

**Spirituality, Internalized Homonegativity, and Medication Adherence
among Gay Men Living with HIV/AIDS**

BY

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DISSERTATION

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This dissertation is dedicated to the loving memory of my mother, Sharon Marie Oltean.

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APO

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LIST OF ABBREVIATIONS

ARIH	AIDS-Related Internalized Homonegativity
ASO	AIDS Service Organization
CDC	Center For Disease Control
DSES	Daily Spirituality Experiences Scale
HAART	Highly Active Antiretroviral Treatment
HIV+	Human Immune Deficiency Virus Positive
HIV/AIDS	Human Immune Deficiency Virus/ Acquired Immunodeficiency Syndrome
IHI	Internalized Homonegativity Inventory
LGBT	Lesbian, Gay, Bisexual, and Transgendered
MCC	Metropolitan Community Church
MEMS	Medication Event Monitoring System
	LIST OF ABBREVIATIONS (Continued)
MSM	Men Who Have Sex With Men
PLWHA	Person Living With HIV/AIDS
RHS	Reactions to Homosexuality Scale
RNHAI	Revised Nungesser Homosexuality Attitudes Inventory
TPAN	Test Positive Aware Network

SUMMARY

The purpose of this study was to gain preliminary evidence of the utilization of spiritual coping to promote better adherence to HAART medication regimens for HIV+ gay men. More specifically, this study focused on an examination of spirituality as a potential moderator between internalized homonegativity and HAART medication adherence.

Although this study yielded results that were generally consistent with the existing literature for internalized homonegativity, some possible explanations for the lack of associations between internalize homonegativity to key variables in the study could be related to sample homogeneity and a misspecification of internalized homonegativity's role when applying the theoretical framework guiding this study. Further, it is difficult to interpret these lack of associations based on an absence of direct comparisons to similar existing research utilizing the same variables as this study.

A general lack of association between spirituality and other variables in this study was observed. Examination of the research on the DSES indicated that gender might be a potential explanation for lower scores in this sample. Additionally, lack of associations between spirituality and other variables could be due to a misspecification of spirituality's role when applying the theoretical framework guiding this study. When compared to the average results described above in Underhill (2011), spirituality appears to be a present to a much lesser degree in this sample. Further, it was suggested that spirituality could act as a moderator between internalized homonegativity and HAART medication adherence. Subsequently, spirituality did not moderate the relationship between internalized homonegativity and HAART medication adherence. Compared to

SUMMARY (Continued)

studies described in Underwood (2011), it appears that spiritual coping is utilized to a lesser degree in this sample. It is unclear if other variables, unaccounted for by this study, have impacted spirituality's association to other key variables in this study.

The results of the current study partially mirror these findings in Lu et al (2007) with regards to a gradual decreasing of self-reported successful HAART medication adherence reported. Although a statistically significant association of the dependant variable was only located in one of the three adherence questions (with internalized homonegativity), this trend may help explain a weak but statistically significant association between internalized homonegativity and HAART medication adherence for the 1 month fallback question.

I. INTRODUCTION AND CONCEPTUAL FRAMEWORK

A. Background

As HIV/AIDS nears its third decade, medical science is still without a cure. Fortunately, the advent of highly active antiretroviral therapy (HAART) in the mid-90s has led to the steady decline in HIV/AIDS related deaths (CDC, 2006). HAART medication therapy is now the main treatment for HIV/AIDS. Although it has made life for people living with HIV/AIDS (PLWHA) more manageable, HAART medication therapy can be costly, lifelong, and often difficult to maintain.

The complex nature and numerous barriers to HAART medication adherence have been established within the literature. Common barriers associated with lack of adherence to HAART medications are depression (Catz, Kelly, Bogart, Benotsch, & McAuleffe, 2000; Holzemer et al., 1999), experienced and anticipated severity of side effects (Duran et al., 2001; Max & Sherer, 2000), and perceived stress toward HIV and limited coping mechanisms (Chesney, 1997). Further, disruptions in one's medication adherence, in the case of PLWHA, may result not only in the worsening of an individual's health condition, but the potential transmission of a fatal drug-resistant strain of the HIV virus (Singh, 1999; Kramer, Ironson, Schneiderman, & Hautzinger, 2006; Murphy, Johnston-Roberts, Martin, Marelich, & Hoffman, 2000; Sidate, Fairley, & Grierson, 2007).

In addition, it has been documented in the social science literature that internalized homonegativity constitutes an additional series of roadblocks to success in HAART medication adherence for gay men. Internal homonegativity, historically

referred to as internalized homophobia, can be considered the negative anti-homosexual attitudes experienced (both physically and emotionally) toward one's own sexual orientation and identity (Hudson & Ricketts, 1980), as well as the key conceptualization of stress unique to the lesbian and gay population (Meyer, 1995). Discussed below, internalized homonegativity complicates identity development, physical and emotional health, as well as has influence on self-destructive behaviors.

Meyer (1995) found a significant relationship between internalized homonegativity and demoralization, guilt, sex difficulties, suicide and AIDS-related traumatic stress response. Additional health outcome research has identified associations with increased rates of depression and low self-esteem (Malyon, 1982), high levels of distrust and loneliness (Finnegant & Cook, 1984). Further, Ross et al (2001) suggested that internalized homonegativity may be a valid antecedent of a range of chronic and self-destructing behavior problems.

Aside from the well-documented implications of internalized homonegativity, HIV/AIDS challenges the social, psychological, and often spiritual health of gay men. Further, PLWHA often find themselves in search of meaning, purpose, and significance in life. Findings from studies conducted on chronic life-threatening illnesses, such as heart disease and cancer, have indicated that individuals turn to various forms of spirituality to cope (Demi, Moneyham, Sowell, & Cohen, 1997; Dunbar et al, 1998; Miller & Thorensen, 2003).

Spirituality as a coping style for chronic illnesses has been discussed at length in medical research. Ironson (1990) indicated that patients with generally high stress lives had a significantly greater risk of early HIV disease progression compared to those with

less chronic stress. Plante and Sherman (2001) support these findings by indicating that religious and/or spiritual activities may affect the course of HIV disease through similar mechanisms related to the impact of stress on the immune systems ability to keep HIV from progressing into AIDS. Discussed in the conceptual framework section, these mechanisms of spiritual coping, as they relate to HIV/AIDS and gay men, will be conceptualized using Lazarus and Folkman's (1984) stress, appraisal and coping framework.

B. Statement of the Problem

Despite preliminary evidence from medical research findings, social science research has neglected to establish significant associations between internalized homonegativity, HAART medication adherence, and spirituality within the HIV+ gay male population. However, based on the literature, there is a theoretical link between these concepts.

Discussed in greater detail in the literature review, the documented negative emotional and behavior ramifications resulting from internalized homonegativity (e.g., stress, depression, isolation, suicidal ideation, substance abuse, etc.) emulate and/or mimic common emotional and behavior barriers documented in poor HAART medication adherence within this population. Conversely, evidence on common protective factors associated with higher levels of spirituality (e.g., hope, well-being, optimism, decreased substance abuse and suicidal ideation, etc.) emulate or mimic positive emotional and behavioral factors associated with greater HAART medication adherence within this population.

Thus, there appears to be grounds for a theoretical link between higher levels of spirituality impacting greater HAART medication adherence, even for individuals suffering from the negative ramifications of internalized homonegativity. Examinations of this theoretical link are absent from the social science literature.

C. Purpose of the Study

HAART medication adherence for gay men is complicated and plagued with multiple physiological and psychological barriers. The purpose of this study was to gain preliminary evidence to support further research on the utilization of spiritual coping to promote better adherence to HAART Medication regimens for HIV+ gay men. This was achieved by focusing on spirituality, and its impact on the relationship between internalized homonegativity and HAART medication adherence in gay men living in the greater metro area of Chicago, Illinois.

D. Research Questions Related to the Study's Purpose were:

1. Is there a relationship between internalized homonegativity and HAART medication adherence among gay men?
2. Is there a relationship between internalized homonegativity and spirituality among gay men?
3. Is there a relationship between spirituality and HAART medication adherence among gay men?
4. Does spirituality moderate a relationship between internalized homonegativity and HAART medication adherence among gay men?

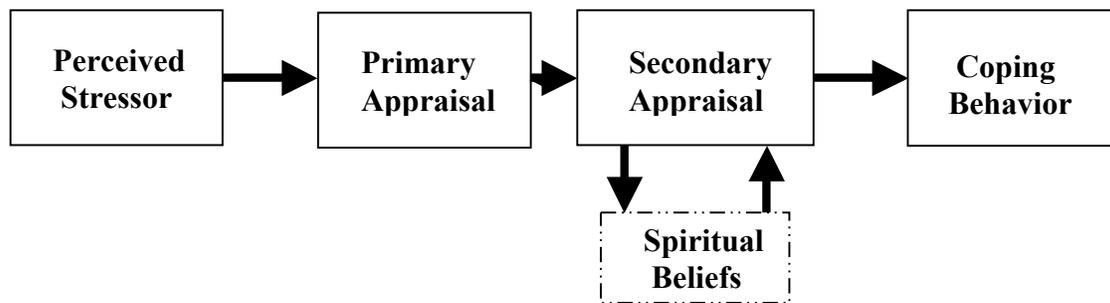
E. Conceptual Framework

1. **Stress, appraisal, and coping theory**

This study used Lazarus and Folkman's (1984) classic model of stress, appraisal, and coping to conceptualize spirituality and its role in the coping process for HIV+ gay men. These authors maintained that the underlying assumption of their model (i.e. how we act and feel depends on what we think) is the same premise discussed and promoted in the work of cognitive-behavioralists such as Beck, Ellis, Goldfried, Meichenbaum and Novaco (Lazarus and Folkman, 1984).

Figure 1

Diagram of the Stress, Appraisal, and Coping Process



According to this model, stress is defined as a “relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her resources and endangering his or her well-being” (p. 21). These authors maintain that the impact of any particular stressor, and any particular choice in coping behavior, are determined through the individuals’ unique twofold cognitive appraisal process, as displayed in the diagram above.

Lazarus and Folkman (1984) define a general cognitive appraisal process as an evaluation of one’s own skills and abilities to deal with any perceived stressor. This appraisal process occurs in a twofold path: a primary appraisal, which consists of the initial judgment towards an encounter as either irrelevant, benign-positive, or stressful;

and a secondary appraisal, in which a judgment concerning what might and can be done to cope with the encounter using one's own repertoire of coping abilities.

Lazarus and Folkman (1984) define coping, the final component of their theory, as a “constantly changing cognitive and behavioral effort to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Pg. 141). Lazarus and Folkman (1984) indicate that coping can be characterized by numerous forms of defensive strategies and/or problem-solving strategies implemented according to that particular individual's relationship to their environment at a particular time.

The secondary appraisal process of this theory, and its emphasis on individual beliefs, was central to the conceptualization of spirituality and its role in coping in this study. Lazarus and Folkman (1984) indicated that our beliefs, either personally formed or passed on through culture, determine what we think is true, regardless of whether or not one likes or approves of it. Furthermore, Lazarus and Folkman (1984) maintained that our beliefs, and their influence on our cognitive appraisals, are critical to our ability to appraise negative events differently; this is evident in the way that people react differently to the same event, such as receiving a negative prognosis, or witnessing a natural disaster. With regard to the prominence that these beliefs may play in some individual's lives, Kenneth Pargament, a researcher focused on the topic of psychology and spirituality, states that “religion, to many people, is first and foremost a way of thinking,” (Pargament, 1997, p.36).

Spiritual beliefs, a type of existential belief in nature, such as faith in God, fate, or some general natural order in the universe, allow people to create meaning and add

structure to their lives. These beliefs help to heal damaging experiences, and to remain optimistic in times of struggle (Lazarus and Folkman, 1984). Additionally, Pargament reports that positive spiritual beliefs may provide individuals with a greater sense of control (1997). A greater sense of control can lead to an increased ability to adjust to negative experiences, such as living with HIV/AIDS.

In a study on patients dealing with a terminal cancer diagnosis, Hayden and Przybysz (1995) found that a significant portion of their sample found comfort in religious explanations as an attempt to resolve their questions regarding their illness. Manfredi and Pickett (1987) and Koenig et al. (1992) determined that religion was a primary coping style commonly utilized among hospitalized elderly struggling with chronic illnesses. Simoni, Huang, Goodry, & Montoya (2005) state that spirituality may be an especially available and compelling resource in cases in which the usual human coping resources are ineffective or are threatened, as in the face of potentially fatal diseases like HIV/AIDS.

2. Definitions of key concepts

The following section will provide a conceptual definition for each key variable in this study. These variables will later be operationally defined in the methodology section.

a. Internalized homonegativity

An independent variable, is characterized here as the negative attitudes experienced (both physically and emotionally) toward one's own sexual orientation and identity (i.e. inevitably internalized anti-homosexual views). Discussed

further in the literature review, internalized homonegativity is a modified conceptualization of the concept internalized homophobia.

b. Spirituality

An independent variable, characterized here by the personal, subjective, and internal expression of faith (i.e. efforts to consider metaphysical or transcendent aspects of everyday life). Discussed further in the literature review, this study's use of spirituality will be considered individualistic, and non-denominational.

c. HIV medication adherence

A dependent variable, is defined here as a consumption pattern of physician prescribed and regimented HAART medication(s).

II. REVIEW OF THE RELEVANT LITERATURE

A. **Introduction**

Since the onset of the disease, medical and behavioral researchers have focused on the physical, psychological, social, and (to a lesser extent) spiritual ramifications of HIV/AIDS. Additionally, researchers have provided significant evidence regarding the numerous factors that contribute to an individual's ability to successfully manage their illness with HAART medications. However, with respect to HIV+ gay men, spirituality, as a coping style as well as means to enhance HAART medication adherence, has been neglected.

Following a description of epidemiology and prevalence of HIV/AIDS in the gay community, this section will next discuss an overview of the research on internalized homonegativity as it relates to gay men, and those coping with HIV/AIDS. Research findings related to HAART medication adherence, and barriers to adherence with relation to HIV+ gay men will be discussed. Next, an examination of spirituality in the gay community, as well as gaps and preliminary evidence in the support of the utility of spiritual coping by HIV+ gay men will be presented. Last, a summary will discuss the limitations and opportunities in scope of social science research with respect to these topics, and the intentions of this study in addressing them.

1. **Prevalence of HIV/AIDS among gay men**

Throughout the majority of this epidemic, men who have sex with men (MSM) have accounted for over half of the entire incidence of HIV/AIDS in the United States. MSM's experienced a decrease in infection rates from the late 1980s to the mid 1990s, however, their infection rate has began to climb again (Hall et al, 2008). More

specifically, according to the Centers for Disease Control and Prevention (CDC), between 2003 and 2006, the estimated number of HIV infections per year has increased annually among men who have sex with men (MSM) from roughly 15,400 to 17,465 individuals over the four year span (2006). In contrast, HIV infections remained stable among heterosexual adults and adolescents from 4,547 to 4,558 (CDC, 2006). With regards to the number of deaths related to HIV/AIDS, the outcomes from the CDC prove more optimistic. The CDC reports that HIV/AIDS related deaths have decreased among MSM between the years of 2003 and 2006 from 15,700 to 16,000 (CDC, 2006).

Since the onset of the ‘syndrome’ in 1981, a virus that later became more accurately identified as HIV/AIDS, the LGBT communities have been leaders in addressing the many socio-political challenges inherent to this stigmatized epidemic. Their consistent efforts continue to call for the reframing of guidelines for prevention, timely advent of new treatment medications, and improvements in the general health care of people with HIV/AIDS. Additionally, the advent of highly active antiretroviral therapy (HAART) in the mid-1990’s has led to this recent trend in declining HIV/AIDS related deaths (Woliski, Valdiserri, Denning, & Levine, 2001).

Despite these achievements, an end to this epidemic is still not in sight. For complex reasons beyond the intentions of this study, HIV/AIDS continues to take a toll on the MSM population, as well as the world. Although HAART has successfully extended the lives of many, these treatments can be costly, lifelong, and often difficult to maintain. Without proper adherence the production drug-resistant strains can impose yet another variable impacting the lives of these individuals.

B. Research on Internalized Homonegativity and Gay Men

1. Internalized homonegativity

a. Internalized homophobia VS internalized homonegativity

Discourses on the concept of internalized homophobia, discussed below, appear in the literature as early as the 1970's. Throughout the span of several decades, this concept has taken on different meanings within the social science literature. Following a brief discussion of the origins of the term internalized homophobia, the following section will discuss the rationale behind why this study will use the alternate term internalized *homonegativity* in place of internalized homophobia.

Weinberg (1972) pioneered the term *homophobia* to describe a two-fold phenomenon in heterosexuals as “the dread of being in close quarters with homosexuals” and its counterpart impact in gay persons as, “self-loathing” (p.4). For the first time, social science discourses began to focus on the impact of the social environment on the emotional well-being of lesbians and gay men in the 1970s (Herek, 1984). These studies emphasized the pejorative impact that internalized homophobia had on the self-identity and sexual identity development in nearly all gay and lesbian persons’ (Forstein, 1988; Gonsiorek, 1988; Loulan, 1984; Malyon, 1982), as well as offered preliminary suggestions for therapeutic interventions. Over time, however, this term garnered criticism for its exclusive focus on phobias and fears as motivators for negative feelings and emotions against homosexuality.

Objections to homosexuality, and the emotional damages suffered, are not solely based on fears, but rather real hatred, or prejudice (Hudson & Ricketts, 1980). These

objections can manifest from disparaging governmental, cultural and/or religious laws customs, and values. Hudson & Ricketts (1980) suggest that research should use the term homonegativism and/or homonegativity to describe this phenomenon. These terms provide a more inclusive label for the negative attitudes toward homosexuality as a whole, regardless of their source (such as individual, group, and/or institution).

b. Empirical research on internalized homonegativity

Despite a significant amount of literature focused on the concept of internalized homonegativity and the validity and reliability developed for its measure (discussed later), larger-scale empirical studies and evidence of its ramifications on gays and lesbians are very limited. Further, research measuring the proportions of gays and lesbians experiences of internalized homonegativity, its potential for change over time or consistency, as well as its impact on gender, ethnicity and generational differences are rare (Shidlo, 1994).

The inherent difficulty in sampling ‘hidden’ groups such as gays and lesbians has been well documented. Furthermore, Malyon (1982) posits that individual emotional predispositions, coming-out experiences, perceived levels of acceptance and safety, societal tolerance towards gay and lesbians based on region of residence, including ethnicity and religious attitudes, social class and education level may be differentially associated with homonegativity. Additionally, familial belief factors such as parents, siblings, and significant others are also likely to affect levels of internalized homonegativity (Nungesser, 1983).

2. Impact of internalized homonegativity on gay men

a. **Internalized homonegativity and identity development in gay men**

The primary psychological task of adolescence is that of identity formation (Erickson, 1950). It has been well established that identity develops in an interpersonal context, starting at a young age. Further, an adolescent requires extensive opportunities to engage in experimental psychosocial behavior. Primary ties of dependency to parents are then transformed, through maturation and experience, into erotized and empathic attachments to peers (Malyon, 1982). Optimal circumstances for youth provide psychological and social conditions that promote the evolution of identity into the capacity for mature intimacy.

According to Erickson (1950), the peer group provides the primary social context for this process. Peer group validation is of fundamental importance in the development of autonomy and self-esteem. Acceptance within peer groups is often achieved through commonalities and/or conformity, while differences, especially stigmatized ones, commonly result in alienation. One's freedom to engage in peer interactions that incorporate the expression of needs, values, interests, and proclivities are of critical importance to the solidification of identity.

However, peer group norms and prevailing social attitudes are not compatible with the fixation of same-sex erotic and intimate capacities, especially during the latter aspects of the adolescent era. Thus, according to Maylon (1982), the already complex developmental task of forming an identity is further complicated for the homosexual adolescent, due to the conflict between cultural expectations and differing psychosexual desires (i.e., same-sex). Homosexuality is thus shaped by a heterosexual socialization

process (Maylon, 1982; Nungesser, 1983). Stigmatized and/or not-encouraged interests will commonly lead to an atypical adaptation in gay adolescents.

The typical gay adolescent's psychosocial environment, in which identity is formulated, is not appropriate to psychosexual congruency. Instead, they're encouraged to obtain peer-group validation through the development of a false identity. This is achieved by the suppression of homoerotic feelings and often hidden behind a heterosexual persona. This results in the suppression of elements of the self-concept and the capacity for legitimate intimacy. Further, elaborate psychological defenses become utilized to maintain a tenuous identity. Identities shaped by internalized homonegativity often turn to psychological distress and destructive coping styles due to the pain of the dissonance between one's ideal and one's reality and the fear of being seen or exposed as undesirable in the eyes of others (Allen & Olsen, 1999). Additionally, Allen and Olsen (1999) maintain that this dissonance has been frequently associated with the dysphoric affect of shame.

b. Internalized homonegativity and mental health in gay men

Meyer (1995) describes internalized homonegativity as the conceptualization of a minority stressor. He stated that, "minority stress arises not only from negative events but from the totality of the minority person's experience in dominant society. At the center of this experience is the incongruence between the minority person's culture, needs, and experience, and societal structures," (Meyer, 1995). Meyer supports his theory with a large-scale study of 741 gay men in New York. Meyer found a significant relationship between internalized homophobia and five measures of

psychological distress. These were demoralization, guilt, sex difficulties, suicide and AIDS-related traumatic stress response.

Additional research related to the impact of internalized homophobia on the psychological health of lesbians and gays has been produced similar results to those reported by Meyer. These aspects of psychological health include increased rates of depression and low self-esteem (Malyon, 1982), high levels of distrust and loneliness (Finnegan & Cook, 1984), and under- and overachievement (Gonsiorek, 1988).

c. **Internalized homonegativity and self-destructive behaviors in gay men**

Research suggests that internalized homonegativity may be a valid antecedent of a range of chronic and self-destructive behavior problems which impact the gay male men were at greater risk of attempted suicide if they discovered their same sex preference early in adolescence, experienced negative “coming out” reactions from significant others, experienced violent and insulting victimization, and used drugs and alcohol to cope with problems relating to their gay identity. Additionally, research has indicated a strong relationship between measures internalized homonegativity and eating disorders, lower levels of sexual satisfaction, intimacy and commitment (Brown, 1987; Rosser, Metz, Bockting, & Buroker, 1997; Williamson and Hartley, 1998; Williamson, 1999).

C. **Research on HAART Medication Adherence and Gay Men**

1. **HAART medication and adherence: An Overview**

Since the mid 1990s, HAART has become the standard of care for treating HIV/AIDS (Sidat, Fairley, & Grierson, 2007). Antiretroviral therapeutic regimens have

successfully reduced mortality rates of many people living with HIV/AIDS (PLWHA) by suppressing the HIV virus, and enhancing the body's natural defense (increased CD4 counts) system (Adams, Maticka-Tyndale, & Cohen, 2003; Golin, Liu, & Hays, 2002; Liu et al, 2006; Ware, Wyatt, & Tugenber, 2006). HAART has transformed the nature of the AIDS epidemic into a chronic, and yet manageable disease (Sidate, Fairley, & Grierson, 2007). However, adherence to antiretroviral therapy has been the next major obstacle to remaining in good health for these individuals (Singh, 1999; Liu et al, 2006).

Disruptions in one's medication adherence, in the case of PLWHA, may result not only in the worsening of an individual's health condition, but the potential development and transmission of a drug-resistant strain of the HIV virus (Singh, 1999; Kramer, Ironson, Schneiderman, & Hautzinger, 2006; Murphy, Marlich, Hoffman, & Steers, 2004; Sidate, Fairley, & Grierson, 2007). A patient must ingest at least 90% to 95% of their prescribed doses on a consistent basis to maintain the suppression of the HIV virus (Liu et al, 2006; Townsend, Jackson, Smith, & Wilson, 2007). Disruptions in medication adherence permits the virus to resume its normal rapid replication process in the infected individual's body, which then allows for the production of potentially communicable resistant mutant strains that are no longer responsive to available antiretroviral drugs (Murphy, 2004). Although a significant threat to public health, and the focus of much research, a precise estimate of adherence (or lack thereof) is difficult to pinpoint. In a systematic review of the literature on adherence to HAART, Mills and colleagues (2006) report that nonadherence rates for adults ranges from 33%-88%, depending on how it's defined and measured.

a. **Barriers to medication adherence for chronic illnesses**

There appears to be several factors that affect medication adherence regardless of type and associated illness. The first set of variables discussed here has to do with the treatment regimen itself. Logically, the more complicated the regimen, the less likely a patient is to follow it, regardless of age and educational level. Further, as indicated in Murphy, Roberts, Martin, Marlich, & Hoffman (2000), a negative relationship between adherence and increasing number of doses per day has been found across medications and diseases.

The second set of variables has to do with the factors related to the specific illness (Murphy et al, 2000). More specifically, noncompliance has higher associations with long-term prescriptions than with shorter-term prescriptions. Nonadherence among patients also appears to be more prevalent when an illness is chronic in duration, and the treatments are largely prophylactic in method.

According to Murphy et al (2000) a third set of variables have derived from patient specific characteristics. For example, depressed patients have been found to have poorer adherence than non-depressed patients (Carney, Freedland, Eisen, Rich, & Jaffe, 1995).

Also, variables related to the health provider and patient relationships with the health-care provider, adherence is improved (Hall, Roter, & Katz, 1988). Murphy et al (2000) maintains that when clients feel included in their treatment programming and decision making, they are more apt to adhere to their medications.

Research on the general associations between adherence and sociodemographics has yielded mixed results. Higher levels of education (Catz et al., 2000; Gifford et al.,

2000), age (Chesney, 1997; Duran et al., 2001), gender (Laine et al., 2000; Wenger et al., 1999) and substance abuse (Duran et al., 2001; Holzemer et al., 1999) have yielded inconsistent associations with adherence throughout the literature over time (Holstad, Pace, De, & Ura, 2006). To be discussed in further detail below, spirituality, although studied in relation to its impact on immune function, psychological well-being and adjustment to chronic illness and treatment, and general quality of life correlates, has been studied in relation to antiretroviral adherence at a minimum (Holstad et al., 2006).

b. Barriers to HAART medication adherence for gay men

Although researchers are currently working to find ways to reduce medication regimens barriers, such as developing drugs with fewer side effects, combining two drugs in a single capsule, developing longer lasting drugs, or developing drugs with no adverse interactions with food or other drugs, it is clear that HIV-infected patients will continue to face significant medication regimen adherence challenges regardless of sexual orientation (Murphy et al, 2000). However, the following section will discuss barriers to medication adherence specific to HIV/AIDS medications and gay men.

Catz et al. (2000) and Holzemer et al (1999) have identified depression as a significant barrier to medication adherence. As discussed above, internalized homonegativity leads to increased levels of depression in gay men, as well as feelings of demoralization, guilt, sex difficulties, suicide and AIDS-related traumatic stress response (Meyer, 1995). Second, a gay man's beliefs toward being HIV+ have been documented as a significant barrier to medication adherence (Chesney, 1997). The gay male community has historically accounted for the significant proportion of those infected with

HIV/AIDS. For decades, gay men have watched as their friends and family have died from HIV/AIDS, as well as struggled with medication regimens. Third, stigma and shame (Chesnesy, 1997), often influenced over time by the visually graphic media coverage of gay men dying in hospital beds, damning conservative religious television evangelists, and an uncaring political climate have led to increased internalized homonegativity and a decreased medication adherence. Lastly, limited coping mechanisms and community resources as a result of living in an oppressive society, though often varying depending on where geographically an HIV+ individual is located, have been associated with lower levels of adherence (Chesney, 1997).

Conversely, feeling a sense of positive personal well-being and meaning towards one's life had a positive association with adherence (Holzemer et al, 1999). Social support (Duran et al., 2001), self-efficacy (Catz et al., 2000; Gifford et al., 2000), positive relationships with one's care provider (Bakken et al., 2000) and adequate coping have also been associated with higher adherence (Singh et al., 1999).

Adams et al (2003) maintains that adherence rests on an individual's belief that life is inherently valuable, with the personal assessments of that value being determined through a combination of personal and cultural beliefs, environmental barriers, and expectations on medication effectiveness (i.e. a belief that HAART is priority, and will work at keeping them healthy now and in the future).

D. Research on Spiritual Coping and HIV+ Gay Men

1. Introduction to spiritual coping research

Research literature from a variety of disciplines (e.g., psychology, medicine, sociology, social work, gerontology, and education) contains an increasing

number of studies examining the association of religion and spirituality toward both physical and mental health. However, with regards to research on the utility of religion and spirituality as a therapeutic coping tool, significant differences between fields and disciplines can be observed.

Despite increased study, there remains considerable debate regarding the definitions of religion and spirituality (Lease, Horne, Noffsinger-Frazier, 2005). Given the abstract nature of these concepts, they are often criticized as overlapping and non-mutually exclusive. Characteristics inherent to religion may also be found in spirituality, and vice versa (Hill & Butter, 1995). For example, both spirituality and religion may involve a sense of personal transformation, an encounter with transcendence, or a search for ultimate truth or an ultimate reality that is sacred to the individual. However, Lease, Horne, Noffsinger-Frazier (2005) observed that research literature tends to regard religion as the institutional and doctrinal expression of faith. In contrast, spirituality has been observed leaning predominately toward beliefs, activities, and experiences referring to the personal connection to sacred beliefs (Hill & Pargament, 2003; Miller & Thoresen, 2003). This study focused on spiritual beliefs as described above by Miller & Thoresen (2003), which will be discussed in detail later in the methodology section.

According to Larson et al (1998) and Levin & Vanderpool (1992) respondents from all ages, genders, various religions, spiritualities, race and ethnic groups have been examined in a wide range of research investigating spirituality and its relationship to health outcomes. These studies, examining the influence of spiritual coping on physical health, often suggest that it can play both a positive and negative role.

2. **Spiritual coping and health outcome results**

a. **Neurological correlates to health outcomes and spirituality**

Medical researchers have established the indirect impact that spiritual factors have on physical health (Larson et. al., 1998). Positive emotional factors associated with spirituality (e.g., forgiveness, hope, contentment, love) may benefit an individual's health through their impact on neural pathways that connect to the endocrine and immune systems. Negative emotional states (e.g., anger and fear) can lead to arousal of the sympathetic nervous system (SNS) and the hypothalamic-pituitary-adrenal axis (HPA), systems involved in mobilizing the body's energy during stressful situations. A stress response in the body has been described as an excessive release of the neurotransmitter norepinephrine and of the endocrine hormone cortisol (Larson et al, 1998). Over time, this type of stress response can lead to inhibition of the immune system, increased risk of infection, increased blood pressure, impaired healing response, and increased risk of stroke and heart attack. Additionally, Thoresen (1999) and Larson et al. (1998) suggest that meditation, forgiveness, and certain religious and spiritual thoughts might reduce the arousal in the SNS and HPA increasing immune competence and restoring physiological stability.

b. **Psychological correlates to health outcomes and spirituality**

As is the case with many variables, psychological factors might also impact the relationship between spirituality and an individual's health. Pargament (1997) discussed various coping strategies that may help to facilitate the remediation of negative life events. Pargament discusses one's cognitive processes such as locus-of-

control beliefs (i.e., perception of personal control over events in one's life), their acceptance from other people or God, their beliefs regarding purpose and meaning to negative life events, and "optimistic explanatory style" (i.e., perceiving negative events in life as externally caused and situation-specific, and positive events as internally caused and typical) have also been considered as possible mechanisms and provide opportunities for future research (Pargament, 1997).

Larson et. al. (1992) provides empirical research investigating protective factors associated with spirituality and mental health. Their review of 139 research studies concluded that only 39% reported some associations to health at all, but of these, 72% were positive. Gartner's (1996) review of the literature found positive associations between spirituality and well-being, marital satisfaction, and general psychological functioning. These authors found negative associations with suicidal ideations, participation in criminal activity, and the misuse of drugs and alcohol.

c. **Behavioral correlates to health outcomes and spirituality**

The degree to which an individual's lifestyle incorporates activities related to their spiritual beliefs can also act as a mechanism through which spirituality and spiritual factors (mentioned above) have their positive affects. For example, a strong sense of commitment and attachment of sacred beliefs can lead a person to adopt better health-related behaviors, such as refraining from smoking, alcohol and drug use, and risky sexual behaviors. For example, traditional religious groups that follow sanctioned behavioral lifestyles (e.g., Mormons and Orthodox Jews) tend to have a generally better health status than the population as a whole (Hill & Butter, 1995).

Social networking is one well-documented mechanism through which religion and spirituality may have beneficial effects on health (Hill & Butter, 1995). Many different sacred communities provide opportunities for fellowship, involvement in formal social programs (e.g., providing meals to the poor, running shelters), and companionship. Social networking within this capacity has been associated with a reduction in physical and emotional stressor (Hill & Butter, 1995), as well as increases opportunities for social support. Uchino, Uno, and Holt-Lunstad (1999) provides evidence suggesting that social support from communities of like spiritual beliefs can influence health outcomes (e.g., cardiovascular and infectious diseases) through a number of physiological processes such as cardiovascular, neuroendocrine, and immune functions.

d. Negative correlates to health outcomes and spirituality

Seybold & Hill (2001) makes the argument that a significant amount of research on the divine in medical research is biased, with the assumption that religion and spirituality are either neutral or beneficial. Further, they maintain that religion and spirituality can be pathological. Negative religious and/or spiritual experiences are often associated with the consequences of authoritarianism and blind obedience indicative of some forms of religious practice. Additionally, an adherence to strict literal translations of text has been associated with negative emotional and behavioral consequences, particularly when individuals cannot maintain the degree of adherence deemed necessary and/or appropriate. More specifically, these consequences are associated with child abuse and neglect, community conflict, violence, and false perceptions of control (Paloutzian & Kirkpatrick, 1995).

Additionally, Pargament (1997) maintains that religiously or spiritually motivated factors impacting physical and mental health tend to occur when an individual feels that he or she is acting in accordance with direct communication with their God (e.g., “God’s will”), or deferring their personal responsibility to that of their perceived God’s orders (e.g., “the problem is now in God’s hands...”). In addition, the harmful forms (e.g., discontentment or anger with God, clergy, or a congregation) correlated with impaired mental health and poorer resolution of negative life events (Pargament, 1997). However, taken as a whole, the literature suggests a general mixed effect of religion and spirituality on mental and physical health.

3. Research on spirituality, spiritual coping, and HIV+ gay men

a. Spiritual coping and HIV/AIDS

Despite a growing interest on this topic as a whole, the absence of research studies on spiritual coping is particularly more apparent in HIV/AIDS research (Simoni et al., 2002). Further, Simoni et al (2002) indicates that the limited research on spirituality among individuals with HIV is predominantly qualitative and based on samples of gay white men. Larger scale, cross-cultural and other comparison research are rare.

Despite these limitations, Folkman et al. (1994) maintains that studies indicate that HIV is associated with greater utility of religiosity and spirituality among HIV+ gay men, and their negative partners. Spirituality may support the achievement of an HIV+ individual’s ability to maintain hope in the midst of HIV and AIDS related illness (Carson, Soeken, Shanty, & Terry, 1990). Additionally, a spiritual belief system can serve to maintain a positive attitude, lessening the fear of death in more advanced AIDS

cases (Hall, 1994). Spirituality may also prove useful in diminishing the psychological distress associated with internalized homonegativity and HIV/AIDS in gay men (Meyer, 1995). Regardless of these findings, social science research often ignores spirituality and religion as significant coping tools (Johnson & Spilka, 1991).

Multiple factors may account for this neglect in research. Both researchers and clinicians tend to be less religious than the general population (Lukoff, Lu, & Turner, 1992). Religion seems to be taboo in research and health care settings (Weaver et al., 1998). One possible explanation for its avoidance can be that some clinicians fear imposing a system of beliefs or values onto their patients (Jenking & Pergament, 1995). Lastly, the construct of spirituality is often considered vague, difficult to operationalize and therefore difficult to build empirical support for specific measures. Simoni et al. (2002) suggest that researchers may not want to be associated with the less empirical or “softer” science.

b. Spirituality and gay men

Documentation of the gay community’s exploration toward several spiritual and religious avenues (such as Dignity for Catholics) practices or new spiritualities altogether (such as shamanism, and earth-spirit faiths, etc) are emerging in the social science literature. However, the positive relationship of spirituality and religion to mental health is less clear for gay individuals when compared to the literature describing their heterosexual counterparts. The following section will discuss this seemingly contradictory relationship between spirituality, religion and sexual minorities.

As indicated in the limited literature on this topic, the integration of a sexual identity with a traditional religious faith is typically portrayed as a struggle. Gay men are

typically left abandoning or being abandoned by their faith in the process of developing and securing an openly gay identity. These individual's struggles often overlap those of the organized religions themselves, particularly over the ordination of openly gay and lesbian clergy and support for same-sex marriages. Difficulties from integrating concepts of spirituality and sexual orientation don't only play out externally and/or socially. Lease et al. (2005) maintain that many gay individuals do report internal conflict between their religious faith and sexual orientation. Further, these conflicts are associated with increased shame, depression, suicidal ideation, and difficulty accepting a positive gay identity (Schuck & Liddel, 2001). Gay individuals who are members of faith communities that frame homosexuality in a negative light face significant distress when attempting to reconcile the two identities (Mahaffy, 1996; Thumma, 1991), often furthering a sense of learned shame, hopelessness, and damnation. As discussed earlier, these are characteristics commonly associate with higher levels of internalized homonegativity. Given the fact that the majority of mainline Protestant, Catholic, Islamic, and Judaic traditions strictly prohibit any desires or behaviors of homosexuality (Clark, Brown, and Hochstein, 1990). When homosexuality is not outwardly condemned in traditional religious activities, it is rarely embraced as a viable sexual orientation. Gay parishioners and their relationships typically remain unacknowledged and invisible (Barret & Barazan, 1996).

In additional, some religious messages perpetuate that mythos that the HIV/AIDS crisis was caused by God's divine retribution for homosexuality (Chilton, 1987). Because gay men and intravenous drug users were the first populations to enter societal awareness as AIDS sufferers, this diseases has never fully escaped the moral judgments

and scrutiny. Lack of immediate response to current minorities (non-gay men) impacted by HIV/AIDS has exemplified an ever-present sense of degradation to this disease by the U.S. government. Researchers have reported that many patients encounter stigmatizing experiences among religious congregations because of such attitudes (Fortunato, 1987).

c. **Spiritual coping and HIV+ gay men**

In response to heterosexist, hetero-normative, and/or unwelcoming religious institutions, HIV+ gay men, and lesbian, gay, bisexual and transgendered (LGBT) affirming faith communities have evolved. Either by altering traditional denomination's doctrine to be inclusive (e.g., Dignity for LGBT Catholics) or creating entirely new denominations (from traditional religious ones) specifically serving the LGBT community (e.g., Rev. Troy Perry and the Metropolitan Community Church), these communities are present in most major cities in America. As a result of these and other movements toward greater inclusiveness, LGBT individuals are experiencing increased opportunities (perhaps unlike any other point in history) for integrating their sexual orientation with their religious or spiritual beliefs. Although research and anecdotal literature have explored the conflict between sexual and religious/spiritual identity, minimal empirical research has investigated the role of affirming faith group experiences on the spiritual and mental health of gay men.

As discussed briefly above, the literature indicates that many LGBT individuals, including HIV+ gay men, have reported negative experiences with their faith groups. These experiences have led to an elimination of formal religion (such as church/temple attendance) from their lives (Beckstead, 2001; Goodwill, 2000; Schuck & Liddle, 2001). Unfortunately, spirituality as a coping style is also eliminated.

However, many who leave their traditional faith find spiritual growth by redefining their spiritual and/or religious beliefs and practices. From this, LGBT and HIV+ gay men are provided with a sense of spiritual awakening. Likewise, Lease et al. (2005) indicate that LGBT and HIV+ gay men who are lucky enough to find affirmation in their formal/traditional faith groups might feel that affirmation enhances both their spirituality and their psychological health (particularly when combating negative feedback and/or homophobia from the larger society).

Given the developing distinction between organized religion and spirituality, it is necessary to consider them separate constructs as they relate to psychological health (Lease et al., 2005). Because spirituality can be seen as distinct from religion, developing a sense of spirituality separate from more formalized experiences with their faith groups may mediate the effect of negative religious experiences on the psychological health of these individuals (O'Neil & Ritter, 1992). This can prove particularly useful and advantageous for individuals living with HIV/AIDS that have felt that a relationship with a God or higher power was no longer an option for them, and not able to benefit from spiritual coping mechanisms.

E. Summary

Although evolving behavioral and medical treatments such as HAART medication therapy have made life for PLWHA more manageable, this disease nears its third decade without a cure in sight. The complications that internalized homonegativity have on identity development, physical and emotional health, as well as influence on self-destructive behaviors has been documented. Additionally, the complex nature and numerous barriers to HAART medication adherence have been documented within the

literature as well. Preliminary associations between both internalized homonegativity and HAART medication adherence for HIV+ gay men have also been established. Spirituality as a coping style for chronic illnesses has been discussed at length in medical research while the prevalence of spirituality within the gay community have gained increased attention in the social science literature.

Despite preliminary evidence from medical research findings, social science research has neglected to establish significant focus on the associations between internalized homonegativity, HAART medication adherence, and spirituality within the HIV+ gay male population. However, theoretical associations can be drawn. As discussed above, many of the documented negative emotional and behavior antecedents resulting from internalized homonegativity mirror common emotional and behavior barriers found in poor HAART medication adherence within this population. Conversely, evidence on common protective factors associated with higher levels of spirituality mirror positive emotional and behavioral factors associated with greater HAART medication adherence within this population. Thus, there appears to be grounds for a theoretical link between higher levels of spirituality impacting greater HAART medication adherence, even for individuals suffering from the negative ramifications of internalized homonegativity. It is this theoretical link which creates the motivation for this study, and which is absent in this form from the social science literature.

III. METHODOLOGY

A. **Research Design and Method of Investigation**

This study examined associations between spirituality and its potential moderating effect on the relationship between internalized homonegativity and HIV/AIDS medication adherence in HIV+ gay men living in the Chicago metro area. This study made use of an exploratory-descriptive survey design. Cross-sectional data were collected at one time per participant via a 30 minute self-reported anonymous survey completed on a secure website. The survey questionnaire was administered through a company called SurveyMonkey (a Web based application).

B. **Sampling Plan**

The individual target subject was a self-identified HIV+ gay man, taking HAART medications, and living in Chicago. Although the use of non-probability convenience sampling could leave this study open to potential external validity problems, it provided an appropriate method given the exploratory and preliminary nature of this research study. These validity concerns are discussed at length in the limitations section. Future research studies should make use of randomized sampling measures.

Additionally, convenience sampling provided the most feasible option granted the financial limitations of this project. Also, lesbian women were excluded from the focus of this study do to their significantly lower representation of the overall infection rate of HIV/AIDS.

The strategic placement of advertisements (post card size piece of paper) in local pharmacies, bars, and businesses provided a feasible recruitment method to access, locate and recruit a significant amount of appropriate subjects for this study. These

advertisements contained a brief description of the study, a message regarding their anonymity, and the URL web address to the survey.

Based on an a-priori sample size for multiple regression power analysis described by Soper (2008), a study using an alpha level of 0.05, with 2 predictor variables (IH and Spirituality), and an expected effect size of .80, would require a sample of at least 200 participants.

According to Thomas Klarquist, a Chicago based board certified internal medicine physician and member of the American Association of HIV Medicine, it was decided that a Bioscript Pharmacy located at 912 W. Belmont was the optimal pharmaceutical business with a reputable history of collaboration with local AIDS service organizations within the greater metro area of Chicago as a sight for advertisement. This pharmacy is estimated to provide access to medication and medication management education to hundreds of HIV+ individuals. Bioscript provided access to subjects through the dissemination of over 50 post card advertisements.

To promote greater variance with regard to the sample population characteristics of race and socioeconomic background, as well as to reach people who receive their medication from alternative pharmacies and/or agencies, recruitment fliers were placed in the following venues located in Chicago's historically "gay" neighborhoods of Lakeview and Andersonville. These venues; (1) gay-affirming religious institution of Achurch4me Chicago MCC (Protestant), (2) nightclubs, bars, restaurants, and bookstores located in these areas such as Big Chicks Lounge (caters to younger male clientele), Circuit (Latino night club), Bobby Love's (caters to older male clientele), Roscoe's Tavern (caters to younger clientele), Cellblock (caters to mix age range of clientele), Starbucks Coffee,

Caribou Coffee, Gerber Hart Library (LGBT historical achieve), The Unabridged Bookstore, (3) physicians, HIV social service, medical clinics, and community centers such as, private physician Dr. Tom Klarquist, The Center on Halsted, and Test Positive Aware Network (TPAN).

C. **Instruments**

The following section will operationally define the variables as well as describe the instrumentation involved in the measurement of variables.

1. **Independent variables**

a. **Internalized homonegativity**

The variable of internalized homonegativity was measured using the Revised Nungesser Homosexuality Attitudes Inventory (RNHAI). The RNHAI (Shidlo, 1994) is a 36-item self-report measure designed to assess internalized homonegativity in gay men. Shidlo (1994) revised the original Nungesser Homosexuality Attitudes Inventory (Nungesser, 1984) to update the terminology used in the wording of questions, as well as to tighten content validity, and discriminate validity. The RNHAI uses a 5 – point Likert-type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). All data are totaled, with half of the items requiring reverse scoring, and then divided by the number of items answered. The overall scores will range from 1 to 5, with 5 representing severe internalized homonegativity (Shidlo, 1994).

More specifically, higher scores per item (and overall) on this measure indicate a negative homosexual identity, with negative attitudes toward one's own homosexuality, desires, and holds negative attitudes and stereotypes of other homosexuals. Additionally, higher scores indicate that they are overly concerned with the appropriateness and

consequences of the presentation and expression of their homosexuality. In contrast, lower scores indicate that the individual feels positively about his homosexuality and other homosexuals while not being overly concerned or sensitive to the expressions and self-presentation of one's potential homosexuality.

The RNHAI has shown internal consistency, with alphas ranging from .90 (Shildo, 1994) to .92 (Dube, 2000). Concurrent validity has been demonstrated via a positive correlation ($r = .68$) between the RNHAI and the AIDS-related Internalized Homonegativity (ARIH) scale (Shildo, 1994). Construct validity has been negatively correlated with self-esteem ($r = -.56$), self-confidence ($r = -.42$), and social support ($r = -.25$). It has been positively correlated with psychological distress ($r = .56$).

This instrument has been considered one of the most comprehensive and empirically validated internalized homonegativity measures for gay men (Mayfield, 2001). The RNHAI has been used in the following psychological and behavioral health studies as the main measure of internalized homonegativity in relation to self-esteem and depression (Meyer, 1995), self-blame with respect to HIV (Nicholson & Long, 1990), as well as gay male sexual assault survivors (Gold, Marx, & Lexington, 2006).

Several studies have reviewed alternative measures of internalized homonegativity (Currie et al 2004; Mayfield, 2001; Shidlo, 1994). In Currie et al (2004), a comprehensive critical overview of available measures for internalized homonegativity, as well as other similar measures of homosexual stigma were discussed. Included in this meta-analysis were Shidlo's RNHAI, Mayfield's Internalized Homonegativity Inventory (IHI), and Ross and Rosser's (1996) Reactions to Homosexuality Scale (RHS). Currie et al (2004) indicated that these alternative measures show the potential to be equivocal to

the RNHAI; however, these instruments have only shown preliminary reliability and validity. Based on the RNHAI's proven reliability and validity over multiple usages, this study used the RNHAI as its measure of IH.

b. Spirituality

The Daily Spirituality Experiences Scale (DSES) was used as the instrument for assessing the variable of spirituality in this study. Developed by Lynn Underwood (Fetzer Institute, 1999), the DSES defines daily spiritual experiences as “the individual’s perception of the transcendent (God, the divine) in daily life and the perception of interaction with, or involvement of, the transcendent in life” (Fetzer Institute, 1999, p. 11). The DSES operationalized this definition in 9 key dimensions through 16 items, taking roughly two minutes to complete. These dimensions are as follows; transcendent connection, transcendent support, wholeness, transcendent sense of self, awe, gratitude, compassion, mercy, and longing for the transcendent. Being an exploratory correlational study, spirituality was not discussed within the context of the dimensions described above.

The DSES was designed to measure an individual’s utilization and connection to a sense of spirituality via daily experiences characteristic to those listed in the dimensions above. This measure reflects an individual’s religious history and/or spiritual beliefs while avoiding bias toward any particular religion or set of beliefs in the process. Further, Underwood (Fetzer Institute, 1999) maintains that it was designed to be a more direct measure of the impact of religion or spirituality on day-to-day life, for an ordinary person. In doing so, the author maintains that this instrument was designed to exclude extraordinary experiences (i.e., near-death, or out-of-body experiences).

According to Underwood and Teresi (1999), reliability and factor analysis from the different samples described above have provided support for the DSES. The instrument is highly internal consistent, with alphas ranging from .91 to .95 across samples. Preliminary construct validity was established by examination of the mean scale scores across socio-demographic subgroups, and preliminary exploratory factor analyses support a one-dimensional set (Underwood and Teresi, 1999).

All items are formatted in a Likert-type scale including never or almost never, once in a while, some days, most days, every day, and many times per day. Many times per day represented the lowest numerical category (1), and never or almost never, the highest (6). However, question 16 (In general, how close do you feel to God) is scored differently. Possible responses to this item include not close at all, somewhat close, very close, and as close as possible. These responses were scored from 1 to 4, with 1 representing as close as possible, and 4 representing not close at all. The score for each question is summed to represent a total score. Total scores could range from 16-92, with the lowest scores representing a greater determination of one's utilization of spiritual experiences in their daily life (Loustalot, Wyatt, Boss, May, & Hess, 2006).

The DSES has been proven to predict outcomes effectively when compared to other measures of spirituality used in social science research (Koenig, George and Titus, 2004; Koenig et al., 2004; Parker et al., 2003; Zemore and Kaskutus, 2004). Loustalot (2006) indicates that the DSES is the most validated spirituality scale to date. The DSES has been linked effectively to health outcome studies related to pain management (Keefe et al, 2001), meditation (Wachholtz and Pargament, 2005), survivors of abuse (Fowler et

al., 2004), predictors of well-being (Ciarrocchi & Deneke, 2004), and care-giving for the aging (Holland & Neimeyer, 2005).

2. Dependant variable

a. HAART medication adherence

There is still no single standard, nor preferred method, for accurate measurement of adherence to HAART medications (Grymonpre et al., 1998; Wagner and Rabkin 1999). Though differences between validated measures exist, adherence measure selection is often attributed to the goals and available resources of the researcher (Chesney, 2006). Chesney (2006) maintains that resource-limited settings, large cohort studies and busy clinical practices require rapid screening of adherence, i.e. self-report questionnaires. Though feasible and inexpensive, self-report measures are subject to the most bias, often by over-estimating adherence. According to Deschamps (2008), only four self-report questionnaires that have been repeatedly validated; the simplified medication adherence questionnaire (SMAQ), the visual analogue scale (VAS), the Adult AIDS Clinical Trials Group (AACTG) questionnaire, and the Self-Reported Adherence (SERAD). These different approaches were validated through comparisons to data from a medication event monitoring system (MEMS).

The MEMS approach electronically tallies the number of times a pill bottle has been opened, presuming a medication consumption event, which is then often used in corroboration of self-report measures (Deschamps, 2008). Though costly and time consuming, this method has been sited as the least biased method in measuring adherence. Despite a lack of anonymity, and evidence linking MEMS to under-estimation of adherence in some studies, it has become the reference standard in the

validation testing of alternative adherence measures (Chesney et al, 2000). Sharing similar strengths and limitations to MEMS, pharmacy records, and the use of HIV viral-load testing to corroborate self-reported adherence measures has also become common in the medical research on HAART medication adherence.

Interestingly, despite substantial support for the validity of several separate self-report measures (listed above), the actual number of specific items addressing HAART adherence typically account for only 2-3 questions total on each of these measures, with the remaining items eliciting descriptive details on potential medication consumption barriers such as scheduling and dietary restrictions. With regards to the adherence-specific items, only minor differences are observed across all measures; such differences are seen in recall timeframe (days or months), response formats (as a percentage, a rate, or a frequency), and semantics regarding consumption (i.e., missed-doses or taken-doses). Given the limited number of items which track adherence in each adherence measure, it has been recommend that multiple instruments be implemented to triangulate adherence in subjects, particularly when MEMS and viral-load testing are unavailable and/or infeasible (Deschampas et al, 2008). Two such validated and feasible approaches will be discussed next.

The AACTG has become known as a practical, efficient, validated, and user-friendly measure of self-reported HAART medication adherence data (Chesney et al, 2000; Leserman, Ironson, O’Cleirish, Fordiani, and Balbin, 2001; Kleeberger et al, 2001; Oyugi et al, 2004; Chesney, 2006; Dechamps et al, 2008). The AACTG was initially designed in the 1990’s as a method to not only determined adherence, but also to quantify how many pills were being consumed, as well as how often and under what type of

dietary restrictions. Over time, the AACTG has provided substantiated evidence for the accuracy of a 1-4 day recall period, and medication specific question-format in HAART medication adherence measures (Chesney et al, 2000; Kleeberger et al, 2001; Deschamps et al, 2008).

Given the AACTG's strong correlation to MEMS (Oyugi et al, 2004), four (4) AACTG items have been selected to make up part of the adherence measure used in this study. These items have been selected to illicit specific information from subjects regarding adherence in the last 4 days, as well as description data on possible reasons for missed medications. The AACTG items used in this study are as follows; Item 1: (per medication) "How many doses did you miss yesterday? The day before yesterday? 3 days ago? 4 days ago? Item 2: "Most anti-HIV medications need to be taken on a schedule. How closely did you follow your specific schedule over the last 4 days?" Responses to item 3 are "Never, Some of the time, About half of the time, Most of the time, and All of the time" (Likert 0-5). Item 3 will provide a list of fourteen (14) possible reasons why medications may have been missed, with responses being Never, Rarely, Sometimes, and Often (Likert 0-3) for subjects to choose from.

Lu et al. (2007) maintain that one obstacle to progress in the HAART medication adherence field is the absence of standardized self-report measures. Lu et al. (2007) compared three commonly used different recall time (3-, 7-day, and 1-month) adherence questions, across three different question-response formats (rate, frequency, and percentage). These authors were looking to provide further evidence beyond 4 day recall period utilized by the AACTG and other self-report measures. Lu et al. (2007) analyzed 643 data points from 156 participants and discovered that over-reporting (self-report –

MEMS) was significantly less for the 1-month recall period (9%) than for the 3 (17%) or 7-day (14%) periods. Also, over-reporting was significantly less (3%) for the 1-month *rating task* (e.g., very poor, poor, fair, good, very good, and excellent) than for the *frequency task* (e.g., none of the time, a little of the time, some of the time, a good bit of the time, most of the time, and all of the time), as well as the *percentage task* (e.g., 0, 10, 20, ...100%), both having 12% over-reporting.

Thus, in addition to the two short term recall AACTG items described above, longer-term or global HAART medication adherence have been measured by the use of a 1-month recall *rating task* question-response format as described above in Lu et al (2007). Again, this single (1) item question requires subjects to rate their adherence: very poor, poor, fair, good, very good and excellent (Likert scale format, 1-5 respectively), with 5 indicating the highest level of adherence. Using both a short-term focused series of adherence questions (AACTG), as well as a global 1-month recall rating task question-response was intended to help corroborate the accuracy of my data, and provide an opportunity to examine more variance in my dependant variable of HAART medication adherence.

D. Demographics and Background Characteristics

Independent of screener questions, as outlined in Appendix D and discussed later, the survey asked the following demographical questions; age, race and ethnic background, employment status, income, housing status, insurance status (insured through private insurance; example: Blue Cross Blue Shield, or insured through another funding source other than private; example: SSDI, etc., insurance). These demographical questions have been selected for simple descriptive purposes.

E. Data Collection Plan

Since recruitment through advertisements alone cannot rigorously screen for appropriateness of potential candidates, the web-based survey instrument contained automatic skip patterns after six preliminary screen questions. These screener questions were as follows; “Are you at least 18 years old? What is your gender? What is your sexual orientation? What is your HIV status? Have you been prescribed highly active antiretroviral treatment (HAART) within the last year? Have you taken *at least* one dose your HAART medication within the last month?”

When a subject answers female, heterosexual, bisexual, transgendered, HIV negative, or not having been prescribed and/or not taken at least one dose of HAART (respective to each screener question), they were then skipped to an end screen. The end screen thanked the inappropriate subject for their interest and participation while giving a brief explanation about how and why they didn’t qualify for the remainder of the survey. The screen questions were the first six items on the survey, followed by the DSES, the RNHAI, the self-reported adherence questionnaire (2 short term fall back questions, and 1-month fall back medication adherence question, and remaining demographical questions last.

As described above, the primary methods for collecting data in this study were through the combined use (into one survey instrument) of three established questionnaires (RNHAI and DSES), and 3 varying self-report questionnaire, as well as several questions related to general demographics. This was made available to potential subjects through an anonymous online web-based (website) survey, designed by the investigator through a company called SurveyMonkey.

SurveyMonkey is the leading survey editor tool on the web, with over 80% of the Fortune 100 currently users (SurveyMonkey, 2008). SurveyMonkey maintains that all data collected on their site is completely and absolutely confidential, and never to be affiliated with any third-parties. Anonymity is also maintained by the requirement of a password that only the researcher will possess. Since subjects took the survey anonymously, with no identifiable information being associated with their data, confidentiality was assured.

As described above, this study sought to recruit participants through advertisements placed in a multitude of pharmacies and locations throughout the greater metro area of Chicago (as well as online advertisements). All participants were provided access to the same advertisement design, which then directed them to the study's URL address. At this URL address or survey main page, the subject's rights, as well as a brief description of the study and its purposes were posted, followed by the screening questions and the survey itself.

SurveyMonkey also provided an automated email notification and list management tools to track survey responses. The website would notify the researcher when surveys have been completed. Additionally, data was downloaded in multiple formats, allowing the raw data collected to be formatted into either a spreadsheet, or database format.

F. Data Analysis Plan

This study used univariate, bivariate, and multivariate methods for data analysis. At the univariate level, measures of central tendency and dispersion were used to examine the distribution of the scores. At the bivariate level, Pearson's r was used to

examine the relationship between variables. Given the use of multiple items in the collection of medication adherence data, adherence indicators were developed based on an item-response analysis of the questions collectively. From this analysis a scale or index scale was generated from which to reference HAART Medication Adherence. At the multivariate level, logistic regression was used to examine the main effects of each independent variable on the dichotomous dependant variable(s). To test for the moderating effects of spirituality, a series of regressions were conducted using the procedure described by Gogineni, Alsup, and Gillespie (1995). In the first step of the model, the independent variables (spirituality and internalized homonegativity) were regressed on each of the three (3) measures of the dependant variable (HAART medication adherence). In the second step, the variables spirituality, internalized homonegativity, and the interaction of spirituality and internalized homophobia were entered as a block on the dependent variables (HAART Medication Adherence). For spirituality to be classified as a moderator of either dependant variables, the difference in R^2 between the first and second equations must be significant, and the standardized beta coefficient (B) for spirituality and for the interaction of spirituality and internalized homophobia must be significant (Gogineni, Alsup, and Gillespie, 1995). If the Beta for spirituality is not significant, then spirituality would be classified as a quasi-moderator. If the beta for the interaction term is not significant, spirituality would be considered to be another independent variable (Gogineni, Alsup, and Gillespie, 1995).

G. Human Subjects Protections

This dissertation proposal will be submitted to the UIC IRB for approval prior to implementation. Further, the threat of potential harm (and/or risk of harm) for

participants in this study is extremely low (i.e., discovery and/or disclosure of personal sexual identity, discovery and/or confidential disclosure of sero-status to self and/or the medical field). The potential for emotional harm, based on the specific subject matter (i.e., religious/spiritual beliefs) being presented to subjects through the survey will, at most, pose no greater harm (nor risk to harm) than that which has already been experienced by the participant as a clientele of a Chicago AIDS service organization, medical facility, business patron, and/or religious institution affiliate.

IV. RESULTS

Despite findings from studies conducted on chronic life-threatening illnesses, such as heart disease and cancer, indicating that individuals turn to various forms of spirituality to cope (Demi, Moneyham, Sowell, & Cohen, 1997; Dunbar et al, 1998; Miller & Thorensen, 2003), research on spirituality and HIV+ gay men is limited. An examination of the literature also revealed few studies that examined HAART medication adherence in relation to spirituality.

The purpose of this study was to gain preliminary evidence to support further research on the utilization of spiritual coping to promote better adherence to HAART medication regimens for HIV+ gay men. This was achieved by focusing on spirituality and its impact on the relationship between internalized homonegativity and HAART medication adherence in gay men living in the greater metro area of Chicago, Illinois.

The purpose of this chapter is to present the results of this study, beginning with demographic characteristics of the sample. Next a description of each principal independent variable and dependant variable will be presented. Finally, the results for each research question are presented. The chapter ends with a summary of the key findings.

A. Data Collection

Data were collected using a ‘live’ online survey between November 2009 and May 2010. SurveyMonkey software was used to collect and store the data. It is estimated that approximately 600 individual viewings or ‘hits’ were counted during the months that the survey was live. Data collection was stopped at the end of May 2010 with 227 subjects meeting inclusion criteria. It is estimated that an additional 373

potential subjects did not meet the criteria for inclusion. All subjects completed the survey, however several participants selected the ‘prefer not to say’ response option for the RNHAI (n=14), the DSES (n=13), and Last 4 Days Overall (n=1) items. These participants were excluded from the analysis. Although most of the excluded subjects did not consent, SurveyMonkey reported that several other subjects (n=43) were excluded due to not meeting the criteria of this survey. See Table 1 for summary of subject exclusion.

TABLE 1
SUMMARY OF SUBJECTS EXCLUDED

Subject Type	n
Did Not Consent	330
HIV Negative Status	17
HIV Status Unknown	4
Discontinued Medications Completely	4
Female	4
Bisexual	3
Heterosexual	3
Transgendered	1
Total Excluded	373

B. Sample

The sample consisted of 227 HIV positive, self-identified gay men, who had taken at least one dose of their HAART Medication in the last month. The majority of respondents were White/Caucasian 80.6% (n=183). Other race/ethnic groups included: Latino 7.5% (n=17), Black/African American 4.8% (n=11), and Other 5.7% (n=13). Ages ranged from 18-60+, with 60% (n=143) over the age of 40. The majority of the

sample had at least a high school diploma 97% (n=222), with 44.5% (n=101) having a bachelors degree. See Table 2 (below) for a summary of demographics.

TABLE 2
DESCRIPTION OF SAMPLE DEMOGRAPHICS (n = 227)

Variable	Frequency	Percentage
Race/Ethnicity		
White/Caucasian	183	80.6%
Black/African American	11	4.8%
Latino	17	7.5%
Other	13	5.7%
Preferred not to say	3	1.3%
Age		
18 - 29	28	12.3%
30 - 39	56	24.7%
40 - 49	91	40.1%
50 - 59	46	20.3%
60 +	6	2.6%
Education Level		
Grade School	2	.9%
Some High School	3	1.3%
High School Diploma	19	8.4%
Vocational Program	12	5.3%
Some College	72	31.7%
Associates Degree	18	7.9%
Bachelors Degree	56	24.7%
Graduate Degree	45	19.8%
Employment Status		
Unemployed	52	22.9%
Part Time	33	14.5%
Full Time	109	48.0%
Retired	28	12.3%
Preferred not to say	5	2.2%
Annual Income		
15,000 or Less	20	14.1%
16,000 -19,000	10	7.0%
20,000 – 29,000	19	13.4%
30,000 – 39,000	16	11.3%
40,000+	74	52.1%
Prefer not to say	3	2.1%
No Income Reported	81	36.0%
Medical Insurance Coverage		
No Coverage	20	8.8%
State/Federal Sponsored	73	32.1%
Private	120	52.9%
Other	9	4.0%
Prefer not to say	5	2.2%

C. **Independent Variables**

The following section describes the descriptive results of the independent variables and a summary of the scales used to measure these constructs.

Internalized Homonegativity and Spirituality were examined for the entire sample, as well as across the race/ethnicity demographic to observe potential descriptive trends in the data.

1. **Internalized homonegativity**

Internalized homonegativity was measured by the Revised Nungesser Homonegativity Attitudes Inventory (RNHAI). The RNHAI had an internal consistency of .75 in this sample which is lower than alphas reported previously that ranged from .90 (Shildo, 1994) to .92 (Dube, 2000). The RNHAI used a 5 point Likert-type scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The RNHAI scores could range from 36-180 with higher scores on the measure reflect more severe internalized homonegativity (Shildo, 1994; Dube, 2000). A total mean score of 73.2 was observed in this study with scores ranging from 56-114. See Table 3 for descriptive results of RNHAI for the total sample.

For clarity, as seen in Bill and Horne (2005), RNHAI results can be presented as an average by dividing the total score by the number of total items (36) in the questionnaire. This provides an average overall score on a 5-point scale, with 5 representing severe internalized homonegativity (the “strongly agree” response option). Using this method to examine the current study, a low to moderate level of internalized homonegativity ($M=2.03$, $SD \pm .29$) was observed. These results indicate that the

“disagree” response option was the average response (low internalized homonegativity), with 3 as a midpoint (moderate internalized homonegativity) on the scale. The current study’s results were consistent with findings in the literature, Biss and Horne (2005) (M=1.56, SD \pm .31) and Nicely (2005) (M=1.70, SD \pm .48) as well as the original series of RNHAI studies conducted by Shidlo (1994) (M=1.59-2.06, SD \pm .38-.40).

TABLE 3
DESCRIPTION OF INDEPENDENT VARIABLES

Variable	Mean	SD	Range	Chronbach’s Alpha
RNHAI	73.2	\pm 10.6	56-114	.75
DSES	51.78	\pm 19.9	16-92	.95

2. Spirituality

Spirituality was measured by the Daily Spiritual Experiences Scale. The instrument’s internal consistency in this sample (.95) was consistent with alphas reported in previous research at .91 and .95 (Underwood, 2002), and .90 (Loustalot et al, 2006). All items are formatted in a 6-point Likert-type scale. ‘Many times per day’ represented the lowest numerical category (1), and ‘never or almost never,’ the highest (6). However, question 16 (In general, how close do you feel to God?) was reverse scored highest to lowest (4-1). Possible responses to this item include: “not close at all,” “somewhat close,” “very close,” and “as close as possible” (lowest numeric value). Total scores ranged from a possible 16-94 with lower scores on the DSES indicating a stronger sense of spirituality (Underwood, 2002). See Table 3 (above) for descriptive results of DSES of the total sample.

D. Dependent Variable

Adherence was measured by self-report over three (3) distinct recall timeframes: a 1 day fallback timeframe (*During the past four (4) days, was there any day(s) when you missed any medication?*) with attention on the *Yesterday* response item as the quantity of 1 day fallback, a 4 day fallback timeframe (*Overall, how closely did you follow your prescribed schedule over the last four (4) days?*) and one month overall timeframes respectfully (*Over the past month (30 days), how would you rate your general ability to take your medication as prescribed?*). Interpretation of the results indicates that the most frequent response for each of the three (3) on the dependent measures was ‘adherent.’ See Table 4 for all the descriptive results of the dependent measures by original items, as well as in collapsed and totaled quantities.

Additionally, the adherence data showed very little variance among the sample. To facilitate data analysis, the responses were collapsed into a dichotomous variable and labeled as ‘adherent,’ which indicates full adherence to one’s medication regimen, and ‘non-adherent’ meaning less than full adherence to medication regimen. The frequencies observed using the dichotomized adherence responses indicated adherence at: 83.7% (n=190) for *Yesterday*, 75.2% (n=170) for *Last Four Days Overall*, and 63.0% (n=143) for *Last Month Overall*. However, no statistically significant differences were observed between the dichotomized groups (using 2 tailed independent t-tests) with respect to either independent variable (RNHAI or DSES).

TABLE 4
DESCRIPTION OF DEPENDANT VARIABLES: ORIGINAL & COLLAPSED
(n=227)

Variable/Item	Frequency	Percentage
<u>#1. Yesterday: Original</u>		
Never	190	83.7%
Yesterday	18	7.9%
Other	25	8.4%
<u>#1. Yesterday: Collapsed</u>		
Adherent	190	83.7%
Non-Adherent	37	16.2%
<u>#2. Last Four Days Overall: Original*</u>		
Never	3	1.3%
Some of the Time	2	.9%
About Half of the Time	3	1.3%
Most of the Time	48	21.1%
All of the Time	170	75.2%
<u>#2. Last Four Days Overall: Collapsed*</u>		
Adherent	170	75.2%
Non-Adherent	56	24.8%
<u>#3. Last Month Overall: Original</u>		
Very Poor	3	1.3%
Poor	1	.4%
Fair	6	2.6%
Good	14	6.2%
Very Good	60	26.4%
Excellent	143	63.0%
<u>#3. Last Month Overall: Collapsed</u>		
Adherent	143	63.0%
Non-Adherent	84	37.0%

*n=226

E. Research Questions

1. Internalized homonegativity and HAART medication adherence

The first research question was: *Is there a relationship between Internalized Homonegativity and HAART medication adherence?* This question was addressed by using bivariate (Pearson) correlation analysis conducted between the RNHAI and the HAART medication adherence questions using the collapsed adherent/non adherent. No statistically significant relationships were observed between internalized homonegativity and HAART medication adherence in the *Yesterday* and *Last 4 Days* adherence questions. However, there was a weak but statistically significant negative relationship observed between the internalized homonegativity and *1 Month Overall* adherence question. Table 5 reports the Pearson correlations.

2. Internalized homonegativity and spirituality

The second research question was: *Is there a relationship between internalized homonegativity and spirituality?* A Pearson correlation between the results of RNHAI and the DSES revealed no statistically significant relationship between these variables ($r(202) = -.092$ $p=.193$).

3. Spirituality and HAART medication adherence

The third research question for this study was: *Is there a relationship between spirituality and HAART medication adherence?* This question was answered using bivariate (Pearson) correlation analysis conducted between the Spirituality and the HAART medication adherence scores. No statistically significant relationship between Spirituality and any of the three (3) HAART medication adherence recall periods was found. Table 5 reports these findings.

TABLE 5
BIVARIATE CORRELATIONS OF KEY MEASURES

Adherence Variable	<u>RNHAI**</u>		<u>DSES***</u>	
	r	Sig.	r	Sig.
#1. Yesterday	.067	.328	.087	.208
#2. Last 4 Days Overall	-.073	.291	-.055	.427
#3. 1 Month Overall	-.149*	.029	-.079	.252

* $p < .05$, ** $n=214$, *** $n=213$

4. Spirituality as moderator

The fourth research question was: *Does spirituality moderate a relationship between internalized homonegativity and HARRT medication adherence?* To answer this question, logistic regression was used to determine if spirituality could be considered a moderator of internalized homonegativity and HAART Medication Adherence. More specifically, this study utilized a two-step technique described in Gogineni, Alsup, and Gillespie (1995). In step one, the independent variables (spirituality and internalized homonegativity) were regressed over the three (3) separate variations of the dependant variable (HAART Medication adherence). In step two, the independent variables (spirituality and internalized homonegativity), as well as the interaction variable of spirituality/internalized homonegativity were then to be regressed at each of the three (3) dependent variables (HAART Medication Adherence).

As described in Chapter III, Gogineni, Alsup, and Gillespie (1995) stated that for a variable to be classified as a moderator for a dependant variable measures, the

difference in R^2 between the first and second steps must be significant, and the standardized beta coefficient (B) for moderator and for the interaction of other independent variables must be significant (Gogineni, Alsup, and Gillespie, 1995). If the Beta coefficient for the moderator is not significant, then the variable could be classified as a quasi-moderator. If the Beta coefficient for the interaction term is not significant, the moderator would be considered to be another independent variable (Gogineni, Alsup, and Gillespie, 1995).

Using this approach, then, the results of the first step of the model found no statistically significant relationships, except between the RNHAI predictor and *1 Month Overall* criterion variable. Since the DSES variable was not statistically significant, however, a moderation effect could not be determined (Gogineni, Alsup, and Gillespie, 1995). Further, since the requirement for step-one of the model was not accomplished, step two was unnecessary. Thus, for this data, spirituality would be considered independent variable in this model. These results are displayed in Table 6.

TABLE 6
LOGISTIC REGRESSION MODERATION EQUATIONS (STEP ONE)

Variable	b	SE	Wald	p	OR	95% CI
#1 Yesterday						
RNHAI**	.755	.592	1.627	.202	2.127	.667 – 6.784
DSES***	.010	.010	1.026	.311	1.010	.991 – 1.030
#2. Last 4 Days Overall						
RNHAI**	-.478	.542	.778	.378	.620	.214 -1.793
DSES***	-.006	.009	.448	.503	.994	.978 – 1.011
#3. 1 Month Overall						
RNHAI**	-1.032	.490	4.435	.036*	.356	.136 - .931
DSES***	-.007	.008	.821	.365	.993	.979 – 1.008

* Significant; $p < .05$. n=214, **n=214, ***n=213

F. Summary of Key Findings

Despite extensive recruitment efforts specifically targeting a self-identified gay and diverse sample, the respondents to the survey were very homogeneous. The sample was predominately White/Caucasian, educated, and over the age of 40. Similarly, the HAART medication adherence results indicated a lack of variability. To maximize variability, these responses were collapsed into two categories: adherent and non-adherent. However, no statistically significant differences were observed between the dichotomized groups of adherent and non-adherent.

With respect to the research questions, no relationship between internalized homonegativity and spirituality, nor between spirituality and HAART medication adherence was observed. Only one statistically significant negative association was observed between the internalized homonegativity measure and the *1 Month Overall* HAART medication adherence question. No other significant relationships between internalized homonegativity and HAART medication adherence were found. Logistic regression was used to determine if spirituality moderated the relationship of homonegativity and HAART medication adherence. There was no significant moderating effect of spirituality in this sample. Thus, spirituality did not moderate the relationship between homonegativity and HAART medication adherence.

V. Discussion

The purpose of this study was to gain preliminary evidence to support further research on the utilization of spiritual coping to promote better adherence to HAART medication regimens for HIV+ gay men. Based on Lazarus and Folkman's (1984) classic Stress, Appraisal and Coping Theory, and a review of the literature, it was hypothesized that spirituality would expand an individual's personal coping mechanism repertoire in a way that, despite internalized homonegativity, would promote improved medication adherence. More specifically, this study focused on an examination of spirituality as a potential moderator between internalized homonegativity and HAART medication adherence.

As described in Chapter IV, this was a demographically homogeneous sample. Participants scored low to moderate on internalized homonegativity, low on spirituality, but high on successful HAART medication adherence. However, spirituality did not associate significantly with any of the variables in the study. Given these findings, this sample did not support the hypothesis that spirituality was a moderator of internalized homonegativity and HAART medication adherence.

This chapter will begin with a discussion regarding the possible explanations for the outcomes of the study. Briefly summarized here, the general lack of associations (discussed in greater detail below) among the data could, in part, be due to error in operationalizing the theoretical framework of Lazarus and Folkman (1984). Further, outcomes of this study could be related to sample homogeneity, recruitment strategy, a lack of spirituality in the sample, as well as potential changes in the social acceptability

of LGBT's in today's society. This chapter ends with a discussion of the study's limitations and its implications for the field of social work.

A. Internalized Homonegativity

Overall, the results of the current study indicated a low level of internalized homonegativity, as measured by the RNHAI, in this sample (M=73.2). Referring to the standardized scoring method described in Biss and Horne (2005), this study's single item mean (M=2.03) indicates low internalized homonegativity, with 3 as a midpoint (moderate internalized homonegativity). The current study's results were similar to or slightly higher than findings in the literature; Biss and Horne (2005) (M=1.56) and Nicely (2005) (M=1.70); as well as the original series of RNHAI studies conducted by Shidlo (1994) (M=1.59-2.06). However, a closer look at the low standard deviation of the overall scoring across all these studies (mentioned here) revealed that perhaps the instrument may be failing to illicit variation in responses to the items.

As discussed earlier, several studies have reviewed alternative measures of internalized homonegativity (Currie et. al 2004; Mayfield, 2001; Shidlo, 1994). In Currie et al (2004), a comprehensive critical overview of available measures for internalized homonegativity, as well as other similar measures of homosexual stigma were discussed. Included in this meta-analysis were Shidlo's RNHAI, Mayfield's Internalized Homonegativity Inventory (IHI), and Ross and Rosser's (1996) Reactions to Homosexuality Scale (RHS). Currie et al (2004) indicated that these alternative measures show the potential to be equivocal to the RNHAI; however, these instruments have only shown preliminary reliability and validity. Perhaps implementation of one of these alternative measure would have resulted in greater variation in overall scores in this

sample, as well as produced additional statistically significant relationships between internalized homonegativity, spirituality, and HAART medication adherence.

One possible explanation for relatively low levels of internalized homonegativity could be related to a noticeable increase in the general level of tolerance and inclusion of gay men in society. According to Avery et al. (2007), the American public may be at the most favorable attitude towards gay men than all time. For example, Schwartz (2010) reports that an estimated 30% of Americans favor same-sex marriage, and 50% favor same-sex couples adopting children. Examples of an increased tolerance can also be seen in the growing number of openly gay celebrities, LGBTQ characters on network television, and increased political action and awareness of LGBTQ civil rights.

As tolerance, acceptance, and inclusion on LGBTQ's increases, the ramifications of stigma, guilt and shame (i.e., Internalized Homonegativity) associated with being a member of this minority status may decrease. However, despite increases in tolerances noted in the literature toward LGBTQ's, civil-right inequalities and other acts of prejudice and discrimination continue to plague sexual minority communities around the world.

Another possible explanation for a general lack of association between internalized homonegativity and other variables in this study could be due to an error in the specification of internalized homonegativity's role when applying the theoretical framework guiding this study. In other words, in conceptualizing this study, internalized homonegativity was considered a primary negative psychological "stressor" specific to gay men. According to Lazarus and Folkman's (1984) model of stress, appraisal, and coping. It was hypothesized that internalized homonegativity would impact HAART

medication adherence negatively in a similar fashion to depression, low self-esteem, and distrust. The data revealed no statistically significant relationships between internalized homonegativity and HAART medication adherence. However, in this study, internalized homonegativity did not correlate with nor impact HAART medication adherence.

Also described in Chapter III, spirituality (discussed further later) did not influence internalized homonegativity scores as initially suggested when conceptualizing this study. No other literature was identified that utilized comparisons of the RNHAI to the DSES scales. With this gap in empirical research between internalized homonegativity and spirituality, possible explanations for outcomes in this study cannot be made through direct comparisons to similar studies. It is unclear if other variables, unaccounted for by this study, may have influenced internalized homonegativity's association to other independent and dependent variables.

B. Spirituality

The results of the DSES in this sample indicated a low level of spirituality ($M = 51.78$), with total scores ranging from 16-94, when compared to the findings of the original series of studies described by Underhill (2002) ($M = 29.78$ and 29.49). As described previously, Underhill (2002) designed the DSES scale such that lower scores indicate higher levels of spirituality. Although recent studies (Ellison and Fan, 2007) have reversed this coding for clarity purposes (higher scores equaling stronger spirituality) this study used the original scoring method described in Underhill (2002).

One possible explanation for DSES results in this sample could be related to the factor of gender and the measure's suitability for use with male populations. Underhill's (2002) original studies on the DSES were conducted on predominately White/Caucasian

female subjects. In Underhill's (2011) meta-analysis, she reported over 70 published studies on the DSES. Underhill (2011) states that in U.S. samples, women tended to score higher on the DSES when compared to men. However, only a fraction of the studies described in the meta-analysis were conducted specifically on male participants with none focused exclusively on HIV+ gay men.

Beyond explanations of gender (Underhill, 2011) described above the absence of empirical research on the DSES with this population makes direct comparisons of these findings difficult. Further, examinations into the experience of spirituality and the role that it plays in the lives HIV+ gay men continue to be missing from social science research. This is especially true when considering how spirituality serves as a coping mechanism and its impact on HAART medication adherence.

Another possible explanation for the low DSES results obtained by this sample could be related to the historic and continued pejorative light that many traditional religious organizations cast on gay men and other sexual minorities. Although Underhill (2011) reported that the DSES focuses on positive spiritual experience rather than specific beliefs systems, Lease et al. (2005) maintained that many gay individuals report internal conflict between their religious faith and sexual orientation. Gay members of faith communities, churches, etc., that frame homosexuality in a negative light continue to face significant distress when attempting to reconcile religious and sexual identities (Mahaffy, 1996; Thumma, 1991).

Although the DSES aims to measure a nonsectarian connection to "the sacred," there is no way to distinguish if negative religious messages, and negative experiences perceived by gay men from religious institutions, have impacted the scores on

spirituality, especially given the lack of associations between spirituality and internalized homonegativity in this sample. Pitt (2010) observed four types of reactions, in samples of gay men, after experiencing negative religious messages; he reports that they leave the church entirely, switch to gay-friendly churches, refute negative religious perspectives on homosexuality, or reject the institutional Church's authority which condones these messages. The present study did not collect data regarding reactions to negative religious messages, all of which may impact an individual's beliefs in a 'sense of sacred,' which in turn may impact a subject's score on the DSES.

A general lack of association between spirituality and other variables in this study could be due to an error in the specification of spirituality's role when applying the theoretical framework guiding this study. In other words, in conceptualizing this study, spirituality was considered a primary "coping" mechanism, in terms of the Lazarus and Folkman's (1984) model. When compared to the results described in Underhill (2011), spirituality appears to be present to a much lesser degree in this sample. Further, it was initially suggested that spirituality could act as a moderator between internalized homonegativity and HAART Medication adherence. However, spirituality did not moderate the relationship between internalized homonegativity and HAART Medication Adherence. It might be that spiritual coping is utilized to a lesser degree in this sample. Yet, it remains unclear if other variables, unaccounted for in this study, may have impacted spirituality's association with the other variables in this study.

A second misspecification of the theoretical framework may have influenced the lack of associations between the DSES and other key variables in this study. When applying "coping" from Lazarus and Folkman's (1984) model using the DSES, "spiritual

experiences" (the construct captured by the DSES) may differ significantly from construct of "spiritual coping." Thus, the DSES may not have captured a coping response utilized by the subjects, as anticipated by the theoretical framework.

C. **HAART Medication Adherence**

An exceptionally high rate of 'excellent' HAART medication adherence overall was observed in this sample, with excellent meaning 100% self-reported adherence. As described previously, the frequencies of 100% self-reported adherence observed using the dichotomized adherence responses in this study are as follows: 83.7% (n=190) for *Yesterday*, 75.2% (n=170) for *Last Four Days Overall*, and 63.0% (n=143) for *Last Month Overall*.

One possible explanation for the high rates of successful HAART medication adherence observed in this study could be related to the self-report nature of the dependant measure. Self-report measures are subject to bias and often influence subjects to over-estimate their successful adherence (Chesney, 2006). An examination of the literature indicates that there is still no single gold standard, nor preferred method, for accurate measurement of adherence to HAART medications (Grymonpre et al., 1998; Wagner and Rabkin 1999). However, adherence measure selection is often attributed to the goals and available resources of the researcher (Chesney, 2006). This social desirability phenomenon tends to encourage the under reporting of undesirable characteristics and the over reporting of desirable behaviors in self-report measures (Sudman & Bradburn, 1982; Fowler, 1995; Gagne & G. Godin, 2005). The utilization of more precise and less subject methods of measuring HAART medication adherence is encouraged, such as refill-bottle monitoring, plasma viral load and CD4 cell counts, as

well as the Medication Event Monitoring System (MEMS) (Lyimo et al., 2011; Sherr et al., 2010; Racey et al., 2010). Given the exploratory nature of the study, self-report measures of adherence were the most feasible and appropriate.

Lastly, the simplification of HAART medication regimens may also impact and improve adherence. According to Airoidi et al. (2010), when research participants switched to a one-pill once-a-day HAART, both adherence and quality of life measures showed statistically significant improvement. Improvement in HAART regimen simplicity is an added value that favors adherence and may improve long-term success. In this study, 33% (n=77) of the sample reported taking a single HAART medication as their regimen.

As discussed briefly earlier, a patient must ingest at least 90% to 95% of their prescribed doses on a consistent basis to maintain the suppression of the HIV virus (Liu et al, 2006; Townsend, Jackson, Smith, & Wilson, 2007). Disruptions in medication adherence permits the virus to resume its normal rapid replication process in the infected individual's body, which then allows for the production of potentially communicable resistant mutant strains that are no longer responsive to available antiretroviral drugs (Murphy, 2004). Further, Haberer et al (2011) reports that loss of viral suppression may begin as early as 48 hours after a lapse in adherence, with a 15-day interruption leading to a 50% chance of virologic suppression failure on HAART therapy. However, according to Deeks and Perry (2010), no comprehensive studies have been published that compares the efficacy of these newer single-dose regimens to previous multiple-dose HAART medication regimens and data published by pharma-economic studies.

Despite the limitations inherent in self-report measures, this study implemented a series of self-report questions aimed at minimizing biases as described in Lu et al. (2007). Lu et al. (2007), completed a meta-analysis of HAART adherence measures and found that, when using self-report, subjects tend to over estimate successful adherence significantly less for the 1-month recall period (9%) than for the 3 (17%) or 7-day (14%) periods. In sum, these authors indicated that the longer a subject was asked to recall, the more accurate the adherence (with less over-reporting of success) was reported overall. The results of the current study partially mirror these findings in Lu et al. (2007) with regards to a gradual decreasing of self-reported successful HAART medication adherence over time. The frequencies of 100% adherence observed in this study decreased as the recall period lengthened from 83.7% at 1 day recall to 62.9% at the one month recall period. Arguably, this decreasing trend in the adherence supports the idea that social desirability may have been a factor in over reporting of successful medication adherence.

D. Limitations of this Study

The use of a convenience sampling method, despite a sample size of 227, diminished external validity and thus limits generalizability of these results beyond this sample. Convenience sampling may have also contributed to an overwhelmingly homogeneous sample, thus diminishing variance across the independent and dependant variables. Additionally, this study was limited by its cross-sectional design method for data collection. By using this design, the results of the principal variables are potentially susceptible to errors inherent to recall periods and incorrect memories, further compromising the validity of the results.

In addition to limitations inherent to convenience sampling, there are several possible explanations for the homogeneity in this sample potentially due to recruitment. Historically, convenience-sampling recruitment efforts toward sexual minorities, particularly racially and ethnically diverse sexual minorities (Swanson, 1995; Corbey-Smith, 1999; Wheeler, 2003) are plagued with difficulties (Aaron et al, 2003; Magnani et al., 2005). With respect to this study, this phenomenon was evidenced by an inability to connect and recruit participants from diverse backgrounds despite phone calls, emails, and mailings to multiple LGBTQ groups self-identifying on race/ethnicity and religious identities (Black PRIDE, Chicago PFLAG, the Chicago Coalition of Welcoming Churches, etc).

Further, because of an inability to solicit any responses, even after several attempts from these self-identified groups, post-card advertisements were placed exclusively at local pharmacies and/or agencies and the following venues located in Chicago's historically "gay" neighborhoods of Lakeview and Andersonville. Although these venues included gay-affirming religious institutions, the majority of the sites willing to participate in this study were nightclubs, bars, restaurants, bookstores, physician's offices, HIV-specific social service, medical clinics, and a prominent LGBTQ community center located in the heart of Chicago's historically "gay" and White/Caucasian neighborhood. Based on the demographics of the neighborhood where these post-cards were placed, the post-card advertisements might have contributed low race/ethnicity diverse subjects to this sample.

This study made use of the social networking website of Facebook as an attempt to recruit subjects beyond the scope of post-card advertising. Using Facebook advertising

allows customers to directly target Facebook consumers based on the characteristics available on customers' profiles. This study targeted subjects that indicated support of LGBT issues, as well as other 'keywords' located on their Facebook profiles. Over 600 viewings or 'hits' were counted during the six months that the survey was open online, with over one hundred completed surveys collected in the first month. Despite rapid access to this targeted sample population made available through this method of recruitment, Facebook advertizing, much like the post-card advertisement, recruited a predominately homogeneous sample.

Very little research has been done on recruitment via online social networking sites, especially on the recruitment of racially and ethnically diverse sexual minority populations. It appears, however that this method, at least with respect to this sample, is subject to the same limitations as traditional convenience sampling approaches. Some possible factors that may contribute to why Facebook advertizing promoted homogeneity in this sample, in addition to convenience sampling limitations, could be increased access to the Internet and computers. Further, self-selection bias may be an additional factor contributing to the homogeneity in the data collected in this study. Additionally, the utilization of other fee-for-service online sites which cater to gay men, such as Manhunt.com, Grindr, and Gay.com, could provide an avenue toward a more demographically diverse population of gay men, however it's unclear if these alternatives would be inhibited by the same limitations as the sites used in this study. Additionally, advertising on these sites requires an increases financial burden on the researcher. The social science research presently does not focus on the utilization of online recruitment

strategies as means to reach hidden minority communities such as the one examined in this study.

E. Summary

The purpose of this study was to gain preliminary evidence to examine the utilization of spiritual coping to promote better adherence to HAART medication regimens for HIV+ gay men. More specifically, this study focused on an examination of spirituality as a potential moderator between internalized homonegativity and HAART medication adherence.

Although this study yielded results that were generally consistent with the existing literature for internalized homonegativity, some possible explanations for the lack of associations between internalize homonegativity to key variables in the study could be related to sample homogeneity and a misspecification of internalized homonegativity's role when applying the theoretical framework guiding this study. Further, it is difficult to interpret these lack of associations based on an absence of direct comparisons to similar existing research utilizing the same variables as this study.

A general lack of association between spirituality and other variables in this study was observed. Examination of the research on the DSES indicated that gender might be a potential explanation for lower scores in this sample. Additionally, lack of associations between spirituality and other variables could be due to a misspecification of spirituality's role when applying the theoretical framework guiding this study. When compared to the average results described above in Underhill (2011), spirituality appears to be a present to a much lesser degree in this sample. Further, it was suggested that spirituality could act as a moderator between internalized homonegativity and HAART

medication adherence. Subsequently, spirituality did not moderate the relationship between internalized homonegativity and HAART medication adherence. Compared to studies described in Underwood (2011), it appears that spiritual coping is utilized to a lesser degree in this sample. It is unclear if other variables, unaccounted for by this study, have impacted spirituality's association to other key variables in this study.

The results of the current study partially mirror these findings in Lu et al (2007) with regards to a gradual decreasing of self-reported successful HAART medication adherence reported. Although a statistically significant association of the dependant variable was only located in one of the three adherence questions (with internalized homonegativity), this trend may help explain a weak but statistically significant association between internalized homonegativity and HAART medication adherence for the 1 month fallback question.

F. Social Work Implications

Despite an inability to identify spirituality in association with HIV+ gay men and HAART medication adherence, the data revealed that spirituality was minimally present in this population. Social science researchers need to continue to explore the potential coping resource that spirituality has to offer sexual minorities. Further, researchers need to focus on potential dimensions of spirituality that are relevant to LGBT's, as well as the dimension that may impact internalized homonegativity and HAART medication adherence. While some aspects of spirituality and religion, such as religious rituals (e.g., church attendance, volunteering), have shown associations with depressive symptoms (McCullough and Larson, 1999), the same cannot be said about the more subjective, existential dimension of spirituality. Social science would benefit from further research

aimed at an understanding of the intrinsic factors of spirituality, their association with positive and negative psychological aspects of mental health, and how these may impact HAART medication adherence and other health related behaviors.

Social work's commitment to providing best practices and evidence-based services to all marginalized and oppressed minorities warrants an increased effort to examine the utility of spirituality and spiritual coping with the HIV+ gay population. A failure to promote further education on these topics may inadvertently restrict the range of personal coping strategies and resources that future social workers could implement in the field. This will negatively impact both the clients' wellbeing, and social work's reputation as an inclusive and modern resource within this population. Social work students and practitioners need to be prepared to help their clients utilize all potential resources in their environment.

As indicated in the growing popularity and utility of spirituality and spiritual coping within the medical literature with respect to other chronic illnesses such as cancer, the same cannot be said about the focus on spiritual aspects of HIV+ gay men in the social science literature. Social work must promote the empirical examination, and the use of spirituality and spiritual coping for populations disproportionately affected by HIV/AIDS, including but not limited to gay men. By doing so, social work will provide an avenue to HIV+ gay men that has been historically discounted, avoided, and insufficiently investigated. In providing and promoting access to spirituality and spiritual coping, social work will increase social justice toward this population.

APPENDICES

APPENDIX A

A. Daily Spiritual Experiences Scale

“The list that follows includes items you may or may not experience. Please consider how often you directly have this experience, and try to disregard whether you feel you should or should not have these experiences. A number of items use the word ‘God.’ If this word is not a comfortable one for you, please substitute another word which calls to mind the divine or holy for you.”

	Many times a day	Every day	Most days	Some days	Once in a while	Never or almost never
I feel God’s presence.	1	2	3	4	5	6
I experience a connection to all of life.						
During worship, or at other times when connecting with God, I feel joy which lifts me out of my daily concerns.						
I find strength in my religion or spirituality.						
I find comfort in my religion or spirituality.						
I feel deep inner peace or harmony.						
I ask for God’s help in the midst of daily activities.						
I feel guided by God in the midst of daily activities.						
I feel God’s love for me, directly.						
I feel God’s love for me, through others.						
I am spiritually touched by the beauty of creation.						
I feel thankful for my blessings.						
I feel a selfless caring for others.						
I accept others even when they do things I think are wrong.						
I desire to be closer to God or in union with the divine.						

	Not at all	Somewhat close	Very close	As close as possible
In general, how close do you feel to God?				

APPENDIX B

Revised Nungesser Homonegativity Attitudes Inventory

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. When I am in conversation with a gay man and he touches me, it does not make me uncomfortable.	1	2	3	4	5
2. Whenever I think a lot about being gay, I feel depressed.					
3. I am glad to be gay					
4. When I am sexually attracted to another gay man, I feel uncomfortable.					
5. I am proud to be a part of the gay community.					
6. My homosexuality does not make me unhappy.					
7. Whenever I think a lot about being gay, I feel critical about myself.					
8. I wish I were heterosexual.					
9. I have been in counseling because I wanted to stop having sexual feelings for other men.					
10. I have tried killing myself because I couldn't accept my homosexuality.					
11. There have been times when I've felt so rotten about being gay that I wanted to be dead.					
12. I have tried milling myself because it seemed that my life as a gay person was too miserable to bear.					
13. I find it important that I read gay books or newspapers.					
14. It's important to me to feel part of the gay community.					
15. Homosexuality is not as satisfying as heterosexuality.					
16. Homosexuality is a natural expression of sexuality in humans.					
17. Gay men do not dislike women any more than heterosexual men dislike women.					
18. Marriage between gay people should be legalized.					
19. Gay men are overly promiscuous.					
20. Most problems that face gay persons have come from their status as an oppressed minority, not from their homosexuality per se.					
21. Gay persons' lives are not as fulfilling as heterosexuals' lives.					

22. Children should be taught that being gay is a normal and healthy way for people to be.					
23. Homosexuality is a sexual perversion.					
24. I wouldn't mind if my boss knew that I was gay.					
25. When I tell my nongay friends about my homosexuality, I do not worry that they will try to remember things about me that would make me appear to fit the stereotype of homosexual.					
26. When I am sexually attracted to another gay man, I do not mind if someone else knows how I feel.					
27. When women know of my homosexuality, I am afraid they will not relate to me as a man.					
28. I would not mind if my neighbors knew that I am gay.					
29. It is important for me to conceal the fact that I am gay from most people.					
30. If my straight friends knew of my homosexuality, I would be uncomfortable.					
31. If men knew of my homosexuality, I'm afraid they would begin to avoid me.					
32. If it were made public that I am gay, I would be extremely unhappy.					
33. If my peers knew of my homosexuality, I am afraid that many would not want to be friends with me.					
34. If others knew of my homosexuality, I wouldn't worry particularly that they would think of me as effeminate.					
35. When I think about coming-out to peers, I am afraid they will pay more attention to my body movements and voice inflections.					
36. I am afraid that people will harass me if I come out more publicly.					

APPENDIX C

HAART Medication Adherence Question;

	Very Poor	Poor	Fair	Good	Very Good	Excellent
Over the past month, how would you rate your ability to take your HAART medication as prescribed by your physician?	1	2	3	4	5	6

APPENDIX D

University of Illinois at Chicago Consent for Participation in Research

Title of Project: EXAMINING THE SPIRITUAL, EMOTIONAL, AND
PHYSICAL HEALTH ASSOCIATIONS IN SELF-IDENTIFIED
GAY MEN LIVING WITH HIV/AIDS

Principal Investigator: Anthony Oltean, MSW LCSW CADC
Jane Addams College of Social Work
University of Illinois at Chicago
(773) 620-2023; aolteal@uic.edu

Dissertation Chair: Christopher Mitchell, DSW LCSW
Jane Addams College of Social Work
University of Illinois at Chicago
(312) 996-8509; cgm@uic.edu

1. **Purpose of the Study:** The purpose of this research study is to explore how spirituality may impact and/or moderate existing associations between internalized homonegativity and HAART medication adherence in gay men living in the greater metro area of Chicago, IL.
2. **Procedures to be followed:** You will be asked to answer 50 questions on a survey.
3. **Discomforts and Risks:** There are no risks in participating in this research beyond those experienced in everyday life. However, some of the questions are personal and might cause mild discomfort.
4. **Benefits:** Although there are no direct benefits associated with participation in this study, this research might provide a better understanding how social service organizations may better serve gay men living with HIV/AIDS.
5. **Duration:** It will take about 30 minutes to complete the survey.
6. **Statement of Confidentiality:** Your participation in this research is confidential. The survey does not ask for any information that would identify who the responses belong to. In the event of any publication or presentation resulting from the research, no personally identifiable information will be shared because your name is in no way linked to your responses.
7. **Right to Ask Questions:** Please contact Anthony Oltean at (773) 620-2023; aolteal@uic.edu with questions, complaints or concerns about this research. Additionally, if you feel this study has harmed you or you have any questions about your rights as a research subject, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 (local) or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.
8. **Voluntary Participation:** Your decision to be in this research is voluntary. You can stop at any time. You do not have to answer any questions you do not want to answer. Refusal to take part in or withdrawing from this study will involve no penalty or loss of benefits you would receive otherwise. **Completion and submission of the survey implies that you have read the information in this form and consent to take part in the research. You must be 18 years of age or older to take part in this research study.**

APPENDIX E

PARTICIPANTS NEEDED FOR RESEARCH STUDY ON HIV+ GAY MEN AND SPIRITUALITY

A Researcher from the University of Illinois at Chicago Jane Addams College of Social Work is looking for HIV + gay men, living in Chicago, to take part in an exploratory research study regarding the potential connections between homophobia, non-denominational spirituality, and HIV medication adherence.

As a participant in this voluntary study, you will be asked to complete an anonymous questionnaire through an online service. This survey will take approximately 20-30 minutes to complete.

For more information about this study, or to volunteer for this study, please type the following URL into your Internet browser and follow the instructions:

<http://spiritualemotionalphysicalsurvey.com>

Or you can contact me directly at the confidential email address below for a link to the survey. Thank your for considering participation.

Anthony Oltean, MSW LSCW CADC

Jane Addams College of Social Work
University of Illinois at Chicago
Email: aolteal@uic.edu

APPENDIX F

UNIVERSITY OF ILLINOIS AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice Initial Review (Response To Modifications)

October 26, 2009

Anthony Oltean, MSW, BSW
Jane Addams School of Social Work
1 E. 8th Street, Apt. 1005
M/C 309
Chicago, IL 60605
Phone: (773) 620-2023 / Fax: (773) 465-5771

RE: Protocol # 2009-0845
**“Spirituality, Internalized Homonegativity, and Medication Adherence in
Gay Men**
Living with HIV/AIDS”

Dear Mr. Oltean:

Your Initial Review (Response To Modifications) was reviewed and approved by the Expedited review process on October 15, 2009. You may now begin your research

Please note the following information about your approved research protocol:

Protocol Approval Period: October 15, 2009 - October 14, 2010
Approved Subject Enrollment #: 500
Additional Determinations for Research Involving Minors: These determinations have not been made for this study since it has not been approved for enrollment of minors.
Performance Sites: UIC
Sponsor: None
Research Protocol(s):

a) Research Protocol; Version 2; 10/05/2009

Recruitment Material(s):

a) "You Can Help!" (no footer)

Informed Consent(s):

- a) Waiver of Signed Consent Document granted under 45 CFR 46.117
- b) Informed Consent (no footer)

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific category:

(7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
09/23/2009	Initial Review	Expedited	09/28/2009	Modifications Required
10/14/2009	Response To Modifications	Expedited	10/15/2009	Approved

Please remember to:

→ Use your **research protocol number** (2009-0845) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,
"UIC Investigator Responsibilities, Protection of Human Research Subjects"

Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 996-9299. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Marissa Benni-Weis, M.S.
IRB Coordinator, IRB # 2
Office for the Protection of Research

Subjects

Enclosure(s):

- 1. UIC Investigator Responsibilities, Protection of Human Research Subjects**
- 2. Informed Consent Document(s):**
 - a) Informed Consent (no footer)
- 3. Recruiting Material(s):**
 - a) "You Can Help!" (no footer)

cc: Creasie Finney Hairston, Jane Addams School of Social Work, M/C 309
Christopher Mitchell, Jane Addams School of Social Work, M/C 309

APPENDIX G

- A. Screener Questions: Located on the screen following informed consent (See APPENDIX B).
1. Are you at least 18 years old?
 2. What is your gender?
 3. What is your sexual orientation?
 4. What is your HIV status?
 5. Have you been prescribed highly active antiretroviral treatment (HAART) within the last year?"
 6. Have you taken *at least* one dose of your HAART medication within the last month?"
- B. RNHAI
- C. DSES
- D. Adherence Question
- E. Demographic Questions:
1. Age
 2. Race and Ethnicity
 3. Employment Status
 4. Income
 5. Housing Status
 6. Insurance Status

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Dual Diagnosis/Mentally Illness Substance Abuse (MISA) Group and Individual Counseling; Cognitive Behavioral Therapy (CBT); Motivational Enhancing Therapy (MET) & Brief Solution Focused (BSF) intervention; LGBTQ Specialty Population Focus.

PRACTICE AND PROFESSIONAL EXPERIENCE

2011-Present Private Psychotherapy Practice: www.anthonioltean.com

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2010-2011 Clinical Supervisor of Mentally Ill Substance Abuse (MISA)
Units, Haymarket Treatment Center, Chicago IL.

2005-2010 Addictions Therapist, Housing Opportunities for Women,
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2002-2003 Addictions Therapist, ComPsych Corporation, Chicago, IL.

UNIVERSITY TEACHING EXPERIENCE

- 2012-Spring Instructor, Northeastern Illinois University (Social Work)
BSW Course: *Practice 1*
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BSW Course: *Human Behavior in the Social Environment*
- 2011 Instructor, Northeastern Illinois University (Social Work)
BSW Course: *Social Welfare Policy*
- 2008 Instructor, University of Illinois at Chicago (Social Work)
MSW Course: *Sexual Minority Communities*

ILLINOIS LICENSES AND CREDENTIALS

- 2011 Mental Illness Substance Abuse Counselor (MISA1)
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