separate sites provided the sample a broader representation of the HIV-positive population. These three sites were the Fan Free Clinic which is an inner-city AIDS service organization in Richmond, VA, the Peninsula AIDS Foundation in Newport News, VA which is another inner-city AIDS service organization, and Family Care which provides AIDS Waver Services to individuals requiring personal care in the home which is in Richmond, VA. Subjects, at all sites, who successfully completed the instruments, received compensation of five dollars.

The target sample size was 100 subjects. Since Gay (1987) stated that 30 subjects are generally considered to be the "minimally acceptable sample size" (p. 231), this study clearly met this minimal requirement (N=89). This large sample size permitted inter-group comparisons on hypothesis four as well.

**Data Collection**

All instrument administrators were trained on the questionnaire, and were administered the questionnaire themselves, so that they were able to respond to any questions respondents asked regarding the instrument. Administrators also personally explained the purpose behind the questionnaire and why it is important to respond accurately. In addition, envelopes were provided to participants for returning the
completed instruments. The questionnaire administrators informed the participants that the seal will not be broken until all of the administrations are handed to the researcher. Thus, the subjects hopefully felt safe answering the questions honestly. The payment arrangements are detailed in the ethical safeguards section.

**Research Design Selection**

A quasi-longitudinal design was selected for several reasons. First, the quasi-longitudinal design was selected to control for subject mortality. For example, if a group of subjects were followed from asymptomatic to AIDS, which would on average take eight to eleven years, many subjects would have moved away to be closer to family as they became ill, or would have stopped pursuing medical treatment for whatever reasons (i.e. decided to go hedonistic and abuse drugs). As a result, many subjects would have been lost during this time frame thus compromising the internal validity of a “true longitudinal design.”

Second, the effect of history would probably have had a profound effect on any findings regarding the next eight to eleven years. Indeed, since 1995, two new developments have revolutionized the treatment of HIV-infection: protease inhibitors and viral load testing. Protease inhibitors are a new class of antiretrovirals, that when used in combination with the traditional nucleoside analogues (i.e. AZT), have helped many individuals attain undetectable levels of HIV in their blood. In addition to the protease inhibitors, the viral load blood test has allowed physicians to more quickly determine when a particular combination of nucleoside analogues and protease inhibitors are no longer aversely affecting HIV, so that a new combination can be applied more quickly. As a result of these two new developments, optimism and hope have been
renewed for PLWAs. Indeed, as indicated in newspaper headlines, AIDS deaths have dropped substantially. Clearly, such hope and optimism would have had a profound effect on PLWAs' phenomenological worlds and hence their levels of coherence and PHC which would confound any true longitudinal design. Since additional events like these will probably occur in the near future, the internal validity of longitudinal studies could easily be confounded by such developments. Indeed, a new blood test, Genotypic Antiretroviral Resistance Testing (GART) has recently been developed, which informs physicians which antiretrovirals (i.e. AZT and the other four nucleoside analogues and the four protease inhibitors) PLWAs' HIV has become resistant. Third, such a confounding variable as history could potentially interact with maturation in any true longitudinal design. For example, when the aforementioned events occurred thereby creating a sense of hope and optimism, these events could interact with the PLWAs' psychological make-ups creating a condition for growth and belonging, as opposed to a condition that would more likely encourage powerlessness and isolation. This interaction of history and maturation, plus history alone, would confound any developmental model. As a result of these three confounding variables, a quasi-longitudinal (cross-sectional) study was employed as opposed to a true longitudinal design.

The quasi-longitudinal design allowed a snapshot picture of one point in time of people at different points in their HIV-infection. Thus, the impact of mortality, history, and maturation interacting with history were of no concern in this study. Since a large sample was employed, individuals from various points along the disease spectrum were well-represented. A two-page questionnaire was used to determine at what
stage of HIV-infection the individual currently occupies.

Construction of the Questionnaire

For the purposes of this research design, one instrument was developed: a demographic questionnaire which collected factual data (i.e. demographic data, disease specific information). Gay's (1987) suggestions were followed in the construction of this instrument. For example, whenever possible, structured, close-formed items were used which facilitated data analysis, and when appropriate, an "other category" was listed, which gave the respondent an opportunity to respond when none of the listed choices seemed appropriate. In addition, Gay proposed the following suggestions in reference to constructing a questionnaire which were followed in designing the demographic questionnaire:

• each test item should be tied to a stated objective of the study.
• each test item should express only one concept.
• each test item should be clearly, and succinctly stated.
• each test item should have a point of reference, if appropriate.
• questions should not be leading.
• questions should not assume a fact.
• questions should not be too touchy.
• directions should promote standardized, comparable responses.
• questionnaire should be validated, in a pilot study.

Piloting the Questionnaire

The demographic questionnaire was piloted on an independent subject pool of 9 HIV-positive individuals, who were well-known to the researcher, to determine if any deficiencies existed. These pilot subjects were instructed to write criticisms in the margin regarding each test item,
as well as their overall reaction to taking the instrument. In addition, pilot participants were solicited for suggestions to improve the questionnaire. After each pilot participant completed the questionnaire, each pilot participant was asked questions regarding offensiveness, relevancy, and clarity of each questionnaire item. The pilot study results can be located in percentage form next to each questionnaire item (appendix A).

In reference to the demographic questionnaire, the following was confirmed: (1) it is equipped to classify individuals according to disease stage (55% AIDS; 33% Symptomatic, and 22% Asymptomatic), (2) no test items were found to be offensive, (3) all test items were found to be clear, and (4) no test items were deemed irrelevant. Also, two recommendations were made regarding the demographic questionnaire: (1) add a transgender category, and (2) add a question regarding support group attendance.

**Instruments**

In the selection of the following instruments, care was taken to ensure that the instruments selected were measuring a construct which was theoretically appropriate to studying the problem of concern. In addition, tests were selected for their strong levels of reliability and validity, and because these instruments were commonly used in the research realm of AIDS.

**Demographic Questionnaire**

The demographic questionnaire served four separate purposes: (1) to furnish demographic data, (2) to provide limited identification information so that subjects who utilize several sites do not accidentally take the instrument twice, (3) to classify each subject in terms of where
he or she is in terms of the disease spectrum, and (4) to determine how long the subject has been aware of his or her HIV-status. The limitations of this instrument will be discussed later in terms of its ability to differentiate disease stage.

**Perceived Health Competence Scale**

The PHC Scale was selected for this study because this construct is congruent with this study's theoretical foundation (i.e. Green's Stress Process Model), has strong reliability and validity, is health specific, and is a superior selection over the Multiple Health Locus of Control (MHLC). The reason for studying the construct of PHC can best be explained by describing the following experiment. Rats exposed to unavoidable, electric shock over an extended time period, first experience alarm, then resistance to shock combined with gastric ulceration, exhaustion, and finally death; however, with human beings, these results were not as predictable, nor ethical. Selye reports that some human subjects exposed to seemingly inescapable stress adjust quickly, and exhibit little of the physical adaptation syndrome found in lower animals. With these findings in mind, this proposal asks this question: which construct has more explanatory power for explaining how human beings adjust to living with HIV. PLWAs' perception that they have the resources to cope with HIV (primary control) or the ability to derive meaning from being diagnosed with HIV (secondary control)? This question is answered at two different points in the stress process model: perception of stressor(s) and effect on levels of depression. In addition, since both constructs (PHC and coherence) are conceptually distinct, both can be combined in a multiple regression analysis, to see if taken together, both have more predictive power. Since clearly this construct fits within the theoretical
foundation of this study, a description of the instrument along with reliability and validity data will be detailed next.

The PHC scale measures "the degree to which an individual feels capable of effectively managing his or her health outcomes at an intermediate level of specificity" (Smith et. al., 1995, p. 51) which means it was created to "fill a void between existing highly behavior-specific self-efficacy measures and very global perceived competence measures" (p. 61). Indeed, the designers of the PHC scale state that this scale "would be useful in a variety of studies designed to examine diverse related health behaviors and outcomes across a range of conditions or situations" (p. 61). The PHC scale is an eight item, Likert-style instrument which can be located in appendix C, and has demonstrated internal consistency (0.82 - 0.90), and stability over one week (0.82) and two and one-half years (0.60). The PHC scale demonstrated discriminant validity by "indicating that individuals in the arthritis sample reliably reported lower levels of perceived health competence than did members" (p. 58) of the three undergraduate samples and an healthy adult sample (p < 0.001). Also, the healthy adult sample "reported lower levels of PHC than did the younger students, considered collectively" (p. 58). In terms of construct validity, perceived health competence has correlated moderately with more general measures of dispositional hardiness (p.< 0.001), and dispositional optimism (p. < 0.001).

In reference to Rotter's locus of control theory, Wallston (1992) focuses on the benefits of using an indicator of perceived control over health as opposed to a strict focus on the locus of control (LOC) construct. Indeed, Wallston writes, "Yet, neither Rotter nor we appreciated then what I believe now is an important truth: The construct
of LOC plays a far less significant role in predicting health-directed behavior than does either health value by itself or other control-related expectancy constructs, such as self-efficacy..." (p. 185). Wallston states that PHC does contain some internal health LOC and chance health LOC items; however, he states that research will demonstrate that the PHC items will carry much greater predictive power. Wallston even goes so far as to state "when I am asked for advice by other researchers as to which measure they should employ to assess health control expectancies, I advise them to use one of the newer scales rather than the MHLC [Multiple Health Locus of Control]" (p. 194). Wallston states that LOC is but a fraction of the larger, more important, construct, perceived control; Wallston writes that just because a person feels "responsible for his/her health (internal health LOC) does not mean that the person feels capable of taking the right steps to control his/her health status" (p. 194) which is exactly what the PHC scale is measuring. Indeed, the following statement succinctly justifies the selection of this instrument: PHC "has some implications for understanding adjustment to chronic illness. If one perceives one has control over one's disease, its symptoms, or treatment, one has a more positive emotional response" (p. 196).

An additional rationale for choosing the concept of perceived competence over locus of control is provided by Litt (1988) who writes that perceived self-efficacy and control are not global, dispositional constructs, like locus of control, but are rather situationally specific. Hence, "situationally specific expectations of self-efficacy or control are more likely to be relevant to performance in an aversive situation, particularly a novel one" (Litt, 1988, p. 243) like HIV. Such constructs would thus be better predictors of actual behaviors under stress than
would dispositional factors. Thus, the PHC scale is an ideal selection because not only does this instrument assess self-efficacy, but also in a domain that is health-specific. As a result of PHC being situationally specific, the information gained from exploring this variable lends itself to clinical interventions. Indeed, proponents of self-efficacy and control theory have suggested that "cognitive strategies for limiting the aversiveness of a given situation are effective to the extent that perceptions of self-efficacy or control are altered" (p. 243).

Orientation to Life Questionnaire: The Sense of Coherence Scale

The Orientation to Life Questionnaire, often referred to as the Sense of Coherence (SOC) Scale in the literature, was designed by Antonovsky to measure a "global orientation, a way of looking at the world, a dispositional orientation rather than a response to a specific situation" (1987, p. 75). Antonovsky maintains that one cannot have a strong sense of coherence about this one area of life (sphere), and "be at different level with respect to other areas of life" (p. 75). Thus, in drafting the questionnaire, Antonovsky utilized a facet design developed by Guttman, which is based on the notion of Cartesian space, to ensure broad representation of life spheres. In utilizing this design, the researcher designates "facets" of what is to be measured, and then within each facet, important elements would be specified. Thus, each questionnaire item would have several facets from which each facet an element would be contributed to the development of the questionnaire item. This creates the "profile" or "structuple" for the questionnaire item. For example, each question designed by Antonovsky, has five facets from which elements must be selected. One facet is termed the "sense of coherence components," and has as its elements "comprehensibility,"
"manageability," and "meaningfulness." Thus, the questionnaire item could only express one element to the exclusion of the other two. Another facet is time with the elements of past, present, and future. In this manner, Antonovksy is guaranteeing representation of all the different possible combinations or profiles and which contributes to the strength of the instrument, and helps explain why this instrument has demonstrated sound validity and reliability.

Antonovksy cites consistently high levels of Cronbach alphas ranging from .84 to .93, which he indicates is a "respectable degree of internal consistency and the reliability of the instrument" (p. 82). In terms of test-retest reliability coefficients, a .54 correlation was attained based on a two-year period using the SOC-29 (Sense of Coherence Scale that has 29 items - the full version), a .77 was attained based on a six-month period using the SOC-13 (shortened version), and a .91 was attained based on a two-week period using the SOC-29 (Antonovksy, 1993). In addition to reliability, Antonovksy shares a compelling example of how his instrument demonstrated criterion-related validity. Rumbaut, a Californian researcher, read Antonovksy's (1979) book *Health, Stress, and Coping*, and independently developed his own sense of coherence scale. Rumbaut's scale measured the same construct as Antonovksy's Orientation to Life Questionnaire. Thus, in 1981, Rumbaut (the Californian Researcher) upon learning that Antonovksy had also developed a questionnaire, conducted a study to see if they correlated. The correlation attained, based on 336 undergraduate students, was .639. In 1985, the instruments were again correlated by Dana et. al. (1985), based on a sample of 179 undergraduate students. On this occasion, a correlation coefficient of .72 was attained, almost a tenth of a point more
than in 1981. Clearly, the sense of coherence scale is quite robust for the purposes of research.

In the present study, the shortened version has been selected (SOC-13) because it has only 13 items and is administered more quickly. In addition, the SOC-13, as compared to the SOC-29, sacrifices little in terms of integrity. The shortened version has demonstrated the ability to distinguish alcoholics from non-alcoholics (discriminant validity), and to distinguish low anxiety adolescents from high anxiety adolescents. In the latter study, correlations of -.56 and -.62 correlations with anxiety had been attained. (Antonovsky and Sagy, 1986). Additional studies which address the validity and reliability have been delineated and reviewed in an article by Antonovsky (1993).

In this recent article, Antonovsky (1993) presents every study he could find which has used the Orientation to Life Questionnaire. These 26 studies were conducted in 20 different countries, and provided a wealth of information concerning the feasibility, reliability, and validity of this instrument. The fact that such impressive results concerning the integrity of this test was found in 20 different countries would seem to suggest that this instrument is cross-cultural. In these 26 studies, Cronbach Alphas of internal consistency ranged from .82 to .95. In reference to these findings, Antonovsky makes the following comment: "An instrument can be said to be reliable only with respect to a given population. The fact that consistently high internal consistency has been found in a considerable variety of populations, in different languages and cultures - though all Western - is of significance" (p. 727). In another article, published by Bowman (1996), the author empirically validated "Antonovsky's suggestion that a Sense of Coherence is
important [cross-culturally] in managing stress and remaining both physically and psychologically healthy" (p.547). In this study, which involved 81 Native Americans, and 105 Anglo-Americans, sense of coherence was found to correlate negatively with measurements of depression (Beck Depression Inventory), anxiety (State-Trait Anxiety Inventory-Trait Scale), and physical symptoms (Wahler Physical Symptom Inventory) in both populations.

In terms of validity, Antonovsky (1993) states that the "core question is whether the SOC scale measures what it purports to measure" (p. 727). First, Antonovsky (1993) felt that since he designed his questionnaire using the facet approach, this approach would promote the level of content validity. In terms of construct validity, this instrument was correlated with Colby's instrument which measures "adaptive potential." The adaptive potential questionnaire which has three subscales (adaptivity in the ecological world, altruism in the social world, and creativity in the interpretive world), and 104 test-items was administered to 488 undergraduate students along with the SOC-29. The results indicated a .75 correlation. In addition to Antonovsky's own findings and interpretations of other studies, independent researchers have confirmed the integrity of the Orientation to Life Questionnaire.

Flannery et. al. (1994) conducted a study with its sole purpose being to validate Antonovsky's sense of coherence scale. In reference to their findings, these researchers stated that

Sense of coherence scales accounted for as much variance in criterion measures of Life Events stressors, Depression, and Anxiety as did traditional locus of control and social support predictor measures. Sense of Coherence scales emerged as useful additions for studies of personality characteristics implicated in personal reactions to distressing life events. (p. 575).
In reference to these findings, Flannery et. al. used well-established tests to measure depression (Beck Depression Inventory - BDI), anxiety (Taylor Manifest Anxiety Scale - TMAS), locus of control (Rotter's Internal / External Locus of Control Scale), and social support. In addition, the BDI and TMAS were administered again six weeks later which is an additional strength of this study. These researchers demonstrated that not only does sense of coherence correlate with depression and anxiety levels initially, but the significance held up six weeks later. Despite these supportive findings, one weakness of this study was that "the sample was predominantly White, female, single, middle class, and upwardly mobile" (p. 576). Thus, generalizations to other populations are tentative at best.

The HIV Stressor Scale

The rationale for using the HIV-Stressor Scale was that this instrument would be more sensitive to the variety of stressors that HIV could cause, and so this instrument would detect more HIV-related stressors. Indeed, Thompson et al. (1996) stated that the list of stressors was developed after extensive, informal conversations with counselors who work with HIV-positive individuals. An additional reason for employing this instrument was that two of the most frequently occurring stressors, "relationship problems with one's partner" and "financial difficulties" have not been acknowledged in previous studies addressing HIV-related stressors. Since in their study, 52% of the respondents indicated partner relational problems as a stressor in their lives, and that 68% of respondents indicated financial difficulties as a stressor, the instrument utilized to assess stressors should definitely include such items. Indeed, Thompson et. al. (1996), emphasized that "standard life
events scales are not likely to be good measures of the stressors faced by those who are HIV-positive" (p. 7). As a result, this instrument, the HIV-Stressor Scale, seemed to be well-fitted for its intended purpose and to have strong content validity; however, as had been mentioned earlier, this researcher felt that five items should be added.

**Center for Epidemiological Studies Depression Scale (CES-D)**

The CES-D scale (appendix E) has twenty items designed to assess levels of depression in the general population. The possible range of scores is 0 to 60 with higher scores indicating greater levels of depression. In terms of internal consistency, a coefficient alpha of .85 was attained in a sample of the general population, while a .90 was attained in a patient sample (Radloff, 1977). In terms of discriminant validity, the CES-D has demonstrated the ability to distinguish the patient population from the general population. For example, Radloff (1977) discovered that 70% of the patients scored above the arbitrary cut-off point of 16, while only 21% of the general population sample scored above 16. In addition to discriminant validity, the CES-D demonstrated strong criterion-related validity through comparison to other instruments which measure depression. Indeed, the CES-D achieved a .83 correlation with the SCL-90. Also, in terms of criterion-related validity, the CES-D was found to detect major depression 100 percent of the time (N=3), while it detected "a broad category of depressive disorders 77.8% of the time (N=9) when compared to results on the Schedule for Affective Disorders and Schizophrenia, Lifetime Version (SADS-L) which is a semistructured diagnostic interview (Somervell, 1993). Also, in reference to these supportive findings, it should be noted that the population being sampled were Native Americans living on a reservation. Thus, this instrument
would appear to have some cross-cultural validity. In terms of
generalizability across subgroups, Radloff (1977) writes that, "With few
exceptions, the results for the total population were confirmed in all
subgroups." As a result of these findings, Radloff writes "The scale is
suitable for use in Black and White English-speaking American
populations of both sexes with a wide range of age and socioeconomic
status for the epidemiological study of the symptoms of depression (p.
400). Mahard (1988) researched the use of the CES-D in the elderly
Puerto Rican population and reported that the CES-D demonstrated high
internal consistency. In addition to selecting the CES-D because of its
strong validity and reliability as well as its diverse cross-cultural
applications, the CES-D was selected for use in this study because the
CES-D appeared to be the instrument of choice to measure depression in
studies of PLWAs (Siegel et. al., 1996; Lyketsos, 1996; Thompson et. al.,
1996; Linn et. al., 1995; Perdices et. al., 1992).

Controlling Extraneous Variables

Campbell and Stanley (1971) identified eight possible threats that
could potentially confound the results of this study. These variables
include testing, history, instrumentation, maturation, mortality,
statistical regression, differential selection of subjects, and selection-
interaction effects with history, maturation, and/or testing. Some of
these threats (i.e. history, maturation, mortality, interaction of history
and maturation), have already been addressed in the "research design
section" and so will not be revisited. One possible threat to the internal
validity of this study which has not yet been discussed is testing;
however, since no pretest is administered, there is no way that the
pretests could confound the results on the post-test. However, one
concern is the ordering of tests within the battery. Some questions which were considered included: "Would different results be attained if the battery starts with the HIV-stressor scale, then if it were to start with the CES-D?"; "Would starting with one instrument put an individual in a particular mindset, thus affecting his or her responses on the next instrument?"; "Should the instruments be balanced in order, so that group one gets one order of the instruments, while the other group gets the reverse order?" Clearly, such a balance could control for any fatigue effect. Eventually, the decision was reached to administer the instruments within the same order to every respondent, keeping the sequence of questionnaires in the battery in the same order as Green's theory. As a result, the HIV-stressor scale was administered first. This choice hopefully increased the respondents' awareness of what is or has been going on in their lives, and will hopefully help them to respond from more self-aware positions. Next in the process are those instruments which measure the cognitive mediators (the SOC Scale and the PHC scale) that mediate the effects of the stressors. Last, the outcome measure of depression (CES-D) was administered. The only instrument left in the battery was the demographics questionnaire which was actually administered first because it was the easiest to fill out - thereby hopefully increasing the respondents' optimism that they could fill out the rest of the questionnaire battery appropriately.

An additional threat to the internal validity of this study was instrumentation. However, since all instruments which had been selected have strong reliability and validity, the effect of this confounding variable was probably minimal. Another possible threat to the internal validity of research endeavors was statistical regression which was
defined by Gay (1987) as the tendency of scores to regress, or move toward the mean; however, since the data was only collected once for each subject, and since subjects were not preselected on the basis of extreme scores, statistical regression to the mean played no role in confounding the results of this study.

**Analysis of Results**

Analysis of results depended upon which hypothesis was being tested; however, all statistical analyses required correlational techniques since this research design was not experimental in nature. As a result, all findings could not be used to imply cause and effect. The first two hypotheses required multiple regressions for statistical analysis since all of the variables of interest are interval in nature (SOC, lower perceived stress, number of stressors). Standard multiple regression was selected over stepwise or hierarchical multiple regression since the purpose of this research was simply to assess relationships among variables. Tabachnick et. al. (1983) wrote that in choosing which multiple regression technique to use that "unless there is a good reason to use some other technique <other than standard multiple regression> this would be the recommended one" (p. 105). She cited theoretical reasons as the primary rationale for using the other methods which did not seem applicable to this study. In the third hypothesis, the Pearson product moment correlation was selected since that hypothesis has only one independent variable (time since diagnosis) and one dependent variable (SOC) and since both of those variables were interval in nature. The fourth and final hypothesis should ideally have used a point biserial (r-Bis) statistic since one variable (AIDS versus non-AIDS) is dichotomous in nature, while the other variable (SOC) is interval in nature; however, Howell...
(1982), in his textbook entitled *Statistical Methods in Psychology*, wrote that "Scoring the dichotomous variable as 0, 1 and calculating a Pearson r (which we now label $r_{pb}$) is sufficient, and is in fact quite easy with a 0, 1 variable" (p. 213). Since $r_{pb}$ symbolizes a point-biserial correlation, the Pearson product moment correlation was used to analyze the fourth hypothesis. In accordance with Howell's recommendation, the arbitrary value of zero was assigned to people diagnosed with AIDS, while the arbitrary value of one was assigned to people with asymptomatic HIV-infection.

**Ethical Safeguards**

Participants were given an informed consent form (appendix F) to sign. On the form, the participant was made aware that his or her identity would be held anonymous, and that no professionals would have access to the information they reported. Also, potential respondents were made aware that they would be paid five dollars for completing the questionnaire if, and only if, the questionnaire was filled out in its entirety. A check could be mailed to them at the address they decided to place on the payment sheet. Also, the administrator could pay the respondent immediately, if the respondent felt comfortable with the administrator quickly checking the questionnaire to be sure it was filled out in its entirety. This option was clearly noted in the informed consent form, and was explained to the potential respondent before administration. In addition, the potential respondent was made aware that their decisions to participate was voluntary, and that these decisions would have no impact on their continued treatment at each of the respective test sites.
Research Overview

This research endeavor was rooted in the existing research areas of learned helplessness theory, existential theory, HIV-disease stage theory, stress process theory, and psychoneuroimmunology. As a result of combining these different systems of thought, a strong rationale for conducting this research was forwarded in that this research endeavor would be a significant extension of the existing research base, and could theoretically have implications as to the way professional counselors not only conceptualize clients who are HIV-positive, but may also suggest an ideal approach for counseling the HIV-positive client. This chapter began with a clear, concise statement as to the purpose of this study which was to better understand what role PLWAs' PHC and level of coherence play as cognitive mediators of stress responses, and if these constructs could help explain the inconsistent findings regarding psychological disease stage comparisons. All of the four proposed hypotheses were congruent with this purpose. In addition, the research methodology allowed for all of these proposed hypotheses to be tested using correlational statistical tests. Although the proposed sample selection was less than ideal, the use of three sites helped broaden representation. In addition, all of the instruments employed in this proposed study were extremely robust. In addition, the demographic questionnaire, which was developed by this researcher, was pilot studied not only for the purposes of improvement, but also to help guard against unknowingly harming future subjects. Furthermore, this chapter addressed additional ways of protecting the well-being of the subjects. Finally, this chapter addressed possible confounding variables that could diminish the interpretation of the findings.
Chapter 4: Results

Since the rationale, review of the literature, and the methodology have been discussed, the results of this study will be presented next starting with the demographic breakdown of the sample. Next, the results of the HIV-Stressor Scale will be presented and contrasted with the findings of the Thompson et. al.'s study which also used this instrument. In the third section, the statistical analyses of the four hypotheses will be presented. In the final section, a summary will be given connecting the results of the four hypotheses.

Sample Demographic

A total of 100 questionnaires were administered; however, 11 of the questionnaires were unusable due to being filled out incorrectly or incompletely. Also, two participants completed the questionnaire twice, so that eliminated two of the questionnaires. For one of the participants, the questionnaire was eliminated which was not filled out completely. For the other participant, I randomly eliminated one of the questionnaires. The most common errors were omissions (leaving some questions unanswered) or only checking items when items needed to be rated. Review of omitted items demonstrated no consistent trends in terms of which items were left blank. Thus, for statistical purposes, the sample size was 89. Of the 89 participants, 67 were male and 20 were female; 63 were African-American, 1 was Hispanic, 22 were White (non-Hispanic), and three indicated other; 68 earned under 10,000 annually, 14 earned between 10,000 and 20,000 annually, 4 earned between 20,000 and 30,000 annually, one earned over 30,000 annually, and two did not indicate their salary; 22 had no GED or high school diploma, 54 had a GED or high school diploma, 10 had a college degree, and 3 had an...
advanced degree; 9 were between the ages of 20 and 29, 48 were between 30 and 39, 28 were between 40 and 49, and 5 were over 50 years of age; 13 were employed, 20 were unemployed, and 56 were disabled; 35 were heterosexual, 13 were bisexual, and 38 were homosexual; 15 had HIV-asymptomatic infection, 23 had HIV-symptomatic infection, and 51 had AIDS.

### HIV-Stressor Scale

As mentioned in chapter two, Thompson et. al. (1996) offered a comprehensive listing of events which were considered to be commonly experienced by PLWAs. The number which follows each aversive event is the percentage of subjects (N=105) who experienced that particular event in the past month. The percentages in bold which follow are based on the results of this study (N = 89):

<table>
<thead>
<tr>
<th>Event</th>
<th>Current Study (%)</th>
<th>Literature (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problems in relationship with spouse or lover</td>
<td>52% (40%)</td>
<td></td>
</tr>
<tr>
<td>Problems with family</td>
<td>49% (46%)</td>
<td></td>
</tr>
<tr>
<td>Problems in relationships with friends</td>
<td>46% (39%)</td>
<td></td>
</tr>
<tr>
<td>Revealed HIV-status to friend, family, or lover</td>
<td>36% (36%)</td>
<td>45%</td>
</tr>
<tr>
<td>Sexual difficulties</td>
<td>31% (34%)</td>
<td></td>
</tr>
<tr>
<td>Break-up of friendship</td>
<td>21% (29%)</td>
<td></td>
</tr>
<tr>
<td>Friend/lover diagnosed with HIV</td>
<td>21% (21%)</td>
<td></td>
</tr>
<tr>
<td>Bureaucratic (red tape) problems</td>
<td>31% (34%)</td>
<td></td>
</tr>
<tr>
<td>Problems with healthcare providers</td>
<td>17% (16%)</td>
<td></td>
</tr>
<tr>
<td>Lost health insurance</td>
<td>15% (9%)</td>
<td></td>
</tr>
<tr>
<td>Changed physicians</td>
<td>11% (21%)</td>
<td></td>
</tr>
<tr>
<td>Illness of close friend</td>
<td>25% (33%)</td>
<td></td>
</tr>
<tr>
<td>Death of close friend</td>
<td>24% (45%)</td>
<td></td>
</tr>
<tr>
<td>Stresses of caregiving</td>
<td>18% (25%)</td>
<td></td>
</tr>
<tr>
<td>Illness of family member</td>
<td>12% (26%)</td>
<td></td>
</tr>
<tr>
<td>Death of family member</td>
<td>9% (8%)</td>
<td></td>
</tr>
<tr>
<td>Death of spouse or lover</td>
<td>5% (8%)</td>
<td></td>
</tr>
<tr>
<td>Financial problems</td>
<td>68% (81%)</td>
<td></td>
</tr>
</tbody>
</table>

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decrease in income (49%) (35%)
moved to a new residence (31%) (40%)
lost job (17%) (17%)
lost housing (14%) (22%)
problems at work (26%) (9%)
problems with co-workers (18%) (7%).

Through examination of this data, few notable differences emerged between this study's sample, and Thompson's sample. Only one item had more than a 20% point differential ("death of a close friend"), while only two items had a 15% point differential ("problems at work," and "illness of a family member"). Several items had a 10% point spread: "problems in relationship with spouse or lover," "changed physicians," "financial problems," and "problems with co-workers." The rest of the differentials were under 10% points.

The following items were written by participants in the final section where they were directed to list any events which caused them to feel stressed, anxious, or depressed which was not already listed. The following responses were identified: poor financial situation, little food, death of pet, looking for work, being alone, my daughter is away, vandalism to my pick-up truck, helping my son make it through college, being lonely, not being able to achieve certain goals, housing arrangements, and neighbor is hateful. As can be discerned, no one item was listed more than twice. Therefore, the HIV-stressor scale seemed to be representative of events commonly experienced by PLWAs. In addition, as mentioned in chapter 3, this author added four items, which based on professional experience, add a significant amount of stress to PLWAs' lives. The percentage which follows each item are the percentage of participants who experienced these events.

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Decline in CD4 (helper t-cell count) or increase in viral load (34%)

Change in medication regimen or beginning to take HIV-related medications (36%)

Appearance of an HIV-related symptom (i.e. weight loss, loss of appetite, thrush, night sweats, persistent fevers, or diarrhea etc.) (46%)

Severe side effect(s) to medications (26%)

Relapse after being in recovery (substance abuse) (24%)

Perusal of these added items indicated that PLWAs rarely perceive these stressors as "not at all stressful" (1) or "caused only a very little stress or worry" (2). Frequently, these five stressors were perceived as "moderately stressful" to "exceptionally stressful and difficult to deal with."

**Specific Research Hypotheses**

The results of this questionnaire study will be reviewed and interpreted in accordance with the hypotheses outlined in chapter III:

**Hypothesis 1**

H1: Participants with higher perceived health competence, higher sense of coherence, lower perceived stress, and lower number of stressors will exhibit lower levels of depression.

The standard multiple regression resulted in an $F(4,84)$ of 13.29, $p < .01$, which was significant at the .01 level since the significant $F$ value (.0000) was less than alpha (.01). Therefore, the null hypothesis was rejected. A multiple $R$ value of .62 was attained which demonstrated a strong relationship between the predictor variables and the dependent variable. An $R$ Square of .39 demonstrated that the predictor variables accounted for 39 percent of the variance in the dependent variable. The analysis of variance can be found in table 1.
Further analysis of the predictor variables, which can be gleaned from table 2, demonstrated that two of the variables (number of stressors and perception of stressors) should not be used for predictive purposes since their weak contributions were probably due to error. Number of stressors yielded a significant $T$ of .93, while perception of stressors yielded a significant $T$ of .79. Since both of these values are much larger than alpha, these two variables are statistically insignificant. On the other hand, perceived health competence yielded a $T$ of -3.43, $p < .01$, which was significant since its significant $T$ of .0009 was smaller than alpha, while sense of coherence yielded a $T$ of -2.88, $p < .01$, which was also statistically significant since its significant $T$ of .0050 was smaller than alpha. Clearly, both these two variables' contributions were not due to chance since both values were under the .01 alpha level.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>$T$</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHC</td>
<td>-.53</td>
<td>.15</td>
<td>-.36</td>
<td>-3.43</td>
<td>.00</td>
</tr>
<tr>
<td>SOC</td>
<td>-.27</td>
<td>.10</td>
<td>-.32</td>
<td>-2.88</td>
<td>.005</td>
</tr>
<tr>
<td>Percept</td>
<td>.03</td>
<td>.10</td>
<td>.04</td>
<td>.27</td>
<td>.79</td>
</tr>
<tr>
<td>Stress #</td>
<td>-.04</td>
<td>.41</td>
<td>-.01</td>
<td>-.09</td>
<td>.93</td>
</tr>
<tr>
<td>(Constant)</td>
<td>55.29</td>
<td>5.77</td>
<td></td>
<td>9.59</td>
<td>.00</td>
</tr>
</tbody>
</table>
**Hypothesis 2**

H2: Participants with higher perceived health competence and higher sense of coherence will perceive HIV-related stressors as less stress producing.

This standard multiple regression resulted in an F (2,86) of 7.53, p < .01, which was significant at the .01 level since the significant F value (.0010) was less than alpha (.01). Therefore, the null hypothesis was rejected. A multiple R value of .39 was attained which demonstrated a moderate relationship between the predictor variables and the dependent variable. An R Square of .15 demonstrated that the predictor variables accounted for 15 percent of the variance in the dependent variable. The analysis of variance can be found in table 3.

<table>
<thead>
<tr>
<th>Table 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis 2</td>
</tr>
<tr>
<td>Analysis of Variance</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td><strong>DF</strong></td>
</tr>
<tr>
<td>Regression</td>
</tr>
<tr>
<td>Residual</td>
</tr>
<tr>
<td>F= 7.53</td>
</tr>
</tbody>
</table>

Additional analysis of the predictor variables, which can be gleamed from table 4, demonstrated that PHC should not be used for predictive purposes since its weak contribution was probably due to error. PHC realized a T of -0.28, p >.01, with its significant T of .78 being much larger than alpha. In contrast, SOC yielded a T of -2.96, p < .01, with a significant T of .00 which could not be attributed to random error. As a
result, only SOC should be considered a significant predictor of PLWAs' perception of stressor severity.

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>SE B</th>
<th>Beta</th>
<th>T</th>
<th>Sig T</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOC</td>
<td>-0.49</td>
<td>0.17</td>
<td>-0.36</td>
<td>-2.96</td>
<td>.00</td>
</tr>
<tr>
<td>PHC</td>
<td>-0.08</td>
<td>0.29</td>
<td>-0.03</td>
<td>-0.28</td>
<td>.78</td>
</tr>
<tr>
<td>(Constant)</td>
<td>59.77</td>
<td>8.40</td>
<td></td>
<td>7.12</td>
<td>.00</td>
</tr>
</tbody>
</table>

**Hypothesis 3**

H3: Participants who have been diagnosed with Stage IV AIDS (N=51) and have lived with HIV for a longer period of time, will score higher on the Sense of Coherence Scale, than those individuals diagnosed with Stage IV AIDS and who have not been living with HIV as long.

The Pearson product moment correlation yielded a Pearson r of -.30, p > .01, with a P value of .14 which was larger than alpha at the .01 level. As a result, the null hypothesis was accepted. These results suggest that any relationship between SOC and time since diagnosis could have been found due to chance. The independent variable, time since diagnosis, does not appear to be significantly related to sense of coherence in the AIDS subset (N=51) of this sample. In addition, this finding was not even in the expected direction.

**Hypothesis 4**

H4: Participants diagnosed with AIDS will have a lower perceived health competence score than participants who have asymptomatic-HIV infection.

The Pearson product moment correlation yielded a Pearson r of .17, p > .01, with the corresponding P value of .09 being larger than alpha at
the .01 level. As a result, the null hypothesis was accepted. These results suggest that any relationship between PHC and stage of disease could have been found due to chance. The independent variable, stage of disease, does not appear to significantly related to PHC.

**Summary of Findings**

The findings of this questionnaire were not conclusive, and the results were mixed. This study does support the following: SOC is significantly related to depression as measured by the CES-D and to perception of stressor severity, while PHC is only significantly related to level of depression. This study did not demonstrate the following: perception of stressor severity and number of stressor(s) are significantly related to level of depression; PHC is significantly related to perception of stressor severity; time since diagnosis is significantly related to SOC; stage of illness is significantly related to PHC.
Chapter 5: Summary, Conclusions, and Recommendations

Introduction

This discussion will first begin with a brief overview of the study, and will then discuss each of the four hypotheses, and how these four hypotheses' respective results relate to previous findings incorporating the strengths and weaknesses of this study which are also identified in this chapter. Post hoc analyses are also addressed in an attempt to better understand some of the findings which emerged in chapter IV. This chapter ends with a discussion of the practical implications as well as the the implications for conducting future research in this particular area.

Summary

The purpose of this study was to better understand the role PLWAs' PHC and SOC play as cognitive mediators of stress responses within the theoretical framework provided by Green's (1990) "stress process." This stress process model described the interrelationship between three steps in the stress process beginning with the (1) stressor(s) which is then experienced by the individual's unique (2) psychological make-up (cognitive mediating variables such as PHC <primary control> and SOC <secondary control>) which results in (3) an emotional consequence or outcome such as depression and anxiety. The first two hypotheses focused on testing this model, while the second two hypotheses focused on the idea of primary control versus secondary control and how this concept relates to stage of HIV-disease and time since diagnosis. The results of this study showed no support for primary control versus secondary control as it relates to stage or time since diagnosis, but did show support for Green's stress process model.
Discussion of Hypotheses

The first hypothesis would seem to suggest that PHC is moderately predictive of depression. As discussed in chapter III, this connection may be because PLWAs who feel empowered and capable of dealing with their health, are less likely to be depressed. A somewhat weaker connection was demonstrated between SOC and depression, but which was still significant at the .01 level. Since SOC measures the person's ability to derive meaning from their illness as well as their ability to accept their diagnosis, this finding would seem to suggest that acceptance of diagnosis and finding meaning in one's diagnosis are antithetical to depression. The third independent variable, amount of perceived stress, demonstrated no relationship to depression. As mentioned in chapter III, adding this variable allowed empirical testing of Green's "stress process" since perceived stress was conjectured to be an extension of the cognitive intervening variables (SOC and PHC). Thus, this statistical analysis allowed an opportunity to see which was more related to depression: perception of HIV-related stressors or cognitive intervening variables such as perceived health competence and sense of coherence. This first hypothesis seemed to indicate that cognitive intervening variables have a more powerful connection to depression than perceived amount of stress, and the number of stressors experienced. Since SOC was one of the variables which was found to have a statistically significant relationship with depression, this finding will be tied into previous findings.

In the literature (Coward, 1994; Giovinco et. al., 1994; Schwartzberg, 1993), the idea has been expressed that if PLWAs can somehow integrate their HIV-status into a meaningful framework, they will be able to weather stressors better. Since SOC was demonstrated to
have an inverse relationship with both perception of stressor severity and depression as measured by the CES-D, this study appears to confirm these aforementioned authors' assertions, and supports the Linn et. al. (1995) study in which these researchers demonstrated that coherence was inversely related to depression with an HIV-positive, African-American population, and Bowman's (1996) study which also empirically validated that sense of coherence was found to correlate negatively with the Beck Depression Inventory. Thus, this present study combined with the Linn et. al. (1995) and Bowman (1996) studies, clearly indicate that PLWAs who have been able to find meaning in their illness (high SOC) appear to be less depressed; however, this current study, which expanded on Linn's (1995) study, also addressed the possible mechanism through which SOC and depression is related. Since SOC also seems to have a relationship with perception of stressor severity, perception of stressor severity may then impact level of depression. This assertion will be explored later in this chapter. Since PHC was also found to have a significant relationship with depression, this finding will also be tied to previous research endeavors before turning to the relationship between perception of stressor severity and depression.

In the literature, PHC was mentioned as a construct which has been related to level of depression, but which had never been investigated with regards to HIV-disease. This study supported Antoni's (1997) finding in which he found that greater coping self-efficacy was "related to lower emotional distress" (p. 248), and O'Leary's (1988) finding in which he demonstrated that patients living with arthritis who received cognitive behavioral treatments designed to enhance self-efficacy reported less depression. Since the predictive variables of PHC and SOC have been
discussed, the other two predictive variables of number of stressors and
perception of stressor severity will be addressed next.

In terms of Thompson's et. al. (1996) study, their results were not
replicated. Depression was not indicated to be significantly related to
perception of stress, nor number of stressors experienced. This study
would then seem to indicate that a person's psychological make-up
(internal environment) is a better indicator of depression than the
external environment, and lends support to the concept of
phenomenology. This particular finding would seem to support Albert
Ellis' assertion that the activating event at point "A" is not what upsets
us, but our perception of the activating event at point "B," which results
in the emotional consequence at point "C."

The findings of the second hypothesis appeared to contradict the
findings of the first hypothesis. This hypothesis predicted that PHC and
SOC will be related to perceived amount of stress. The first factor,
perceived health competence was addressed because those participants
who perceive they have the resources or capabilities to deal with HIV, will
find HIV-related stressors as less threatening. This variable was not
demonstrated to be related to perception of stress; however, the second
variable, SOC, was significantly predictive of perception of stress. In
chapter III, the idea was suggested that PLWAs who have been able to
find meaning in their being diagnosed HIV-positive, will also be able to
find meaning in other adverse life events, and if some PLWAs can
understand why some stressor(s) have happened to them, then they will
probably not feel these stressor(s) produces as much stress for them. This
second part of this hypothesis is what seems to contradict the first
hypothesis: how can SOC be predictive of both depression level and
perception of stressor severity, and perception of stressor severity demonstrate zero relationship to depression level? One potential explanation could be that one of these two findings (SOC predicts depression \( p < .01 \)) or (SOC predicts level of perception of stressor severity \( p < .01 \)) was found due to chance which seems highly unlikely, or SOC is predictive of depression, but not through the mechanism of perception of stressor severity. Another possible interpretation is that the HIV-stressor scale was not robust enough, and as a result perhaps there was some internal validity problems in terms of instrumentation. This final interpretation seems the most logical. The HIV-stressor scale was not selected because of its reliability or validity. In fact, no studies have been done to confirm these assets. Rather, the HIV-Stressor Scale was selected because it was the only instrument which had been made solely for the target population of this study, and because Thompson et. al. (1996) had produced positive findings with this instrument which this researcher was interested in replicating.

The third hypothesis suggested that people who have been diagnosed with AIDS, as opposed to just HIV, and who have lived with HIV longer, will score more highly on SOC since these PLWAs will have had a longer time to find meaning in their illness and accept their diagnosis. As discussed in chapter III, people diagnosed with stage IV AIDS will be unable to rely on their perception of being in control as a way of buffering stress (PHC). Since these individuals are experiencing a number of symptoms and infections, they are less likely to feel in control of their health. As a result, these PLWAs are forced to deal with this lack of immediate control by seeking meaning which was measured by the SOC; however, since SOC is not something that is attained quickly, time
and experience are often required for the PLWA to derive meaning from their HIV.

The results of hypothesis three was surprising to this researcher since the finding was not even in the expected direction. If anything, the results of this tested hypothesis seemed to indicate that the longer a person is living with HIV, after having been diagnosed with AIDS, the less meaning they are able to find in their diagnosis. One possible interpretation of this finding could be that perhaps the "quality of time" (growth experiences) is more important than the "quantity of time." The "quality of time" could be influenced by a number of factors which were not addressed in this current study. One such factor might be the person's sense of his or her spiritual self: does he or she believe his or her Higher Power has a plan for him or her, or that things happen for a reason, or that he or she will be going to heaven when he or she dies? Such beliefs may have a strong impact on quality of time. An additional factor could be quality of social support: does the individual surround himself or herself with people who are "functional" and "growth enhancing" or does he or she have friends who are "negative," "unsupporting," and "stifling." This current study partially addressed this aspect with questions 13 and 14 on the demographic questionnaire which asked respectively: "I have at least one friend or family member who is aware of my HIV-status?" and "I have a friend or family member, who is aware of my HIV-status, whom I can rely on for emotional support." In reference to the former question, only three participants answered negatively, while in reference to the latter, 17 of the 89 respondents answered negatively. Future studies should look at how these 17 respondents are different in terms of SOC, PHC, depression, and
perception of HIV-stressors. Perhaps if PLWAs feel they have at least one person who will accept them despite their HIV-status, then they will have an easier time accepting themselves with their HIV-status (SOC). Also, if a person has people who support them in their living with HIV, this person may feel more in control of their situation than someone who has no support for their living with HIV. Thus, a future study could look at how level of social support moderates depression through the mechanism of SOC and PHC.

An additional interpretation of the results regarding hypothesis 3 is that the longer a person lives with HIV once diagnosed with AIDS, the more stressors he or she will experience which could result in the individual feeling overwhelmed, depressed, and unable to find meaning in their situation (low SOC), and to feel less control over their health (low PHC). This line of reasoning was tested using post hoc analysis using this hypothesis: Participants with higher perceived health competence and higher sense of coherence will report lower numbers of HIV-related stressors.

This multiple regression resulted in an F (2,86) of 5.60, p < .01, which was significant at the .01 level since the significant F value (.0052) was less than alpha (.01). Therefore, the null hypothesis was rejected. A multiple R value of .34 was attained which demonstrated a moderate relationship between the predictor variables and the dependent variable. An R Square of .12 demonstrated that the predictor variables accounted for 12 percent of the variance in the dependent variable. The analysis of variance can be found in table 5.
Further analysis of the predictor variables, which can be gleamed from Table 6, demonstrated that both variables (SOC and PHC) investigated separately would not have yielded a statistically significant finding: PHC yielded a T of -.66 with a significant T of .51, while SOC yielded a T of -2.26 with a significant T of .03. Since both of these values are larger than alpha, these two variables should both be used in predicting, with extreme caution, the number of stressors a PLWA is experiencing. This finding may partially explain why the null hypothesis 3 was not rejected.

This finding would preliminarily suggest that the more stress a person is experiencing at any given time as measured by the number of stressors, the less likely the individual is going to be able to find meaning in what is happening to him or her. Interestingly enough, this result
may help explain why hypothesis number three was rejected. Hypothesis three conjectured, using the AIDS subset sample \((n = 51)\), that the longer a person has been diagnosed with HIV, the more a SOC will emerge which was not demonstrated in this current study. In contrast, this post hoc analysis would seem to suggest that the longer a person is living with HIV, in the AIDS subset sample, the more stressors he or she will have experienced perhaps as a result of HIV, resulting in lower SOC scores. This finding may help explain Lyketos (1996) finding in which he concluded that, "There is a dramatic, sustained rise in depressive symptoms as AIDS develops, beginning as early as 18 months before clinical AIDS is diagnosed. Prior depression, HIV-disease-related factors, and psychological stressors contribute to this rise" (p. 1430). This finding combined with Lyketos' (1996) finding would seem to suggest that SOC may ward off depression to a point, but that when a person's world falls a part (no job, poor health, relationship problems etc.), the world becomes meaningless to this person.

The fourth hypothesis examined PHC as a being a function of stage of HIV-infection since an individual who has been diagnosed with stage IV AIDS is more likely to have experienced a number of distressing symptoms and infections resulting in a "loss in control" as opposed to someone living with HIV asymptatically. As illustrated in chapter IV, this hypothesis was not substantiated. In the review of the literature, depression and anxiety were found to be present throughout the disease spectrum. For example, Lyketos (1996) reported that, "12 to 18 months before AIDS diagnosis, there was a significant rise in all measures of depression" (p. 1430), while Chuang et. al. (1989) found that "Patients with HIV-asymptomatic infection and ARC evidenced significantly greater
levels of depressive symptoms, mood disturbance, and trait anxiety than did patients with AIDS" (p. 878). Clearly, these two studies demonstrate that depression manifests itself during both the asymptomatic and symptomatic phases of HIV-disease. In addition, Selwyn (1986) reported that 56% of people diagnosed with AIDS, 78% with ARC (symptomatic), and 39% with asymptomatic HIV-infection met the DSM-III criteria for adjustment disorder with anxiety, depression, or both. Cumulatively, these studies suggest that depression and anxiety are throughout the disease spectrum which may explain why PHC was not found to be stage related in this study. Chuang et. al.'s discussion of their results illustrates this point:

Although the endpoint of AIDS may force an individual to deal with such issues as death, dying, and the resolution of unfinished business, earlier stages may introduce equally - if not more - threatening stressors, such as uncertainties about the progression of the illness, fears of pain and suffering, social isolation and rejection, and more general fears of the unknown (p. 879).

The Relationship Between Primary Control and Secondary Control

An additional purpose for this investigation was to explore the concepts of primary control and secondary control and how these concepts relate to disease stage which was first studied by Thompson et. al. (1994). As discussed in chapter II, anecdotal evidence was introduced which indicated that the more negative "molecular meaning units" would predominate (i.e. punishment, isolation, contamination) immediately following a diagnosis of HIV, and that the longer an individual lives with HIV, the more accepting the PLWA is of their HIV-status. With this acceptance, more positive molecular meaning units should be realized (i.e. personal and spiritual growth, belonging). This study was designed to determine if a developmental pattern exist with regards to the ability

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to derive meaning from one's HIV-diagnosis (secondary control) and an individual's sense of control over their health situation (primary control).

The Thompson (1994) study demonstrated that secondary control (SOC) plays a back-up role to primary control (PHC). These researchers believed their results indicated that those people who have lost the ability to control health outcome, because they have deteriorated to that point, will rely on finding meaning in their illness and accepting their fate. They demonstrated this by splitting their sample into high primary control versus low primary control, and then comparing these two groups in terms of secondary control. As indicated in chapter IV, the results of this study do not support these notions, nor do they confirm the Thompson (1994) study. Since this study’s results seem to suggest otherwise, the following should have been one of the original hypotheses: In people with an AIDS diagnosis, as opposed to HIV-symptomatic or asymptomatic infection, SOC scores will be more predictive of depression than PHC scores. After statistically analyzing this hypothesis with two separate Pearson moment product correlations (one for PHC predicting depression, and one for SOC predicting depression) in people diagnosed with AIDS (n = 51), the correlation for PHC was slightly stronger ($r = -.51$) than SOC ($-.42$); which held constant across the entire sample (N = 89). This contradictory finding is probably due to the recent advances in HIV-treatment since 1995. With the advent of protease inhibitors, "drug cocktails," and viral load testing circa 1996, the death rate has dropped substantially, and people diagnosed with AIDS have been getting off of disability and reentering the work force. Indeed, the term "Lazarus Complex" has been used to describe this recent phenomenon as if PLWAs are being brought back from the dead. Thus, the results of this study
may be accurately reflecting the status quo which is PLWAs feeling more in control of their lives, and their health situation.

**The CES-D Scale**

As discussed in chapter III, Siegel (1996) indicated that 55% of her subjects scored over 16 which is the inventory's cut-off score for depression with the mean of her sample being 19.18. She indicated that in the general population the mean on the CES-D is 8.7. In this current study, 75% of the sample scored over 16 with the sample's mean being 24.72 (N = 89) which is 20% higher. In an attempt to understand this fairly large disparity between these two samples, Siegel's and this current sample were demographically compared. Siegel simply described her sample with the following statement (N = 144): "Participation was limited to men who had tested seropositive for HIV-antibodies, had sex with other men, did not use intravenous drugs in the past two years, were 20-45 years of age, and resided in the New York metropolitan area" (p. 231). Thus, her sample was different from this researcher's sample which could explain the large disparity. First, the current sample was one-fourth female, and 39% heterosexual which is very different from a sample which is all men who have sex with men. Also, geographical differences between Virginia and New York City could also account for some of the variance. Despite this disparity, clearly this study supports Lyketos (1996), Siegel et. al. (1996), and Selwyn's (1986) findings that PLWAs experience more distress, depression, and anxiety than the general population.

**Strengths**

One strength of this study was that all questionnaires were personally administered, as opposed to being mailed. As a result, most of
the benefits of doing interviews were realized. For example, an opportunity existed to establish rapport with the respondents, to explain the purpose of the study, and to clarify questionnaire items. At the same time, this questionnaire format permitted collection of data from a much larger sample, was less expensive, and more efficient (Gay, 1987). Out of the 100 questionnaires administered, 89 were usable which is much better than the average response rate of mailing out questionnaires.

An additional strength of this study was addressing several variables simultaneously within a previously developed theoretical model. This model guided this scientific exploration into the complex interrelationships between stressors, cognitive intervening variables, depression, and other variables such as time since diagnosis and stage of HIV-disease. Thus, as in some of the hypotheses, variables were able to be controlled, as to not confound the results. For example, stage of illness was held constant while exploring the relationship between time since diagnosis and SOC. Also, this model allowed for simultaneous, relative comparisons of variables to each other to see which variables were more predictive of the dependent variable as in the first hypothesis which looked at how PHC, SOC, number of stressors, and perception of stressor severity were related to level of depression which will be discussed more next.

An additional strength of this study was that the research question, "Are PLWAs' phenomenological worlds (i.e. SOC and PHC) significant cognitive moderators of the stress response process?," was answered at two distinctly different points in the stress process. The first point was the appraisal aspect of the process in which participants are instructed to estimate the amount of stress they feel particular HIV-
related stressors produced for them. Intuitively, if individuals believe a particular stressor or group of stressors have caused them much stress, then they will probably experience a more adverse stress response (i.e. more depression, more anxiety). This perception of stressors as producing much stress could act as a self-fulfilling prophecy. The self-fulfilling prophecy theory was addressed at point two. At point two, the actual stress response, as measured by the CES-D, yielded an opportunity to observe the relationship not only between the PLWAs' phenomenological worlds and their stress responses to see if a positive relationship exists, but also offered an opportunity to observe the relationship between perception of HIV-related stressor(s) and the stress response to determine if a positive relationship exists thereby testing the self-fulfilling prophecy's role in this research. The results of this study seemed to indicate that the self-fulfilling prophecy was not active since PHC and SOC seemed to have a relationship with depression, while perception of stressor severity did not have a relationship with depression.

Limitations

This study had several notable weaknesses. First, 11 of the questionnaires were unusable as a result of being filled out incorrectly or because two of the subjects decided to fill out two questionnaires either by error or to increase their monthly income. Second, as already noted, the HIV-stressor scale lacked validity and reliability which could have confounded the results of some of the hypotheses due to instrumentation.

A third weakness of this study was that sometimes making distinctions in terms of disease stage was difficult using the
questionnaire. Despite multiple questions in the questionnaire to make this distinction, this process was not a perfect science. For example, one such question requested the CD4 count. If a subject's CD4 count was under 200, then he or she was automatically classified as AIDS; however, sometimes subjects did not know their CD4 count. Another question asked if the participant had ever had any of the following opportunistic infections which were then listed. Commonly, nothing was identified with this question either. If the person had indicated any of these infections, then he or she was then classified as AIDS. Another question asked the client to list any medications he or she had ever taken for any HIV-related reasons. If the subject listed Bactrim, Dapsone, Mepron, or Pentamadine, for example, which are all prescribed to prevent the onset of pneumonia, then the individual had an history of having either a CD4 count under 200 or an history of PCP infection which then indicated an AIDS diagnosis; however, often subjects did not indicate taking any of these medications. Yet another question listed all of the HIV-related symptoms, and the subject was then requested to check those symptoms which were applicable to him or her. If the subject checked one of these symptoms, and had indicated a CD4 count over 200, then he or she was classified as having symptomatic HIV infection. Finally, if the individual had reported no symptoms or checkmarked just fatigue, then he or she was classified as having asymptomatic infection. The reasoning for fatigue alone being insufficient to warrant a classification of symptomatic HIV-infection was that fatigue could so easily be explained by other factors (i.e. depression) which, as has already been noted, is fairly common among PLWAs. Despite these multiple questions aimed at helping to differentiate disease stage, and as a result of these common
types of omissions, classification by disease stage was difficult. Upon reflection, a question should have been used to determine if the symptoms they were reporting (i.e. nausea, diarrhea etc.) were the side effects of the toxic anti-HIV medications, or symptoms of disease stage. If a person had not been diagnosed with an OI, and did not report CD4 count, then making a distinction between symptomatic and asymptomatic was difficult based solely on the reported symptoms since the etiology of the symptoms was uncertain.

In terms of external validity, two limitations need to be noted: First, individuals who are not dealing with their HIV-infection were probably not represented. Since only 15 of the participants had HIV-asymptomatic infection, 23 had HIV-symptomatic infection, and 51 had AIDS, this breakdown may suggest that people wait to seek out services when they need services (seeking disability, seeking financial assistance for loss of job due to health, or seeking medical treatment). Indeed this observation seems to be confirmed by not only the over representation of AIDS diagnoses, but also that only 13 were employed, while 20 were unemployed, and 56 were disabled. Secondly, this sample also seemed to be over representative of financially disadvantaged individuals: 68 earned under 10,000 dollars annually, 14 earned between 10,000 and 20,000 annually, 4 earned between 20,000 and 30,000 annually, one earned over 30,000 annually. This breakdown was probably a mixed function of living on a fixed income (disability) and educational level: 22 had no GED or high school diploma, 54 had a GED or high school diploma, 10 had a college degree, and 3 had an advanced degree. As a result of these two limitations, generalizations should be limited to PLWAs who (1) are actively seeking treatment or assistance for living with HIV, (2) are from a
lower socioeconomic status, and (3) are manifesting HIV-related symptoms.

Recommendations

Since this study supports Litt's (1988) conclusion that "cognitive strategies for limiting the aversiveness of a given situation are effective to the extent that perceptions of self-efficacy or control are altered" (p. 243), and since this study also supports Linn's (1995) and Bowman's (1996) results which indicated that SOC was inversely related to depression, these cumulative results would seem to warrant a proposed model for counseling PLWAs. In addition to this present study, Linn also demonstrated that SOC was inversely related to other psychological constructs such as anxiety and self-esteem (1993 & 1995) which further validates consideration of SOC in any counseling approach involving PLWAs as clients.

As a result of the present and aforementioned findings, a theoretical model will be proposed for counseling PLWAs. As with any counseling approach, a thorough assessment is crucial for the determination of therapeutic goals, therapeutic approach, and treatment planning. In assessing PLWAs, these cumulative findings warrant an assessment of both the PLWAs' sense of control (primary control) and PLWAs' ability to find meaning in adverse life events (secondary control). These psychological constructs or cognitive mediating variables could be formally assessed using the instruments in this study (e.g. the PHC scale and the SOC scale), or informally assessed by the clinician. Informally, the clinician could gain a sense of the HIV-positive client's sense of primary control by asking the client questions such as:

- What things have you tried in the past to improve your health?
• How do you fight something like HIV?
• What kinds of activities do you engage in now to beat this thing?
• What things could you give up or reduce to improve your health (i.e. smoking, alcohol consumption, stressful situations?)

In addition to the clinician informally assessing primary control, the clinician could also gain a sense of the HIV-positive client's sense of secondary control by asking the client questions such as:

• Have you been able to come to terms with being HIV-positive? If yes, then how did you make that happen for you, and if no, then how would you envision that happening?
• What would that mean to you, “coming to terms with your HIV-diagnosis?” What would that acceptance mean for you?
• How do you view your HIV-diagnosis (i.e. as a challenge or an impossibility of further possibilities - “a death sentence”)? How do you think that perception affects you in the here and now (present)?
• What positive life changes have you made as a result of your HIV diagnosis? Closer to family? Spending time differently? Interacting with people differently? Taking more responsibility for your life?

Clients’ answers to these questions will help clinicians determine to what extent the constructs of primary control and secondary control need to be addressed in therapy. If clients respond to these questions in a defeatist, pessimistic, “I’m powerless” manner, then therapists need to determine the etiology of these belief systems. For example, do these belief systems stem from axis II pathology (i.e. do the individuals have dependent or depressive personality traits?). Do they approach all life with “pity me” or “poor me” orientations, or do their orientations specifically surround their HIV-diagnoses and health situations? If their
powerless orientations only surrounds their health situation, then therapeutic efforts could solely concentrate on increasing clients’ sense of primary control; however, if the roots of their “powerless orientations” lie deeper inside and are a function of their personalities, then confrontation on their defeatist attitude and how they try to elicit pity from everybody will need to be confronted after a strong therapeutic alliance has been established. In this instance, these individuals’ belief systems (or personalities) will have to be reconstructed, before the empowerment process of counseling can even begin; however, if these individuals are truly depressed on axis I with a diagnoses such as adjustment disorder with depressive features or major depressive disorder with no axis II pathology, then HIV-positive clients will probably benefit quickly from an empowerment approach which will be detailed next.

Initially, interventions in this area should be non-directive with therapists taking an encouraging, empowering stance. Therapists should facilitate a process of self-discovery in clients thereby respecting clients’ rights to self-determination. Clients ideally should come up with their own plans because this self-determination is empowering in itself. In such a process, HIV-positive clients realize that they can think, problem solve, and eventually act on their own behalves even if they are HIV-positive. In addition, clients are more likely to follow through on a plan they develop themselves, as opposed to one which is imposed on them by therapists. This self-determination leads to self-action and self-responsibility. At this point in therapy, clinicians can simply act as “motivational resources.” As clients express vague ideas as it relates to improving the quality of their lives, or as clients identify activities they could be engaging in to increase their longevity or improve their health
situations, therapists help these clients fully develop their thoughts and operationalize their plans.

Some ideas clients may incorporate and implement could include improving nutritional intake, engaging in stress reduction activities (i.e. exercise, meditation), developing an HIV-positive support network, applying for various financial entitlements and benefits if appropriate (i.e. social security disability, food stamps, fuel assistance programs etc.), educating themselves about the disease process and how anti-HIV medications work, and deciding if, when, and what anti-HIV medications to start taking. Some of these areas may be best addressed through a referral to an appropriate source. For example, if clients are interested in improving their nutritional intake, then referrals to nutritionists would be most appropriate, and if clients are interested in developing HIV-positive support networks, then referrals to HIV-positive support groups may partially address these needs. These needs for support may also be addressed by therapists helping clients make tough decisions about who, when, and how to tell others they are living with HIV. These decisions can be extremely complex with potential, extreme negative and/or positive repercussions. As a result, every facet of these decisions need to be explored with clients. Questions therapists may wish to explore with clients contemplating these decisions include:

• What do you hope the outcome of this disclosure will be?
• What could be some of the negative responses you could receive?
• What is your plan if the outcome turns out to be negative? What will this response mean for you?
• How do you think a negative response will emotionally affect you?
• What kind of support are you expecting if the response is positive?
• How much support are you expecting if the response is positive?

In addition to the above questions, sometimes a simple cost-benefit analysis of the decision is a comprehensive, systematic way of facilitating client decision-making. This written exercise requires clients to make two lists. One list, the "costs list," helps clients consider what they could lose, or what they may have to sacrifice if they disclosed their HIV-diagnosis to a loved one(s). Such costs could include rejection(s) and/or abandonment(s) due to HIV or other undisclosed related secrets (i.e. bisexuality, infidelities, IDU history), feelings of emotionally burdening loved ones, feelings of causing loved ones pain or distress, feelings that loved ones may fear you, etc. The second list, the "benefits list," helps clients consider what they could gain by disclosing their HIV-status to a loved one. Such gains could include feeling unconditional love (recognizing that they can be loved even though they are HIV-positive), emotional support for living with HIV (being able to have loved ones who can listen and be empathetic as to what PLWAs are experiencing), and logistical support (being able to have loved ones who can provide transportation, financial assistance, and domestic assistance) for PLWAs in compromised situations. In addition to such a decision-making exercise which addresses the who, what, and when to disclose one's HIV-status, PLWAs may also have problems with the "how" to disclose. Role playing HIV-disclosures is one way to address this "how to" aspect.

In addition, the aforementioned decision-making exercise could be used to help PLWAs make decisions about if and when to begin anti-HIV medications. These types of decisions require therapists to be knowledgeable about the HIV-disease process and how anti-HIV medications fight HIV and slow down the disease process. Therapists
have the responsibility that PLWAs are fully informed with regards to this information so that PLWAs can make informed decisions. This educational facet of therapy may be complemented with bibliotherapy and with therapists encouraging clients to seek medical consultations with infectious disease specialists. In summary, these exercises clearly demonstrate that therapists are collaborative partners in a joint venture with the agreed upon missions of improving clients' quality of lives and health situations; however, sometimes the best laid plans do not work.

Despite clients being fully-vested in these action plans, their health may begin to fail anyway and their quality of lives may continue to diminish. This juncture in therapy can be rough for therapists, and even rougher for HIV-positive clients. This continual deterioration despite their best efforts begs two questions: (1) At one point does therapy switch from viewing HIV as a challenge to dealing with HIV through resignation and acceptance?, and (2) Is this very question an all-or-nothing proposition? The answer to these questions reflect the complexity of life for nothing is in strictly black-or-white terms, but rather shades of gray. Certain areas of PLWAs' lives will have to be resigned, while other areas can be still viewed as a challenge - even up to the final moments of life. Naturally, this discussion leads into the concept of secondary control (SOC) and how this relates to this therapeutic model.

In this therapeutic model, which specifically addresses clients living with HIV, two simultaneous processes are operating which correspond to the concepts of primary control (empowerment techniques) and secondary control (existential techniques). Depending on clients' assessed needs, one or the other process is more salient, but both may be operating...
simultaneously. For example, clients may have to accept the fact that they have deteriorated to the point of non-recovery; however, they can still exert primary control over who is present when they die, what they tell loved ones before they die, what they will leave to whom, and what they want to be their legacy. In addition, these existential processes (i.e. exploration of death) can be explored even in the early stages of HIV-infection if timed right and done in a non-threatening manner. Such explorations allow for that "shift in perspective" in what they are doing with their lives. This realization, probably for the first time, that they are not immortal helps people assume responsibility for their lives. These clients may realize that they have been living their lives inauthentically, and may then choose to live their lives more responsibly. For example, initially an individual may have been a neglectful, undependable father who was more concerned about where he was going to get his next hit of heroin; however, his eventual diagnosis of HIV helped him to glimpse his probable, unwanted future. He feared dying of HIV in prison and being permanently separated from his children. This is an example of an existential shift in perspective which motivated him to take recovery more seriously than before.

As the above example illustrates, existential techniques are not so much a set of techniques, but rather a stimulation of the clients’ existential awareness. With HIV-positive clients, an exploration of "what it means to the client that they are HIV-positive," is a first step in this exploration. As discussed in the review of the literature, Schwartzberg (1993) identified 10 different ways PLWAs can perceive their diagnoses of HIV which is a helpful framework for such an exploration, and as alluded to before, an overarching goal of therapy is to assist clients’ movement
away from the negative molecular meaning units (punishment, isolation, contamination, powerlessness, irreparable losses), and movement toward the positive molecular meaning units (belonging, spiritual and personal growth). In the case of the neglectful, undependable father, he initially felt that he was being punished for being an IDU, and he felt he had been handed a death sentence (irreparable loss) and another disease he felt powerless to deal with (i.e. dealing with both HIV and addiction). As this case study will demonstrate, both empowerment and existential processes were utilized. First, this client was recently diagnosed, and asymptomatic with a t-cell count of 800; however, he demonstrated several symptoms which were indicative of a depressive reaction: sleep and appetite disturbance, inability to concentrate, and feelings of worthlessness. As a result of this symptomatology and the recency of his HIV-diagnosis, he met the DSM-IV criteria for adjustment disorder with depressive features. In the early phases of therapy, due to his feelings of powerlessness and his belief that he was going to die soon, the therapist first had to develop rapport and trust with the client, and then correct his misperceptions. For instance, many clients who have recently been diagnosed often believe that they will be dead in the near future. During these early stages, the therapist needs to help the client challenge this faulty belief system, view their HIV-diagnosis as a challenge, and identify what the client can be doing to beat this disease. This empowerment approach will help counter his sense of powerlessness, and as the research has demonstrated, should diminish his depressive symptomatology.

At the same time, existential processes could be operating to deal with his feelings of worthlessness and punishment. As the research has
also demonstrated, if clients can comprehend and find meaning in what has happened to them, then they will become less depressed. In the case of the neglectful, undependable father, he was able to move away from viewing his diagnosis of HIV as a punishment, and towards a belief that this was one of life's lessons that he could grow from and learn, and that perhaps he has been given a disease which will give him time to correct his mistakes. This shift in perspective, or reframe, gave him the impetus to be an attentive, dependable father to his children, and a more loving husband to his wife. He later realized how his HIV-diagnosis literally brought him closer to his family than would have been possible without his life feeling threatened. Clearly, his diagnosis of HIV and death-perception helped him to assume responsibility for his life and to start living his life more authentically.

In addition to this researcher's thoughts and experiences regarding an existential counseling approach to PLWAs, Giovinco et. al.'s (1994) article entitled, "Logotherapy: A journey into meaning for people with AIDS," and Coward's (1994) article entitled, "Meaning and purpose in the lives of persons with AIDS," provide additional perspectives which the reader may find helpful. Giovinco's (1994) article affirms the idea that "meaning is unique and specific in that it can be fulfilled by each person alone; only then does it achieve a significance that will satisfy that person's own will to meaning" (p. 76), and also affirms that "individuals are capable of transcending a dreadful human condition to find meaning in life while suffering (p. 77)," which was based on Viktor Frankl's concentration camp experiences. Clearly, these statements are consistent with this proposed counseling model for PLWAs. Coward's (1994) article also affirms this proposed approach by defining self-
transcendence as:

an experience during which one reached outward beyond personal concern or inward toward increased understanding, the outcome of which was feelings of increased connectedness with others, increased self-esteem, and well-being and increased purpose and meaning in life.

In summary, this entire body of research indicates two counseling processes that therapists counseling PLWAs need to be attuned: (1) empowerment processes addressing primary control and (2) existential processes addressing secondary control since both types of control are clearly related to psychological constructs such as depression, anxiety, and self-esteem. In addition, various strategies and examples were delineated illustrating how to operationalize these processes in a counseling approach.

Implications for Additional Research

The following implications for future research are recommended based on the execution and results of this study:

1. A generic stressor scale, which has demonstrated reliability and validity, should be used in future research endeavors until an HIV-stressor scale is developed which has demonstrated reliability and validity for the purposes of exploring how stress and depression are interrelated in PLWAs.

2. Deliberate attempts should be made to get a more representative sample in terms of socioeconomic status and education levels. Results of this study could have been confounded by the over representation of lower socioeconomic status. People from a lower socioeconomic status may be qualitatively different from people from a higher socioeconomic status in terms of both SOC and PHC. For example, in terms of SOC, people from a higher socioeconomic status, will not be focused as much
on immediate needs such as food, housing, and safety, and are more likely to have private health, life, and disability insurance. Thus, the higher socioeconomic group may be more focused on self-esteem and self-actualization needs which may lend itself more to meaning exploration and which could have theoretically impacted the SOC scores of this present study. In terms of PHC, people from higher socioeconomic status and/or higher educational levels, may feel more in control of their health situation since they may be more likely to educate themselves about the disease process and its respective treatments, and since at least financially, they are perhaps more used to exerting control over their life situation.

3. Deliberate attempts should be made to get a more even spread of disease stage. Intergroup comparisons were tough since out of 89 research participants, only 15 were asymptomatic. Future research should delineate in the methodology section that a certain number of individuals from each disease stage be selected as to avoid this pitfall. This recommendation would be ideally implemented in a large, infectious disease clinic, where the researcher would have access to medical charts which leads to the fourth research recommendation.

4. As already discussed, the classification of participants into disease stage was not a perfect science. Future research would more ideally be implemented in a medical setting where the researcher has access to medical charts. This access would naturally be more ideal for classifying people in terms of disease stage as opposed to using a questionnaire to make that determination.

5. As already discussed, future studies need to address how quality of social support predicts SOC, PHC, depression, and perception of HIV-
stressors.

6. In reference to the HIV-Stressor Scale, the large differential for the "death of a close friend" was surprising especially considering that the death rate, in terms of HIV-induced deaths, has dropped substantially. No theory could be suggested to help explain this finding. Future research may be warranted to help explain this surprising finding.

Conclusion

In this section, the results of the four hypotheses were detailed one-by-one, and placed in the context of existing related literature. Also, recommendations were outlined concerning the practice of counseling HIV-positive clients. Since this study demonstrated that perceived health competence and sense of coherence are antithetical to depression, counselors should consider these constructs in working with HIV-positive clients, especially those clients recently diagnosed who often meet the criteria for adjustment disorder with depressive features or major depressive episode. In addition, this section outlined research recommendations that acknowledged the weaknesses and pitfalls of this current study, and which used this knowledge to help guide future research in this area.
Appendix A: Demographic Questionnaire with Pilot Study Results

Please Check the Appropriate Categories:

1- Gender: 89% Male  11% Female
2- Race: 89% African-American  0% Hispanic  11% White (non-Hispanic)  0% Other: Please Specify:_____________________
3- Income: 89% 0 - 10,000 annually  11% 10,000- 20,000 annually  0% 20,000-30,000 annually  0% 30,000 + annually
4- Education: 11% no high school diploma or GED  89% high school diploma or GED  0% college degree  0% advanced degree
5- Insurance: 33% none  11% private  56% Medicaid and/or Medicare  0% Other: Please specify_____________________
6- CD4 Count: 22% 0-100  22% 100-200  33% 200-500  22% over 500
7- Age  0% 13-19  22% 20-29  56% 30-39  22% 40-49  0% 50+
8- Work Status  0% employed  22% unemployed  78% disabled
9- Sexual Orientation: 44% heterosexual  11% bisexual  44% homosexual
10- Risk Factors: 56% men having sex with men  44% men having sex with women or vice versa  0% history of injecting drug use  0% other: please specify - ____________________________
Please answer the following questions:

11 - What are the last four digits of your social security number? ________________

12 - What year were you diagnosed HIV-positive? 1997 (22%), 1996 (34%), 1993 (11%), 1991 (11%), 1986 (11%), 1985 (11%)

13 - I have at least one friend or family member who is aware of my HIV-status. Please circle: YES 100% or NO 0%.

14 - I have a friend or family member, who is aware of my HIV-status, whom I can rely on for emotional support. Please circle: YES 89% or NO 11%.

15 - If you have experienced any of the following symptoms, please check those which have been true for you:

- 100% tire more easily or fatigue
- 78% night sweats (sheets soaking wet in the middle of night)
- 67% loss of appetite
- 44% weight loss
- 56% thrush (white, yeast infection in mouth)
- 33% persistent, unexplained fevers
- 56% persistent, unexplained diarrhea
- 56% swollen lymphnodes
- 22% other - please list: depression, arthritis

16 - Have you been diagnosed with any of the following conditions:

- 22% PCP (Pneumocystis Carinii pneumonia)
- 33% MAC (microavium intracellular complex)
- 0% CMV (cytomegalovirus)
- 0% any other major opportunistic infection: Please specify __________________

17 - Are you taking any medications to prevent pneumonia (PCP)? Yes / No

If yes, then please check which of the following medications you have ever taken.

- 56% Bactrim (Septra, TMP-SMX)
- 0% Dapsone
- 0% Pentamadine
- 0% Mepron (Atovaquone)

18 - Are you taking any antiretrovirals (those drugs which fight HIV directly)? Yes / No

If yes, please check those which you currently are taking:

- 33% AZT (Retrovir, Zidovudine)
- 0% DDI (Videx, Didanosine)
- 0% DDC (Hivid, Zalcitabine)
- 56% 3TC (Epivir, Lamivudine)
- 22% D4T (Zerit, Stavudine)
- 0% Rescriptor (Delavirdine)

33% Crixivan (Indinavir)
0% Ritonavir (Norvir)
0% Saquinavir (Invirase)
11% Nelfinavir (Viracept)
0% Viramune (Nevirapine)

19 - If you are taking any other medications for any HIV-related conditions, then please list these drugs:

Zithromax, Fluconazole, Megace
Appendix B: HIV-Stressor Scale

Instructions to the participant:

Please check those events which happened to you in the past month.

_____ Problems in relationship with spouse or lover
_____ Problems with family
_____ Problems in relationship with friends
_____ Revealed HIV status to friend, family, or lover
_____ Sexual difficulties
_____ Break-up of friendship
_____ Friend/lover diagnosed as HIV-positive
_____ Bureaucratic (red tape) problems
_____ Problems with healthcare provider
_____ Lost health insurance
_____ Changed physicians
_____ Illness of close friend
_____ Death of close friend
_____ Stresses of taking care of another person
_____ Illness of family member
_____ Death of family member
_____ Death of spouse or lover
_____ Financial problems
_____ Decrease in income
_____ Moved to a new residence
_____ Lost job
_____ Lost housing

_____ Problems at work

_____ Problems with co-workers

_____ Decline in CD4 (helper t-cell count) or increase in viral load

_____ Change in medication regimen or beginning to take HIV-related medications

_____ Appearance of an HIV-related symptom (i.e. weight loss, loss of appetite, thrush, night sweats, persistent fevers or diarrhea, etc.)

_____ Severe side effect(s) to medications

_____ Relapse after being in recovery (substance abuse)

_____ Please list any other events which occurred in the past month which you feel caused you to feel depressed, anxious, or stressed: __________________________________________

___________________________________________________________

___________________________________________________________

___________________________________________________________

---------------------------------------------------------------------

IMPORTANT: PLEASE READ

Now please return to the top of the list on the previous page, and next to each event you checked or added, please indicate how much stress you feel that event caused you. For example, if the event "caused only a very little stress or worry" for you, than place a "2" next to the checkmark you made. Please use the following numbers to indicate how much stress each event caused you, and place the appropriate number next to each checkmark you made.

1. not at all stressful
2. caused only a very little stress or worry
3. moderately stressful
4. very stressful
5. exceptionally stressful and difficult to deal with
Appendix C: The Perceived Health Competence Scale

Health Beliefs

Instructions: Please circle the number that best describes how much you agree or disagree with each of the statements below.

1 = I strongly disagree
2 = I moderately disagree
3 = I slightly disagree
4 = I slightly agree
5 = I moderately agree
6 = I strongly agree

1. I handle myself well with respect to my health. 1 2 3 4 5 6

2. No matter how hard I try, my health just doesn’t turn out the way I would like. 1 2 3 4 5 6

3. It is difficult for me to find effective solutions to the health problems that come my way. 1 2 3 4 5 6

4. I succeed in the projects I undertake to improve my health. 1 2 3 4 5 6

5. I’m generally able to accomplish my goals with respect to my health. 1 2 3 4 5 6

6. I find my efforts to change things I don’t like about my health are ineffective. 1 2 3 4 5 6

7. Typically, my plans for my health don’t work out well. 1 2 3 4 5 6

8. I am able to do things for my health as well as most other people 1 2 3 4 5 6
Appendix D: The Sense of Coherence Questionnaire
Orientation to Life Questionnaire

Here is a series of questions relating to various aspects of our lives. Each question has seven possible answers. Please mark the number which expresses your answer, with numbers 1 and 7 being the extreme answers. If the words under 1 are right for you, circle 1; if the words under 7 are right for you, circle 7. If you feel differently, circle the number which best expresses your feelings. Please give only one answer to each question.

1. Do you have the feeling that you don't really care about what goes on around you?
   1  2  3  4  5  6  7
   very seldom or never always have this feeling

2. Has it happened in the past that you were surprised by the behavior of people whom you thought you knew well?
   1  2  3  4  5  6  7
   Never Always
   Happened Happened

3. Has it happened that people whom you counted on disappointed you?
   1  2  3  4  5  6  7
   Never Always
   Happened Happened

4. Until now your life has had:
   1  2  3  4  5  6  7
   No Clear Goals or Purpose at all Very Clear Goals and Purpose

5. Do you have the feeling that you're being treated unfairly?
   1  2  3  4  5  6  7
   Very Often Very Seldom or Never

6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?
   1  2  3  4  5  6  7
   Very Often Very Seldom or Never
7. Doing the things you do everyday is:

1  2  3  4  5  6  7
A Source of Deep Pleasure and Satisfaction
A Source of Pain and Boredom

8. Do you have very mixed-up feelings and ideas?

1  2  3  4  5  6  7
Very Often Very Seldom or Never

9. Does it happen that you have feelings inside you would rather not feel?

1  2  3  4  5  6  7
Very Often Very Seldom or Never

10. Many people - even those with a strong character - sometimes feel like losers in certain situations. How often have you felt this way in the past?

1  2  3  4  5  6  7
Never Very Often

11. When something happened, have you generally found that:

1  2  3  4  5  6  7
You Overestimated or Underestimated its Importance
You Saw Things in the Right Proportion

12. How often do you have the feeling that there's little meaning in the things you do in your daily life?

1  2  3  4  5  6  7
Very Often Very Seldom or Never

13. How often do you have feelings that you're not sure you can keep under control?

1  2  3  4  5  6  7
Very Often Very Seldom or Never
Appendix E: CES-D Scale

INSTRUCTIONS FOR QUESTIONS: Below is a list of the ways you might have felt or behaved. Please indicate how often you have felt this way during the past week using the following key.

(A) Rarely or None of the Time (Less than 1 day)
(B) Some or a Little of the Time (1-2 days)
(C) Occasionally or a Moderate Amount of Time (3-4 days)
(D) Most or All of the Time (5-7 days)

During the past week:

___ 1. I was bothered by things that usually don't bother me.
___ 2. I did not feel like eating; my appetite was poor.
___ 3. I felt that I could not shake off the blues even with help from my family or friends.
___ 4. I felt that I was just as good as other people.
___ 5. I had trouble keeping my mind on what I was doing.
___ 6. I felt depressed.
___ 7. I felt that everything I did was an effort.
___ 8. I felt hopeful about the future.
___ 9. I thought my life had been a failure.
___10. I felt fearful.
___11. My sleep was restless.
___12. I was happy.
___13. I talked less than usual.
___15. People were unfriendly.
___16. I enjoyed life.
___17. I had crying spells.
___18. I felt sad.
___19. I felt that people dislike me.
___20. I could not get "going."
Appendix F: Informed Consent Form

By signing this form, I am indicating that I understand the following statements as they pertain to myself, and that I will be voluntarily participating in a research study conducted by Bret M. Sawyer, Ed.S. entitled "An Individual's Phenomenological World as a Cognitive Mediator of Stress Response in People Living With AIDS." I am aware that the purpose of this form is to protect me from undue harm that may result from this research endeavor, and to alert me as to my rights regarding participation.

1- I acknowledge that I am participating in a research endeavor.

2- I am aware that the purpose of this research endeavor is to help counselors better understand the psychological processes surrounding HIV. I am aware that my participation in this study will require me to fill out a demographic questionnaire, an instrument which measures how I see my HIV-diagnosis and my life, and an instrument which measures depression. The purpose of these tests and what each test is measuring has been explained to me to my satisfaction.

3- I am aware that I am to be paid five dollars for filling out the questionnaire, and that I have two options regarding payment. Option number one will allow me to receive the five dollars immediately after completing the questionnaire, if, and only if, the test administrator is allowed to examine the questionnaire quickly to determine if all the questions have been answered. I will then be allowed to witness the instrument being sealed in an envelope. The second option would allow me to seal the envelope immediately after taking the questionnaire so that the test administrator will not see the questionnaire at all; however, I realize that I will need to place my address on the outside of the envelope so that the check can be mailed to me later.

4- I am aware that if I experience any adverse feelings or reactions as a result of my participation in this study, that counseling can be, at my request, provided for me by the researcher. I am aware that I can contact Bret M. Sawyer at the Mini Mental Health Center (828-9911) for counseling.

5- I am also aware that I may contact Dr. Victoria Foster at The College of William and Mary (804-221-2338) with any question related to the research design.

6- I am aware that my participation is voluntary, and that I may refuse, at any time, to discontinue participation without penalty, but that I will not be paid.
7- I am fully aware that steps will be taken to protect my anonymity and confidentiality. The researcher has explained to me that my test scores will be coded with the last four digits of my social security number.

8- I am aware that if I am interested in attaining the results of this study, I have the option of contacting Bret M. Sawyer at the Mini Mental Health Clinic (828-9911).

9- At this time, I acknowledge that I have been given an opportunity to ask any questions concerning this research endeavor.

10- A copy of this informed consent form will be given to me for my own records.

Participants Signature: _______________________

Date: _______________________

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Appendix G: Theoretical Model

Disease Stage

Primary Control
Sense of Self-Efficacy as Measured by the PHCS

- .05
- .08
- .53

Event -> Psychological Make-Up -> Perception of Event -> Psychological Outcome
(# of events) (PHC and SOC) (How much stress the participants feel the event produced) (depression) (CES-D)

-> Sense of Coherence as measured by the SOC scale

Secondary Control

- .09
- .49
- .27

Time Since Diagnosis
Bibliography


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Vita
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