Quality of Life in Older African American Men Living with HIV/AIDS:

A Structural Equation Analysis

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This thesis titled

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A Structural Equation Analysis

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Abstract

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Quality of Life in Older African American Men Living with HIV/AIDS:
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Older HIV-positive African American men have unique needs stemming from added risk factors for diabetes mellitus, hypertension, stigma, and limitations imposed by psychosocial disparities. These complex experiences may adversely affect the quality of life of older HIV-positive African American men. Yet, it is unclear whether an existing quality of life model (CIQOL; Heckman, 2003) will generalize to older HIV-positive African American men. Structural equation modeling analyses assessed the generalizability of two models to 167 HIV-positive older African American and Caucasian men between the ages of 48 and 73 years. The first model (Adapted CIQOL Model) was adapted from the Chronic Illness Quality of Life Model (CIQOL; Heckman, 2003). The second model is a revised version of the Adapted CIQOL Model in that the causal relationships were modified based on the empirical literature on African Americans (The Revised CIQOL). The Adapted CIQOL Model and Revised CIQOL Model demonstrated goodness of fit for both samples. The findings’ implications are discussed.

Approved: __________________________________________________________

John P. Garske

Professor Emeritus of Psychology
This paper is dedicated to my country Haiti, and all the lives that were lost during the 2010 earthquake. I would like to especially dedicate this paper to Pappy and Mommy Samedi, who nurtured and cultivated my love of science at a very young age. Their work and dedication in the field of medicine has shaped my passion within the health sciences. I hope to pass on the torch of inspiration for generations to come. You are both missed, but never forgotten.
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Table of Contents

Abstract ................................................................................................................................. 3

Dedication ............................................................................................................................. 4

Acknowledgements ............................................................................................................... 5

List of Tables ......................................................................................................................... 9

Introduction ........................................................................................................................ 11

Quality of Life in Older Adults Living with HIV/AIDS ...................................................... 14

Existing Quality of Life Literature on Older HIV-Positive African American Men. .......... 18

Objectives, Hypotheses, and Rationales for the Present Study ......................................... 22

Methods ............................................................................................................................... 24

Participants and Procedures ............................................................................................... 24

The Modified Mini-Mental State Examination (3MS, Teng and Chui, 1987). ... 25

Beck Depression Inventory-II (BDI-II, Beck et al., 1996). ................................................. 25

Assessment Instruments ....................................................................................................... 26

Demographic questionnaire. ............................................................................................... 27

Criterion Variable. ............................................................................................................... 27

Predictor Variables .............................................................................................................. 27

Results ................................................................................................................................. 31

Data Screening .................................................................................................................... 31

Sample Characteristics and Race-Related Differences ...................................................... 31
Bivariate Correlations among the Adapted CIQOL Model Variables and General Well-Being .......................... 33
Description of Models ........................................................................................................... 33
Proposed analyses for testing goodness of fit ................................................................. 34
Assessment of Fit of the Adapted CIQOL Model to Older Adults Living with HIV/AIDS .................................................................................................................. 35
Direct effects among older Caucasian men living with HIV/AIDS .............................. 36
Indirect effects among older Caucasian men living with HIV/AIDS .......................... 36
Direct effects among older African American men living with HIV/AIDS ............ 37
Indirect effects among older African American men living with HIV/AIDS ........... 37
Assessment of Fit for the Revised CIQOL Model for Older Adults Living with HIV/AIDS .................................................................................................................. 37
Revised CIQOL Model for older HIV-positive Caucasian men .............................. 38
Revised CIQOL Model for older HIV-positive African American men ............... 39
Chi Square Change ................................................................................................................ 40
Summary: ................................................................................................................................. 41
Discussion ................................................................................................................................ 42
Adapted CIQOL Model ......................................................................................................... 42
Revised CIQOL Model ......................................................................................................... 48
Limitations ............................................................................................................................. 56
References ............................................................................................................................... 58
Appendix A- Demographics ................................................................................................. 81
Appendix B - Global Well-Being Scale ................................................................. 87
Appendix C - Shame Concerning HIV Scale ......................................................... 88
Appendix D - Barriers to Health Care and Social Services Scale .......................... 89
Appendix E - Physical Well-Being Scale ............................................................... 90
Appendix F - Provision of Social Relation Scale ................................................. 91
Appendix G - Engagement Coping Scale ............................................................. 93
Appendix H - Study Design Flowchart for Project Reflect .................................... 96
List of Tables

Table 1. Participant Characteristics…………………………………………………………..70
Table 2. Observed and Adjusted Mean Scores on the Adapted CIQOL by Race………71
Table 3. Summary of Intercorrelations for the Adapted CIQOL Model variables……..72
Table 4. Descriptive Statistics: Continuous Variables……………………………………..73
<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The Original Chronic Illness Quality of Life Model</td>
<td>74</td>
</tr>
<tr>
<td>2</td>
<td>The Adapted Chronic Illness Quality of Life Model (Hypothesized)</td>
<td>75</td>
</tr>
<tr>
<td>3</td>
<td>The Revised Chronic Illness Quality of Life Model (Hypothesized)</td>
<td>76</td>
</tr>
<tr>
<td>4</td>
<td>Model Fit of the Adapted CIQOL Model to Older HIV-Positive Caucasian Men</td>
<td>77</td>
</tr>
<tr>
<td>5</td>
<td>Model Fit of the Adapted CIQOL Model to Older HIV-Positive African American Men</td>
<td>78</td>
</tr>
<tr>
<td>6</td>
<td>Model Fit of the Revised CIQOL Model to Older HIV-Positive Caucasian Men</td>
<td>79</td>
</tr>
<tr>
<td>7</td>
<td>Model Fit of the Revised CIQOL Model to Older HIV-Positive African American Men</td>
<td>80</td>
</tr>
</tbody>
</table>
Introduction

As of 2007, 118,000 persons were 50 years of age or older when they were diagnosed with AIDS, accounting for 12% of all AIDS cases in the United States. Older adults account for 15% of all new cases of HIV/AIDS, 24% of all persons living with HIV/AIDS, and 35% of all AIDS-related deaths in this country (Center for Disease Control, 2007). Moreover, it is estimated that by the year 2015, 50% of all persons living with HIV/AIDS in the United States will be 50 years of age or older (United States Senate Special Committee on Aging, 2005).

While HIV/AIDS affects all demographic groups in the United States, since the mid-1990s, HIV/AIDS has disproportionately affected African Americans. For example, African Americans account for 13% of the U.S. population (United States Census Bureau, 2009) but comprise 49% of all new cases of HIV/AIDS in the country and 42% of current cases as of 2007 (CDC, 2009a). African American men have the highest incidence rate of HIV infection compared to any other ethnic/racial group in the United States (e.g., 115.7 cases per 100,000; CDC, 2009b). Moreover, African Americans who are 50 years of age and older (51.7/100,000) experienced an increased incidence rate for HIV as high as 12 times the rate of older Caucasians, and five times that of Hispanics (4.2/100,000; Linley et al., 2007).

Two factors appear to account for the increase in HIV/AIDS cases in older adults. First, increasingly efficacious antiretroviral therapies and improved clinical care have extended survival periods in HIV-infected persons (Justice & Weissman, 1998; Kalichman, Ramachandran, & Ostrow, 1999; Paul, Martin, Lu, & Lin, 2007). Highly
Active Anti-Retroviral Therapy (HAART), one of the most recent advances in HIV/AIDS medications, has prolonged the period of survival; many persons who contracted HIV in their 30s and 40s are living well into their 50s, 60s, and beyond (Justice & Weissman, 1998; Kalichman, Ramachandran, & Ostrow, 1999). HAART has been shown to lower levels of HIV Ribonucleic acid (RNA) and increase survival rates up to approximately 24 years compared to the nine year prognosis that was expected during the early 1990s (Fan, 2000).

The prevalence of risky behaviors, such as drug use and sexual promiscuity, is a second factor contributing to the growing number of new HIV infections (Altschuler, 2004; Araujo, Mohr, & McKinlay, 2004; Avis, 2000; Casau, 2005; Emlet, 2006; Inungu, Mokotoff, & Kent, 2001; Kwiatkowski & Booth, 2003; Lovejoy et. al, 2008; Stall & Catania, 1994; Winningham, 2004). More than 16% of AIDS cases among persons 50 years and older are attributed to injection drug use (CDC, 2010a).

Data collected from 1989 through 2002 by the CDC demonstrated seven modes of transmission for older African American men who self-identified as heterosexual: 44% contracted HIV/AIDS through IV/drug use, 21% through heterosexual contact, 2% through receipt of contaminated blood and or/contaminated tissue, .3% due to complications related to hemophilia, .2% through bisexual contact/IV drug use, .1% through gay/bisexual contact, and 32.4% reported not knowing the source of their HIV (CDC, 2010b). For older African American men who self-identified as gay, there were two major modes of HIV/AIDS transmission: 91% contracted HIV/AIDS through gay/bisexual contact, and 9% through bisexual contact/IV drug use (CDC, 2010b). Also,
among bisexual older African American men, 85% contracted HIV/IDS through gay/bisexual contact, and 15% through gay/bisexual contact and drug use (CDC, 2010b).

For older African American men who identified as gay or bisexual, HIV/AIDS was incurred primarily through gay/bisexual sexual contact, with fewer heterosexual men acquiring HIV/AIDS through sexual contact. Furthermore, drug use was a common route of infection for all the men involved in the CDC survey, regardless of their sexual orientation. The above findings can inform the tailoring of preventative campaigns for older African American men living with HIV/AIDS.

In addition to tailoring interventions, further efforts to reduce the varied risk factors for older HIV-positive African American men would benefit from a focus on their bio-psycho-social experiences. African American men are particularly at risk for: (1) developing non-AIDS related chronic health conditions, such as diabetes, hypertension, cancer, liver disease, and osteoarthritis (Justice, 2007; Rawlings & Masters, 2008); (2) receiving less frequent and lower quality medical care (e.g., Anderson & Mitchell, 2000; Angelino, 2002; Anonymous, 2002; Borowsky et al., 2000; Cargill, Stone, & Johnson, 2004; Dunlop, Song, Lyons, Manheim, & Chang, 2003); and (3) experiencing greater amounts of age discrimination and AIDS-related stigma than their Caucasian counterparts (e.g., CDC, 2010c, Mason, Simoni, Marks, Johnson & Richardson, 1997). These factors might aggravate the already difficult experiences resulting from HIV/AIDS, and may affect the quality of life of older HIV-positive African American men.
Quality of Life in Older Adults Living with HIV/AIDS

According to the World Health Organization (WHO), quality of life refers to a “state of complete physical, mental and social well-being, and not merely the absence of illness (1948, p. 1).” In general, quality of life models describe relationships or associations among constructs that can affect the individuals’ health experience. Illness-specific quality of life models are noteworthy because they can inform health providers and researchers about which factors have the greatest impact on patients’ lives. Quality of life models can also enable the tailoring of interventions for persons living with chronic health conditions. Three quality of life models have been used for individuals living with HIV/AIDS: (1) The Health-Related Quality of Life Model (Wilson & Cleary, 1995); (2) Schmitz & Crystal’s Quality of Life Model (2002); and (3) The Chronic Illness Quality of Life Model (CIQOL: Heckman, 2003).

The Health-Related Quality of Life Model (HRQOL: Wilson & Cleary, 1995) assesses physiological factors, symptom status, functional health, general health perceptions, and overall quality of life. Sousa and Kwok (2006) examined the variables in the Health-Related Quality of Life Model through structural equation modeling and found adequate fit with a population living with HIV/AIDS. One limitation of the Health-Related Quality of Life Model (Wilson & Cleary, 1995) is that it assumes the term “quality of life” to be characterized primarily by functional capacity (i.e., health). Such an emphasis on functional capacity implies that the term “quality of life” means a “lack of disease.”
Studies indicate that individuals are capable of experiencing well-being despite the experience of illness, indicating that additional factors besides physical ailments predict quality of life (Albrecht & Devlieger, 1999; Guyatt, Jaeschke, Feeny, & Patrick, 1996; Kagawa-Singer, 2000; Moch, 1990, 1998). Furthermore, the Health-Related Quality of Life Model (Wilson & Cleary, 1995) excluded psychosocial factors such as social support, coping style, and AIDS-related discrimination, which have also been shown to predict quality of life (Heckman, 2003; Heckman 2004).

In their quality of life model, Schmitz and Crystal (2000) used structural equation modeling to assess interrelationships among AIDS symptom burden (i.e., low CD4 T-cell count), HIV discrimination, rejection by family, presence of support, satisfaction with support, feeling of being loved and understood, coping style, and psychological distress (another term used to describe well-being or quality of life). Examination of the interrelationships produced an overall good fit of the data to the structural model (Schmitz & Crystal, 2000).

In a sample that comprised of Caucasian and African Americans, Schmitz and Crystal (2000) found that greater reports of AIDS symptom burden was associated with greater reports of psychological distress, avoidant coping styles, HIV discrimination, rejection of by family. Additionally, fewer reports of AIDS symptom burden were associated with increased use of active coping styles. Increased rejection by family was associated with more active coping and lowered social support (Schmitz & Crystal, 2000).
Increased reports of HIV discrimination predicted increased use of active coping styles and lowered social support. More social support predicted fewer incidences of distress, greater use of active coping, and the reduced use of avoidant coping styles. Greater avoidant coping significantly predicted greater distress, while active coping significantly predicted a reduction in distress (Schmitz & Crystal, 2000).

Schmitz and Crystal’s (2000) quality of life model was one of the few to incorporate the individual’s coping style and social support network in the assessment of quality of life. However, the model (Schmitz & Crystal, 2000) only predicted quality of life through social support, coping, and AIDS-related distress and symptomatology, and did not examine how access to services might impact an individual’s quality of life. Previous studies tied decreased access to care to poorer health outcomes for older African Americans living with HIV/AIDS (Cargill & Stone, 2001) and reduced quality of life for individuals living with HIV/AIDS (Heckman, 2003), suggesting the importance of incorporating access to care in a quality of life model for individuals living with HIV/AIDS.

In contrast to the two above-mentioned models (i.e., Schmitz & Crystal, 2000; Wilson & Cleary, 1995), the Chronic Illness Quality of Life Model (CIQOL; Heckman, 2003) incorporated bio-psycho-social approach in the examination of the quality of life of individuals living with HIV/AIDS. According to the CIQOL Model, satisfaction with life (SWL) is predicted by one’s experiences with AIDS-related discrimination, barriers to care, physical well-being, social support, and an engagement coping (i.e., active problem
solving). Structural equation modeling (SEM) demonstrated good fit of the CIQOL model to a sample comprised primarily of Caucasian participants (72%).

According to the CIQOL Model, greater experiences with AIDS-related discrimination was associated with greater barriers to care, poorer physical well-being, and lowered social support. Moreover, more barriers to care were associated with poorer physical well-being and decreased social support. Finally, the model demonstrated a positive relationship between perceived social and engagement coping (Please see Figure 1). The CIQOL Model was also applied to older adults living with HIV/AIDS (e.g., Heckman, Kochman, Sikkema, 2004).

While the CIQOL Model demonstrated a good fit to individuals living with HIV/AIDS, it was unclear whether the relationships found in the CIQOL Model would apply to older HIV-positive African American men. First, African Americans in general comprised a small portion (19%) of the participants included in the study (Heckman, 2003). Second, the results of the CIQOL study characterized the individuals as either “White” or “non-White,” in a sample consisting of Caucasians, African Americans, Latinos, and Multiracial individuals, making it impossible to assess specific effects due to racial differences. Thus, further research is needed to examine if the CIQOL Model might generalize to older African American men living with HIV/AIDS. Although barriers to care predicted general well-being in the CIQOL model, barriers to care did not predict general well-being in existing studies on African Americans (Adams, 1997; Diener, Sandvik, Seidlitz, & Diener, 1993; Jackson & Adams, 1992). As a result, it is posited that a revised version of the CIQOL model would modify causal pathways between the
variables as it relates to African American culture, as it would be useful for predicting quality of life in older HIV-positive African American men.

Existing Quality of Life Literature on Older HIV-Positive African American Men

The following is a review of the interrelationships among HIV-related shame, social support, barriers to care, engagement coping, physical well-being, and quality of life relating to African Americans. The literature suggests that African Americans have unique beliefs about what it means to be infected with HIV. HIV/AIDS status was significantly associated with being identified as gay and HIV-related shame or stigma experiences (Hays & Peterson, 1994; Stokes & Peterson, 1998). HIV-related shame is defined as a person’s internalization of perceived judgment (Tracey, Robins, & Tangney, 2007) and is also referred to as internalized stigma. In one quality of life study on HIV-positive African American men, HIV-related shame accounted for 40.8% of the variance in a regression model predicting quality of life (Buseh, Kelber, Stevens, & Park, 2008). Those who endorsed greater experiences with HIV-related shame reported poorer quality of life (Buseh, Kelber, Stevens, & Park, 2008). This finding contrasted with Heckman’s (2003) study, which found no relationship between shame and quality of life.

The stigmatizing nature of HIV/AIDS was found to have negative impacts on social relations (Snowden, 2001). In one study, African American men who reported increased shame endorsed fewer social support seeking behaviors compared to Caucasian men (Snowden, 2001). The HIV-positive African American men in the study believed they would be rejected upon seeking social support. Their belief informed their social support seeking behavior (Snowden, 2001). The findings demonstrated how strongly
one’s HIV-related shameful experiences could limit access to social support (Snowden, 2001).

Evidence for the impact of shame on social support was found among older HIV-positive African Americans (e.g., Ajuluchukwu, Christian, & Jenkins, 2003; CDC, 2010a) and healthy African Americans (e.g., Kennamer, Honnold, Bradford, & Hendricks, 2000). In both studies, participants who reported more experiences of shame had weaker social support networks. The findings support the negative relationship found between AIDS-related discrimination and social support in the CIQOL Model (Heckman, 2003).

Older African Americans living with HIV/AIDS also reported substantial barriers to care (Arnold, Hsu, Pipkin, McFarland, & Rutherford, 2009; Hallfors, 2009; Robert & Lee, 2002). A barrier to care refers to limited access to accommodations for individuals living with HIV/AIDS (e.g., inadequate funds, lack of access to services, and limited resources). More experiences with barriers to care were associated with decreased physical well-being for HIV-positive African Americans of various age groups (Arnold, Hsu, Pipkin, McFarland, & Rutherford, 2009; Hallfors, 2009) and healthy older African Americans (Robert & Lee, 2002).

Although the CIQOL Model demonstrated a negative relationship between barriers to care and quality of life for a sample comprised primarily of HIV-positive Caucasians (Heckman, 2003), existing studies on African Americans’ quality of life found no direct relationship between barriers to care and quality of life (Adams, 1997; Diener, Sandvik, Seidlitz, & Diener, 1993; Jackson & Adams, 1992). Even when African
Americans reported increased disadvantages pertaining to care, they reported increased life satisfaction (Adams, 1997; Diener, Sandvik, Seidlitz, & Diener, 1993; Jackson & Adams, 1992). The quality of life literature on African Americans suggests that the impact of barriers to care is mitigated by support from family, friends, and members of one’s church community (Chatters, 1988; Coke & Twaite, 1995; Ortega, Crutchfield, & Rushing, 1983).

The literature on African Americans also demonstrated the seminal role of social support on engagement coping styles (active involvement in solving problems related to HIV). Disengaged coping styles, such as the avoidance of medical appointments, were linked with less social support for HIV positive African Americans compared to HIV-positive Caucasians (Catz, McClure, Jones, & Brantley, 1999). Those who practiced engagement coping were also more effective in managing their barriers to care, which led to greater reports of life satisfaction (Antoni et al., 1992; Campbell et al., 2007; Penedo et al., 1996). In another study, individuals who utilized more engagement coping reported reduced HIV-related shame, and higher quality of life ratings (Buseh et al., 2006). The finding suggests that engagement coping could mitigate the negative effects of stigma on the quality of life of HIV-positive African American men. These findings lend support to the need for models that are culturally sensitive.

The aforementioned studies discussed the existing quality of life literature for African Americans, particularly regarding the effects of psychosocial factors on the quality of life of HIV-positive African American men. Due to the scarcity of quality of life literature on older African American men living with HIV/AIDS, much of the quality
of life literature used in this review was based on samples of African Americans that represented various age groups or studies that did not define HIV-status for African Americans. Only one article was found on the quality of life of HIV-positive African American men representing various age groups (e.g., Buseh et al., 2008), demonstrating the paucity of peer-reviewed research in this area. The dearth of literature and the unavailability of quality of life models for African American men living with HIV/AIDS suggest a need for further investigation of older HIV-positive African American men, as there are currently no quality of life models to address the unique needs of older HIV-positive African American men.

The current study assessed the fit of an adapted version of the CIQOL Model to older Caucasian and African American men living with HIV/AIDS (see Figure 2.0 for the adapted version of the CIQOL Model). The current archival study lacked the original constructs that were used in Heckman’s study (2003) (e.g., AIDS-related shame and Satisfaction with Life). As a result, the adapted version of the CIQOL Model differs from the original in that the construct AIDS-related discrimination was substituted with HIV-related shame, and the variable satisfaction with life, was substituted with general well-being. The findings from the current study can inform the development of culturally appropriate quality of life models and would guide the implementation of interventions for older African American men living with HIV/AIDS.
Objectives, Hypotheses, and Rationales for the Present Study

Objective 1: To assess the goodness of fit of the Adapted CIQOL Model for older Caucasian men living with HIV/AIDS. The Adapted CIQOL Model has the same causal relationships as the CIQOL Model. However, the two variables from the CIQOL Model, AIDS-Related Discrimination and Satisfaction with Life, were replaced with HIV-Related Shame and General Well-Being, respectively.

Hypothesis 1: The Adapted CIQOL Model will explain a significant amount of variance in General Well-Being in older Caucasian men living with HIV/AIDS.

Hypothesis 1 Rationale: It is posited that the Adapted CIQOL Model will apply to older Caucasian men living with HIV/AIDS because excellent fit to the CIQOL model was demonstrated among a sample comprised primarily of older HIV-positive Caucasian men (Original CIQOL Model; Heckman, 2003). Furthermore, in a study conducted by Heckman and colleagues (2004), AIDS-Related Discrimination, Physical Well-Being, Engagement Coping, Barriers to Care, and perceptions of Social Support were found to adequately characterize Satisfaction with Life for older Caucasians living with HIV.

Objective 2: Given that the CIQOL Model has not been tested with African American men, goodness of fit of the Adapted CIQOL Model will be examined for older HIV-positive African American men. Furthermore, additional relationships will be incorporated based on the literature on African Americans in the assembly of a new model. The new model will be referred to as the Revised CIQOL Model, because it is a revision of the Adapted CIQOL Model in that the relationships were modified based on the existing quality of literature of African Americans.
Objective 2 Rationale: The quality of life research specific to African Americans demonstrated relationships that were not represented in the CIQOL Model (Please see figure 3.0 for the Revised CIQOL Model). According to quality of life literature on African Americans, HIV-Related Shame predicted General Well-Being; Engagement Coping mediated HIV-Related Shame and General Well-Being; Barriers to Care did not predict General Well-Being; Engagement Coping mediated the relationship between Barriers to Care and General Well-Being; and Physical Well-Being mediated Social Support and General Well-Being (Adams, 1997; Batts et al., 2001; Buseh, 2008; Buseh, Kelber, Stevens, & Park, 2006; Campbell et al., 2007; Cole, Kemeny, & Taylor, 1997; Hillsbriggs et al., 2002; Jackson & Adams, 1992; Penedo, 2001).
Methods

Participants and Procedures

The participants in the current archival study included 167 men who self-identified as HIV positive (n = 85 Caucasian/non-Hispanic, n = 82 African American/non-Hispanic). The participants were recruited from New York City, Columbus, OH and Cincinnati, OH. The original study examined whether a coping improvement intervention would contribute to a reduction in depressive symptoms among 295 men and women who identified as HIV-positive. The study’s protocol was approved by each study site’s IRB, written informed consent was obtained from all participants, and no adverse events were reported.

AIDS service organizations (ASOs) in the three cities recruited participants by distributing recruitment brochures to their HIV-infected clients through regular mail, face-to-face interactions, and by placing brochures in “high-traffic” areas of the facility (e.g., reception areas). Participants were also recruited through community outreach efforts in which a recruitment specialist made presentations describing the study at various gerontological and health-care organizations. Finally, recruitment advertisements were placed in AIDS-related magazines and newsletters distributed in each city. Respondents who expressed interest to their caseworkers were provided with contact information for Yale and Ohio University.

Between November 2005 and February 2008, 405 individuals contacted the study institutions via toll-free telephone numbers to inquire into enrollment. Individuals who called the study site received detailed information about the nature of the study. A face-
to-face eligibility-screening interview was administered to potential participants at the individual’s ASO or a local community health center. The study’s eligibility interview included two assessments:

**The Modified Mini-Mental State Examination (3MS, Teng and Chui, 1987).**

The 3MS measured abstract reasoning, executive functioning, and cognitive functioning. The 3MS was used because it is more reliable and sensitive to the detection of dementia than the briefer Mini-Mental State Examination (Folstein et al., 1975). Scores on the 3MS range from 0 to 100, with lower scores suggested greater cognitive compromise.

**Beck Depression Inventory-II (BDI-II, Beck et al., 1996).** The 21-item BDI-II inventory measured cognitive, affective, and somatic symptoms of clinical depression. Each item used a 4-point scale (0–3) and total possible scores ranged from 0 to 63. Internal consistency was determined to be good (α=.88).

Of the 405 individuals who expressed interest in the study, 295 satisfied eligibility requirements and were randomized to one of three study conditions. Appendix H displays the participant flow reflective of the study. All participants satisfied the following inclusion criteria: (1) Fifty-years of age or older; (2) Diagnosis of HIV infection or AIDS; (3) BDI-II score of 10 or higher; and (4) Score of 75 or greater on the 3MS. A minimum value of 10 on the BDI-II ensured that participants had a minimally elevated number of depressive symptoms that had the potential to be reduced by the study’s interventions. Participants were excluded if they were suspected of having severe
cognitive compromise, difficulty completing A-CASI assessments and/or participating in intervention activities, and a cutoff score of 75 on the 3MS.

Individuals were not excluded if they had alcohol or substance use disorders, active bipolar disorder, psychotic symptoms, or individuals receiving psychotherapy because it sought to assemble a more diverse and inclusive sample representative of HIV-infected older adults likely to participate in AIDS-mental health interventions offered in community settings. The number of participants selected in the archival study was determined by the availability of Caucasian and African American male participants. Past statistical literature on structural equation modeling suggest adequate power to run goodness of fit test assuming that there are at least 30 participants per variable (Geweke & Singleton, 1980).

Assessment Instruments

Participants completed the study’s pre-intervention assessment using audio-computer assisted self-interviews (A-CASI) in a community-based setting (either their ASO or a local community health center). The computer provided a visual display and audio reading of each question and its response options. Participants used audio headsets to minimize interruptions in the environment and circumvent literacy limitations. A-CASI assessment techniques increased participants’ understanding of questions, honesty when answering sensitive questions, and curtailed skipped answers (Schroder, Carey, & Vanable, 2003). The pre-intervention assessment instrument took approximately 90 minutes to complete. Participants received $30 for completing the pre-intervention assessment. The pre-intervention assessments contained the following measures:
**Demographic questionnaire.** Participants provided their age, education, employment status, annual income, ethnicity, HIV health status (HIV positive/asymptomatic, HIV positive/symptomatic, or living with AIDS), current living arrangement, the number of miles they must travel to attain services, and their recollection of how they contracted HIV. Except for the difference in the dependent variable satisfaction with life and the predictor variable AIDS-related discrimination utilized in the CIQOL Model, the variables utilized in the current archival study are identical to those used in the original CIQOL study (Heckman, 2003).

**Criterion Variable.**

*Global Well-Being Scale (FAHI; Cella, McCain, Peterman, Mo, & Wolen, 1996).* The Global Well-Being subscale of the FAHI assessed global well-being in participants. Participants indicated how true each statement was for them (sample item: “I am enjoying the things I usually do for fun”). Responses were measured using a five-point scale from 0 (not at all like me) to 4 (very much like me). Good internal consistency was demonstrated (α = .89).

**Predictor Variables.**

*Shame Concerning HIV Infection Scale (Sikkema, Hansen, Meade, Kochman, & Fox, 2009).* The shame-concerning HIV infection scale assessed the extent one perceived instances of stigma pertaining to their HIV/AIDS status. Participants completed a 14-item scale that assessed perceptions of shame due to their HIV-seropositive status (sample item: “It is hard to tell other people about my infection”). Responses to the individual items were measured using a five-point scale from 0 (not at
all like me) to 4 (very much like me). Excellent internal consistency was determined ($\alpha = .93$). Excellent internal consistency estimates were also demonstrated in a study that was predominantly comprised of HIV-positive African Americans sexual abuse survivors (Sikkema, Hansen, Meade, Kochman, & Fox, 2009) ($\alpha = .92$).

**The Barriers to Health Care and Social Services Scale (BACS; Heckman, Somlai, Kelly, Stevenson, & Galdabini, 1996).** The 13-item BACS assessed the severity of psychological, geographic, and resource-related barriers that precluded participants from accessing health care and social services (sample item: “The lack of health care professionals who are adequately trained and competent in HIV or AIDS care”). Each item used a 4-point scale from 1 (no problem at all) to 4 (major problem). The 13 items were summed and averaged to create a single index of barriers to health care. The subscale demonstrated good internal consistency ($\alpha = .89$). In Heckman’s (2003) study, the barriers to health care scale demonstrated excellent internal consistent to a sample based in urban and rural locations in Wisconsin ($\alpha = .93$). The barriers to health care scale demonstrated good internal consistency ($\alpha = .86$) to participants living in rural areas in Wisconsin (Heckman, Somlai, Kelly, Stevenson, & Galdabini, 1996).

**Physical Well-Being (Functional Assessment of Human Immunodeficiency Virus Infection (FAHI); Cella, McCain, Peterman, Mo, & Wolen, 1996).** The 13-item Physical Well-Being subscale of the FAHI quality of life instrument assessed the extent that an individual was impacted by their physical symptoms (sample item: “I have a lack of energy”). Each item used a 5-point response scale from 0 (not at all) to 4 (very much). Items were reversed scored with total scores ranging from 0-4. Higher scores indicated
improved physical well-being. The subscale demonstrated excellent internal consistency \((\alpha = .91)\). The physical well-being subscale also demonstrated excellent internal consistency in Heckman’s (2003) study \((\alpha = .90)\). The construct validity of the physical well-being subscale was computed by comparing the physical well-being scale with the fatigue scale subscale of the Profile of Mood State \((r = -0.60)\) (POMS; Peterman, Cella, Mo, McCain, 1997).

**Provision of Social Relations Scale (PSRS; Turner, Frankel, & Levin, 1983).**
The 15-item PSRS assessed participants’ perception of social support from family members and friends (sample item: “I feel very close to some of my friends”). Responses to individual items were measured with a five-point scale from 1 (very much like me) to 5 (not at all like me). Items 1-14 were reversed scored, higher scores indicated greater perceptions of social support. The 15 items were summed and averaged to create a single index of social support. The scale demonstrated excellent internal consistency \((\alpha = .90)\). In Heckman’s (2003) study the internal consistency for the provision of social support scale was .91. An assessment of construct validity demonstrated a significant relationship between Provision of Social Relations Scale and the Social Support Appraisal scale \((r = 0.73)\; (Vaux et al., 1986)\).

**Engagement Coping (Heckman, 2003).** The engagement coping scale was adapted from the Ways of Coping scale (Folkman & Lazarus, 1988) by Heckman (2003). The engagement coping scale consisted of 19-items, each of which assessed the extent to which participants used engagement or non-avoidant problem solving styles to resolve HIV-related stressors (sample item: “I got professional help”). Responses to individual
items were measured with a four-point scale from 1 (not used) to 4 (used a great deal). Higher scores indicated more frequent use of engagement coping. The questionnaire demonstrated good internal consistency ($\alpha = .87$). Engagement coping also demonstrated good internal consistency in a previous study (Heckman, 2003; $\alpha = .87$).
Results

Data Screening

An analysis of mahalanobis distance values suggested no multivariate violations; however, Box’s M analyses found two univariate outliers for the variable “Engagement Coping” in older Caucasians and one univariate outlier for the variable “Barriers to Care” among older African Americans. In order to determine the impact of the outliers on the data set, the outliers were tested in a structural equation analyses in the presence and absence of the outliers. The presence of the outliers did not contribute to any significant changes in the results. The three outliers were maintained in the analysis considering their negligible impact on the analyses.

Sample Characteristics and Race-Related Differences

Of the 85 Caucasian participants, 45 (53%) were from Ohio and 40 (47%) were from the Greater New York City Area. The average age of the Caucasian participants was 56.8 years of age (SD = 6.0, minimum range = 50, maximum range = 73), 81.2% received a college education, and 90.6% were unemployed. Of the 82 African American participants, nine (11%) were from Ohio and 73 (89%) were from New York City. The average age of African American participants was 54.4 years (SD = 3.9, minimum range = 48, maximum range = 72), 51.7% received a college education, and 93.9% were unemployed. In the current sample, 83.8% of participants from Ohio and New York City reported annual incomes of $20,000 or less. Please refer to Table 1 for participant characteristics.
A Chi-square test of independence indicated that older HIV-positive Caucasian men were significantly more likely to have earned incomes over $40,000 (24.7% vs. 7.3%) \([\chi^2 (4, N = 167) = 17.26, p < 0.002, \phi_C = 0.32]\), and college experience (81.2% vs. 47.6%) \([\chi^2 (2, N = 167) = 20.7, df = 2, p < 0.001, \phi_C = 0.35]\) compared to older HIV-positive African American men. Although the majority of the participants either identified as gay or bisexual, a Chi-square test of independence demonstrated that older Caucasian men living with HIV/AIDS in the current sample were more likely to identify as heterosexual compared to older African American men living with HIV/AIDS (30.6% vs. 0.0%) \([\chi^2 (1, N = 167) = 29.7, p < 0.001, \phi = -0.42]\). Moreover, significant associations were found between race and marital status for older Caucasian and African American men living with HIV/AIDS \([\chi^2 (5, N = 167) = 13.58, p = 0.019, \phi_C = 0.29]\) such that older Caucasian men living with HIV/AIDS were more likely to be married compared to African American men living with HIV/AIDS.

One-way ANOVAs were conducted to test if race differences existed on variables in the adapted CIQOL Model. As shown in Table 2, older HIV-positive African American men endorsed more Engagement Coping behaviors \((M = 2.37)\) than older HIV-positive Caucasian men \((M = 2.05)\), \([F (1, 167) = 13.9, p < .001, \eta^2 = .08]\), more Social Support \((M = 3.80)\) than older HIV-positive Caucasian men \((M = 3.57)\), \([F (1, 167) = 4.01, p < .05, \eta^2 = 0.02]\), and better Physical Well-Being \((M = 3.02)\) than older HIV-positive Caucasian men \((M = 2.41)\), \([F (1, 167) = 26.7, p < .001, \eta^2 = 0.14]\).

An analysis of covariance (ANCOVA) was used to test whether there were differences between older HIV-positive African American men and older HIV-positive
Caucasian men pertaining to HIV-Related Shame, Physical Well-Being, Social Support, Barriers to Care, and General Well-Being. The covariates were education, income, and relationship status. Older HIV-positive African American and Caucasian men differed on Engagement Coping \( F (1, 167) = 8.79, p = .004, \eta^2 = .06 \), Physical Well-Being \( F (1, 167) = 23.3, p = .000, \eta^2 = .14 \), and Social Support \( F (1, 167) = 4.44 p = .037, \eta^2 = .03 \).

**Bivariate Correlations among the Adapted CIQOL Model Variables and General Well-Being**

Pearson correlations \( (r) \) between the predictor variables (HIV-Related Shame, Barriers to Care, Social Support, Physical Well-Being, and Engagement Coping) and General Well-Being suggested that relationships among CIQOL Model variables were consistent across older HIV-positive Caucasian and African American men. Table 3 demonstrated significant associations between General Well-Being and HIV-related Shame, Barriers to Care, Physical Well-Being, Social Support, and Engagement Coping in both older HIV-positive African American and Caucasian men.

**Description of Models**

Two models will be tested in the current study, the *Adapted CIQOL Model* and the *Revised CIQOL Model*. The former model is referred to as the “Adapted” CIQOL Model because the two variables, AIDS-related discrimination and Satisfaction with Life were substituted with HIV-Related Shame and General Well-Being because the variables AIDS-related discrimination and Satisfaction with Life were not available in the current study. Besides the alterations mentioned, there are no other differences from the CIQOL
Model, the Adapted CIQOL Model, has the same causal relationships as the CIQOL Model. The second model, the Revised CIQOL Model, is a revision of the Adapted CIQOL Model, in that the constructs represented in the Revised CIQOL Model are identical to the constructs represented in the Adapted CIQOL Model. However, the Revised CIQOL Model differs from the Adapted CIQOM Model in that the relationships among the variables (causal links) were modified based on the quality of life literature on African Americans.

**Proposed analyses for testing goodness of fit.** Structural equation modeling (SEM) assessed the goodness of fit of the Adapted CIQOL Model and the Revised CIQOL Model to older Caucasian and African American men living with HIV/AIDS. The models were tested against the data using AMOS software (Version 7.0; Arbuckle & Wothke, 1999). Goodness of fit indices determined how well the statistical model fit the set of observations. Chi square tests determined the model’s fit to the data. A significant Chi square value would indicate a poor fit of the data to the specified model. Chi square statistics are sensitive to large sample sizes, therefore, increasing the likelihood that a small discrepancy could lead to the rejection of the model. Thus, the comparative fit index (CFI; Bentler, 1990) provided a measure of complete covariation in the data, a value greater than 0.95 would indicate an acceptable fit to the data. The root mean square error of approximation (RMSEA; Browne & Cudeck, 1993) assessed the fit of the models to the data. Browne and Cudeck (1993) suggest that values of RMSEA of 0.05 or less indicate a close fit of the data to the model, and less than 0.08 indicated a fair fit. Akaike’s information criteria determined the best fitting model (AIC; Akaike, 1974).
Akaike’s information criterion (AIC; Akaike, 1974) determined which of the models (i.e., Adapted CIQOL Model, Revised CIQOL Model) best fit the data. AIC indices assessed the degree of parsimony fit (Tabachnick & Fidell, 2007). The model with the lowest AIC value is considered the best fitting model. SPSS (Arbuckle, 2008; Version 17.0) tested the assumptions of multivariate normality and linearity prior to examining the goodness of fit of the model to the data.

**Assessment of Fit of the Adapted CIQOL Model to Older Adults Living with HIV/AIDS**

The Adapted CIQOL Model is referred to as an “Adapted” version of the CIQOL Model because the two variables, AIDS-related discrimination and Satisfaction with Life were substituted with HIV-Related Shame and General Well-Being because the variables AIDS-related discrimination and Satisfaction with Life were not available in the current study. There are no other differences from the CIQOL Model, the Adapted CIQOL Model, has the same causal relationships from the CIQOL Model. The Adapted CIQOL Model variables evidenced adequate fit for older Caucasian men living with HIV/AIDS: $X^2 (5, N = 85) = 10.9, p = .054, CFI = .97, RMSEA = .12, 90\% \text{ Confidence Interval for RMSEA} = (0.000; 0.215)$, AIC = 42.9. The dependent variable, General Well-Being accounted for 59% of the variance in the Adapted CIQOL Model for older Caucasian men living with HIV/AIDS.

The Adapted CIQOL Model demonstrated goodness of fit for older African American men: $X^2 (5, N = 82) = 8.9, p = .113, CFI = .97, \text{RMSEA} = .10, 90\% \text{ Confidence Interval for RMSEA} = (0.000; 0.201)$, AIC = 40.9. The dependent variable,
General Well-Being accounted for 53% of the variance for the Adapted CIQOL Model for older African American men living with HIV/AIDS.

**Direct effects among older Caucasian men living with HIV/AIDS.** For older HIV-positive Caucasian men, General Well-Being was linked with greater perceived Social Support (standardized coefficient = .23, p < .05), Physical Well-Being (standardized coefficient = .42, p < .05) and Engagement Coping (standardized coefficient = .24, p < .05). Greater HIV-Related Shame was associated with lowered perceived Social Support (standardized coefficient = -.30, p < .05), and increased Barriers to Care (standardized coefficient = .35, p < .05). Increased Barriers to Care was associated with decreased Physical Well-Being ratings (standardized coefficient = -.45, p < .05), and decreased Social Support (standardized coefficient = -.49, p < .05). Higher perceived Social Support ratings were associated with increased use of Engagement Coping (standardized coefficient = .45, p < .05) and greater General Well-Being ratings (standardized coefficient = .22, p < .05). Barriers to Care did not significantly predict General Well-Being (standardized coefficient = -.20, p > .05). Additionally, HIV-Related Shame did not predict Physical Well-Being (standardized coefficient = -.11, p > .05).

**Indirect effects among older Caucasian men living with HIV/AIDS.**

HIV-Related Shame was linked to General Well-Being through Social Support (standardized coefficient = .22, p < .05). Barriers to Care scores were linked with Engagement Coping through Social Support (standardized indirect coefficient = -.44, p < .05).
Direct effects among older African American men living with HIV/AIDS.

Among older HIV-positive African American men, General Well-Being was linked with greater perceived Social Support (standardized coefficient = .40, p < .05), Physical Well-Being (standardized coefficient = .45, p < .05) and Engagement Coping (standardized coefficient = .20, p < .05). Greater HIV-Related Shame was associated with lowered perceived Social Support (standardized coefficient = -.53, p < .05), and lowered Physical Well-Being (standardized coefficient = -.27, p < .05). Increased Barriers to Care was associated with decreased Physical Well-Being ratings (standardized coefficient = -.27, p < .05). Higher perceived Social Support ratings were associated with increased use of Engagement Coping (standardized coefficient = .21, p < .05). Barriers to Care did not significantly predict Social Support (standardized coefficient = .09, p >.05) or General Well-Being (standardized coefficient = -.06, p >.05).

Indirect effects among older African American men living with HIV/AIDS.

HIV-Related Shame was linked to General Well-Being through Physical Well-Being (standardized coefficient = -.27, p < .05). Barriers to Care scores were linked with General Well-Being through Physical Well-Being (standardized indirect coefficient = -.33, p < .05).

Assessment of Fit for the Revised CIQOL Model for Older Adults Living with HIV/AIDS

The Revised CIQOL Model differs from the Adapted CIQOL Model in that causal links among the variables were modified based on the quality of life literature on African Americans. After reviewing the empirical literature examining the quality of life
of African Americans (e.g., Adams, 1997; Batts et al, 2001; Buseh, 2006; Buseh, Kelber, Stevens, & Park, 2008; Campbell et. al, 2007; Cole, Kemeny, & Taylor, 1997; Hillsbriggs et. al.2002; Jackson & Adams, 1992; Penedo, 2001), five modifications were made to the model such that the following links were modified:

1) HIV-Related Shame and General Well-Being
2) HIV-Related Shame and Engagement Coping
3) Barriers to Care and Engagement Coping
4) Social Support and Physical Well-Being
5) Removal of the link between Barriers to Care and General Well-Being

**Revised CIQOL Model for older HIV-positive Caucasian men.**

The model was significantly improved with the addition of these paths. The results demonstrated excellent fit for HIV-positive older Caucasian men $X^2 (2, N = 85) = 3.5, p = .173,\ CFI= .99,\ RMSEA= .095,\ 90\ Percent\ Confidence\ Interval\ for\ RMSEA = (0.000; 0.256), AIC= 41.5. General Well-Being accounted for 63% of the variance for the Revised CIQOL Model. Based on the data from older HIV-positive Caucasian men, increased Barriers to Care was associated with reduced Social Support (critical ratio = -5.549, $p < .05$), increased Social Support was related to greater use of Engagement Coping (critical ratio = 3.295, $p < .05$), and greater reports of HIV-Related Shame was associated with reduced General Well-Being (critical ratio = -3.387, $p < .001$).

**Direct effects among older Caucasian men living with HIV/AIDS.**

In older HIV-positive Caucasian men, General Well-Being was linked with greater Physical Well-Being (standardized coefficient = .44, $p < .05$), decreased HIV-
Related Shame (standardized coefficient = -.26, p < .05), increased Engagement Coping (standardized coefficient = .24, p < .05), and Social Support (standardized coefficient = .20, p < .05). Social Support was linked with HIV-Related Shame (standardized coefficient = -.30, p < .05). Engagement Coping was linked with increased Social Support (standardized coefficient = .43, p < .05). Greater Barriers to Care was linked with lowered Physical Well-Being ratings (standardized coefficient = -.47, p < .05).

**Indirect effects among older Caucasians living with HIV/AIDS.**

Among older HIV-positive Caucasian men, HIV-Related Shame was linked with General Well-being through perceived Social Support (standardized indirect coefficient = -.30, p < .05). General Well-Being was indirectly linked with Barriers to Care through Social Support (standardized coefficient = -.49, p< .05).

**Revised CIQOL Model for older HIV-positive African American men.**

Among older HIV-positive African American men the model fit was $X^2$ (2, N=82) =1.25, p = .535, CFI= 1.00, RMSEA= .000, 90 Percent Confidence Interval for RMSEA= (0.000; 0.192), AIC= 39.3. CFI= 1.00. The dependent variable, General Well-Being accounted for 58% of the variance for the Revised CIQOL Model. Greater social support was associated with increased General Well-Being, Engagement Coping, Barriers to Care and Social Support for older HIV-positive African American men (critical ratio= 3.65, p < .001).

**Direct effects among older African American men living with HIV/AIDS.**

In older HIV-positive African American men, General Well-Being was linked with greater perceived Social Support (standardized coefficient = .31, p < .05), HIV-
Related Shame (standardized coefficient = -.17, \( p < .05 \)), Engagement coping
(standardized coefficient = .19, \( p < .05 \)), and Physical Well-Being (standardized
coefficient = .42, \( p < .05 \)). Greater HIV-Related Shame was linked to lowered perceived
Social Support (standardized coefficient = -.52, \( p < .05 \)). Greater Physical Well-Being
ratings were linked with greater Social Support (standardized coefficient = .23, \( p > .05 \))
and decreased Barriers to Care (standardized coefficient = -.35 \( p < .05 \)).

*Indirect effects among older African American men living with HIV/AIDS.*

Barriers to Care was linked with General Well-Being through Physical Well-Being
(standardized indirect coefficient = -.35, \( p > .05 \)).

**Chi Square Change**

In order to test whether there were significant differences between older HIV-
positive African American and Caucasian men in the Revised CIQOL Model, the
parameters were kept constant while all the other paths were allowed to be free. A
significant Chi square was demonstrated for older HIV-positive African American men
(standardized coefficient = -.23) and older HIV-positive Caucasian men (standardized
coefficient = .26) when the structural path from Barriers to Care to Social Support was
relaxed (\( \chi^2 \) Change [freeing path from Barriers to Care to Social Support] =28.1 with DF
= 8). In addition, a significant Chi square change was found when comparing error
variances between older HIV-positive African American and Caucasian men for the
variables Physical Well-Being (\( \chi^2 \) Change [freeing error variance of Physical Well-
Being] =26.1 with DF = 21), and Engagement Coping (\( \chi^2 \) Change [freeing error variance
of Engagement Coping] =22.1 with DF = 21).
**Summary:**

Contrary to what was hypothesized, the Adapted CIQOL Model, though based on a model fitted to a Caucasian sample living with HIV/AIDS (CIQOL Model), demonstrated a modest fit to older HIV-positive African American men. Unexpected results were also demonstrated for the Revised CIQOL Model. Similarly, the Revised CIQOL Model, though it was constructed based on the quality of life literature on African Americans, provided a moderate fit to older HIV-positive Caucasian men in the current study. As expected, the Revised CIQOL Model demonstrated excellent fit for older HIV-positive African American men. The implications relating to the findings will be discussed below.
Discussion

Advances in technology have allowed individuals infected with HIV/AIDS to live longer than ever before. As a result, greater emphasis has been placed on enhancing the quality of life of individuals living with HIV/AIDS. The current study assessed the application of the CIQOL Model (Heckman, 2003) by testing multidimensional frameworks in the appraisal of quality of life of older HIV-positive African American and Caucasian men. Although goodness of fit for a primarily Caucasian sample was established with the CIQOL model (CIQOL; Heckman, 2003), it was unclear whether a similar model would apply to older HIV-positive African American men. The present study extends the examination of quality of life to older HIV-positive African American men.

Adapted CIQOL Model

The variables AIDS-Related Discrimination and Satisfaction with Life were not available due to the archival nature of the current study. As a result, AIDS-Related Discrimination and Satisfaction with Life were substituted with HIV-Related Shame and General Well-Being in the Adapted CIQOL Model. There are no other differences from the CIQOL Model; the Adapted CIQOL Model has the same causal relationships as the CIQOL Model.

Although it was expected that the Adapted CIQOL model would apply to older Caucasian men living with HIV/AIDS, the Adapted CIQOL Model applied to both older Caucasian and African American men living with HIV/AIDS. Furthermore, greater variance was accounted for in the dependent variable General Well-Being for African
Americans (General Well-Being accounted 53% of the variance) compared to Caucasians (General Well-Being accounted for 49% of the variance). Considering Caucasian samples informed the construction of the Adapted CIQOL Model, it was unanticipated that the analysis of the Adapted CIQOL Model conducted with older HIV-positive African American men would account for the majority of the variance for Well-Being compared to older HIV-positive Caucasian men.

AIC scores determined that the Adapted CIQOL model was a better fit for older HIV-positive African American men. However, further examination of the RMSEA confidence intervals demonstrated overlapping ranges, which indicated that the differences in AIC were not sufficient to indicate whether or not the Adapted CIQOL Model was indeed a better fit for African Americans compared to Caucasians.

Older HIV-positive African American and Caucasian men demonstrated similarities and differences pertaining to the causal relationships found in the Adapted CIQOL Model. The following are descriptions of the similarities found between older HIV-positive African American and Caucasian men. As Social Support decreased, HIV-Related Shame increased for both Caucasians and African American men living with HIV/AIDS. Additionally, when Barriers to Care scores increased Physical Well-Being scores decreased. Moreover, increases to Social Support were associated with increases in Engagement Coping and General Well-Being for both older HIV-positive Caucasian and African American men. Finally, increases in Physical Well-Being, and increases in Engagement Coping were associated with increases in General Well-Being for older HIV-positive Caucasian and African American men.
The aforementioned findings are posited to be common factors in predicting the quality of life of older HIV-positive Caucasian and African American men because these relationships have persisted in the current study with two diverse groups (i.e., Caucasians and African Americans), and in previous studies (e.g., Heckman, 2003; Schmitz & Crystal, 2000; Wilson & Cleary, 1995). The persisting relationships mentioned above suggest that these relationships work to explain quality of life across different racial and demographic circles. It is speculated that these persisting common relationships are factors that are related to living with HIV/AIDS, rather than one’s culture.

It is suggested that future studies continue to evaluate the aforementioned relationships to establish common predictors for General Well-Being among different groups. If the stability of the findings is established, the results can be used as a part of a standard intervention protocol. However, before such a protocol is created, the applicability of the Adapted CIQOL Model would need to be established for several other populations, including individuals of Hispanic, Asian, Caribbean, and Native American ancestry.

Different causal path relationships were demonstrated between older Caucasian and African American men living with HIV/AIDS demonstrated. For older HIV-positive Caucasian men, increased Barriers to Care was associated with decreased Social Support but not for older HIV-positive African American men. This finding supports Heckman’s (2003) study that also found a negative relationship between Barriers to Care and Social Support in a sample comprised primarily of older HIV-positive Caucasian men. In contrast to older Caucasian men living with HIV/AIDS, Barriers to Care did not predict
Social Support for older African American men living with HIV/AIDS. A review of the literature revealed a paucity in studies that examined the relationship between Barriers to Care and Social Support for African American men living with HIV/AIDS. The literature on healthy African Americans suggests that social support systems helped persons overcome historical barriers such as slavery, segregation, and racism (Chatters, 1998; Cook & Twaite, 1995; Speer, Kennedy, Watson, Meah, Nichols, & Watson, 1999). However, the literature above examined only the pathway from Social Support and how it might mitigate barriers, but did not consider the effect of Barriers to Care on Social Support. Additionally, the earlier studies examined barriers in general, while the present study examined barriers pertaining to health care. More research is needed to investigate the impact of Barriers to Care on Social Support among African American men living with HIV/AIDS.

Multi-cultural research suggests that compared to older African Americans, older Caucasians are more likely to depend on closer family networks and are less likely to rely on distant relatives or community members. As a result, it makes sense that when someone is grappling with HIV/AIDS, one’s social support network could easily become weak or over utilized if support is limited to a smaller network (Chatters, 1998; Coke & Twaite, 1995).

Additionally, increases in HIV-Related Shame experiences were related to decreases in Physical Well-Being for older HIV-positive African American men. However, this relationship was not found for older HIV-positive Caucasian men. The link from HIV-Related Shame to Physical Well-Being was supported in the literature for
HIV-positive African American men (e.g., Buseh, 2008), African Americans in general (Rawling & Masters, 2008), a racially diverse sample (Schmitz & Crystal, 2000), and in a sample primarily comprised of Caucasians (Heckman, 2003). The relationship between HIV-Related Shame and Physical Well-Being has been supported in the majority of the literature on Caucasians and African American men living with HIV/AIDS. However, the relationship between HIV-Related Shame and Physical Well-Being was not demonstrated among older HIV-positive Caucasian men in the current sample. It is unclear why there is a discrepancy between the present study and previous studies. Future studies are needed in order to explore the relationships between HIV-Related Shame and Physical Well-Being.

Finally, increases in HIV-Related Shame scores were related to increases in Barriers to Care for older HIV-positive Caucasian men living with HIV/AIDS, but not for older HIV-positive African American men living with HIV/AIDS. The positive relationship found between HIV-Related Shame and Barriers to Care was supported by the CIQOL Model (Heckman, 2003). Racial attribution pertaining to shame experiences could be one explanation for the insignificant relationship from HIV-Related Shame and Barriers to Care. An earlier study on racial attribution found that out-groups are more likely to attribute the reason for discrimination to their out-group status (King, 2000). Based on this understanding, it is likely that African Americans might attribute discriminatory experiences to their ethnicity rather than their HIV/AIDS status. Perhaps, for the current African American sample, ethnicity was a more salient aspect of their identity compared to their HIV/AIDS status, which would inform how shame experiences
are internalized. Future research designs would help to delineate the different attribution of shame experiences and how it relates to the quality of life African Americans.

In summary, structural equation model analysis demonstrated the generalizability of the Adapted CIQOL Model separately to older HIV-positive African Americans and Caucasian men. Several of the findings were unexpected. First, even though the construction of the Adapted CIQOL Model was based on studies with mostly Caucasian samples, the model also applied to older HIV-positive African American men and demonstrated a slightly better fit for older HIV-positive African American men compared to older HIV-positive Caucasian men. Furthermore, much of the variance was accounted for by the variable General Well-Being in the Adapted CIQOL Model for both older Caucasian and African American men living with HIV/AIDS. Although the Adapted CIQOL Model applied to both groups, unique causal pathways were also identified. For example, Barriers to Care significantly predicted lower Social Support for older Caucasian men living with HIV/AIDS but not for older African American men living with HIV/AIDS. HIV/AIDS Related Shame predicted poorer Physical Well-Being for older HIV-positive African American men and not for older HIV-positive Caucasian men. However, HIV-Related Shame was linked to Barriers to Care for older HIV-positive Caucasian men. In the current study, cultural differences and similarities informed the Adapted CIQOL Model. Similarities found in the causal relationships for both older HIV positive Caucasian and African American men indicate that there might be factors that are less related to one’s race or demographic circumstance and more related to the pervasive day-to-day hassles concerning one’s HIV/AIDS status.
Further studies are needed that incorporate race-related experiential differences as factors in assessments of quality of life when creating a framework for diverse populations. Moreover, even though goodness of fit was established for older African American men living with HIV/AIDS to a model informed by studies based on Caucasians living with HIV/AIDS, further research is needed to examine the generalizability of existing models to diverse populations. This practice will allow researchers to identify stable patterns of differences and similarities in quality of life.

**Revised CIQOL Model**

The Revised CIQOL Model included the same variables as the Adapted CIQOL Model. However, the causal pathways were modified based on studies pertaining to the quality of life of African Americans. Structural equation modeling was applied to the Revised CIQOL Model and demonstrated good fit for older HIV-positive African American men.

Although the Revised CIQOL Model was informed by the empirical literature on African American men, the generalizability of the Revised CIQOL Model was also demonstrated for older HIV-positive Caucasian men. It was expected that greater variance would be accounted for the dependent variable in the model examined with older HIV-positive African American men, considering the relationships were determined by the literature on African Americans. However, greater variance was accounted for the dependent variable General Well-Being in the Revised CIQOL Model tested with older HIV-positive Caucasian men (General Well-Being accounted 63% of the variance).
compared to older HIV-positive African Americans (General Well-Being accounted for 58% of the variance).

AIC scores determined that the Adapted CIQOL model was a better fit for older HIV-positive African American men compared to older HIV-positive Caucasian men. In order to determine whether the Revised CIQOL model was a significantly better fit to older HIV-positive African American men compared to older HIV-positive Caucasian men, RMSEA confidence intervals were examined. The analysis demonstrated overlapping of the RMSEA confidence intervals between older HIV-positive African American men and older HIV-positive Caucasians, suggesting that the Revised CIQOL model applied comparably to both African Americans and Caucasians.

The Revised CIQOL Model demonstrated similarities between older HIV-positive African American and Caucasian men in that decreases in HIV-Related Shame was associated with increases in General Well-Being. Moreover, increases in Physical Well-Being, Engagement Coping and Social Support were associated with and increases in one’s General Well-Being ratings. Although the present study found a significant correlation between HIV-Related Shame and General Well-Being for both older HIV-positive Caucasian and African American men, these findings were only supported by the literature on African Americans (Ajuluchukwu, Christian, & Jenkins, 2003, CDC, 2010). The studies that combined HIV-positive African Americans and HIV-positive Caucasians did not find such an arrangement (Heckman, 2003; Schmitz & Crystal, 2003). HIV-Related Shame has a pervasive reverberating effect on one’s experiences. HIV-Related Shame experiences can prevent older African Americans from keeping their medical
appointments (Ajuluchukwu, Christian, & Jenkins, 2003, CDC, 2010) and from seeking support from others (Heckman, 2003; Snowden, 2001). For example, Snowden (2001) found that HIV-positive African American men who endorsed increased HIV-Related Shame reported less social support seeking behaviors compared to their HIV-positive Caucasian male counterparts. However, in the Revised CIQOL Model there were no differences between older HIV-positive African American and Caucasian men related to HIV-Related Shame and Social Support.

In the Adapted CIQOL Model, the causal link from HIV-Related Shame to Physical Well-Being was only significant for older HIV-positive African American men. However, in the Revised CIQOL Model, there was a significant relationship between HIV-Related Shame and Physical Well-Being for both groups. Increased Barriers to Care scores were associated with decreased Physical Well-Being ratings for both older HIV-positive Caucasian and African American men in the Revised CIQOL Model. However, the causal path from Barriers to Care to Physical Well-Being was only significant when examining older HIV-positive African American men in the Adapted CIQOL Model.

One key difference between the Adapted CIQOL Model and the Revised CIQOL Model is related to the removal of the casual link between Barriers to Care and General Well-Being. Although the CIQOL Model (Heckman, 2003) and Adapted CIQOL Model included the relationship from Barriers to Care and General Well-Being, existing studies on the Quality of Life of African Americans found no direct relationship between Barriers to Care and quality of life (Adams, 1997; Diener, Sandvik, Seidlitz, & Diener, 1993; Jackson & Adams, 1992). Even when African Americans reported increased
Barriers to Care, they also reported increased life satisfaction (Adams, 1997; Diener, Sandvik, Seidlitz, & Diener, 1993; Jackson & Adams, 1992).

A review of the quality of life literature on African Americans suggests that the impact of Barriers to Care on quality of life is mitigated by support from family, friends, and members of one’s church community (Chatters, 1988; Coke & Twaite, 1995; Ortega, Crutchfield, & Rushing, 1983). For example, older adults with few organizational resources might rely on family or church members for support services, such as transportation or access to food (Coke & Twaite, 1995; Robert & Lee, 2002). From these findings, it appears that African Americans might rely on services provided by community members that might substitute for inadequate resources or Barriers to Care.

Previous literature on African Americans demonstrated that those who practiced engagement coping were also more effective in managing their Barriers to Care (Antoni et al., 1992; Campbell et al., 2007; Penedo et al., 1996). Conversely, the relationship between Barriers to Care and Engagement Coping was not significant for older HIV-positive African American and Caucasian men in the current study. Although Buseh and colleagues (2006) found greater use of Engagement Coping was associated with reduced HIV-Related Shame, and greater Quality of Life, for the current study there was not a significant relationship from HIV-Related Shame to Physical Well-Being and from HIV-Related Shame to Engagement Coping.

Differences were also noted in the application of the Revised CIQOL model to older HIV-positive Caucasian and African American men. Among the older Caucasian men living with HIV/AIDS, increased Barriers to Care scores were associated with
decreased Social Support ratings but not for older HIV-positive African American men. Moreover, increased Social Support scores were associated with increased Engagement Coping for older HIV-positive Caucasian men but not for older HIV-positive African American men. Finally, increased Social Support was associated with Physical Well-Being for older HIV-positive African American men but not older HIV-positive Caucasian men. In the Adapted CIQOL model, the relationship linking Social Support to Engagement Coping was significant for both older African Americans and Caucasian men living with HIV/AIDS. It is unknown whether the persisting similarities could be attributed to the fact that there are some overlapping relationships in the Adapted and Revised CIQOL Model.

In summary, even though the Revised CIQOL Model was based on the literature on African Americans, the model provided a good fit for both older African American and Caucasian men living with HIV/AIDS. One explanation is that the older African American and Caucasian men were mostly from urban locations, were unemployed and reported low annual incomes. The similarities are explained by the understanding that race is confounded with socioeconomic status (Farmer & Ferraro, 2005; LaVeist, 2003; Robert & Lee, 2002). Considering that the older HIV-positive African American and Caucasian men represented the lower end of the economic strata, it is likely that they might have similar environmental influences.

The construction of both the Adapted CIQOL and Revised CIQOL Models take into account the circumstances (e.g. barriers to care, social support, HIV-Related Shame) that would impact one’s General Well-Being. As a result, the model proved to be
comprehensive. The Revised CIQOL Model established relationships that were similar to and consistent with the Adapted CIQOL Model. The analyses revealed new relationships that were not established in the quality of life literature for older African American men living with HIV/AIDS. For example, although previous studies demonstrated Barriers to Care as a predictor for General Well-Being for a sample primarily comprised of Caucasians living with HIV/AIDS (Heckman, 2003), such relationships were not supported in the literature on the quality of life of African Americans. The Revised CIQOL Model was constructed without the aforementioned causal links. Moreover, HIV-Related Shame was not supported in the literature for predicting General Well-Being for Caucasians living with HIV/AIDS; however, support was found linking HIV-Related Shame to General Well-Being for older Caucasians and African American men living with HIV/AIDS.

In order to identify key relationships for the construction of the Revised CIQOL Model, several relationships were identified in the quality of life literature pertaining to African Americans. This attempt led to an analysis with several causal pathways that mimic the complexities experienced by African Americans that were observed in the literature. However, the complexity of the Revised CIQOL Model leads us to consider the law of parsimony. According to Williams and Holahan (1994) parsimony indices determine the simplicity of a model. Parsimony is examined by the sparseness of the relationships that have to be accounted for in a model (Williams & Holahan, 1994). A theoretical assumption behind maintaining parsimony is that a model with fewer relationships would be superior to a model with several relationships. However, it is
important to reconsider the use of parsimony as a marker of superiority when examining vulnerable populations living with HIV/AIDS. Although several causal pathways are thought to weaken the validity of a model, both the Revised CIQOL Model with several path relationships, and the Adapted CIQOL Model with fewer pathways in the current study demonstrated generalizability to the samples. One advantage of using a complex model is that it provides more information about the lives of individuals living with HIV/AIDS, particularly minority populations who are understudied.

Moreover, although it was expected that the Adapted CIQOL Model would apply only to Caucasian men, and the Revised CIQOL Model would apply only to African American men, both the Adapted CIQOL Model and the Revised CIQOL Model applied to African American and Caucasian men living with HIV/AIDS. The applicability of the models to both groups suggests that there are more similarities than differences among the current sample with regard to the two models in question. It is likely that the life experiences associated with living with HIV/AIDS and environmental factors associated with living in an urban setting might be more predictive of their quality of life than the current sample’s quality of life compared to their race or ethnicity.

In conclusion, the current study is one of the first to test an existing model to a sample comprised exclusively of older Caucasian and African American men living with HIV/AIDS. Moreover, the current study is also one of the first to construct a quality of life model based on the needs presented in the existing literature for older African American men. There were several benefits of testing quality of life for older Caucasian and African American men living with HIV/AIDS. First, it allowed for identification of
stable, causal relationships that predict quality of life for both older HIV-positive African American and Caucasian men. Second, it allowed for the appraisal of unique differences among the two groups. Unique differences should be considered when creating interventions that are tailored to older African American men living with HIV/AIDS. The findings can serve as educational aids for medical practitioners in demonstrating the several influences on disease outcome and wellness.
Limitations

The present study is limited in that it was archival in nature. Two of the variables that were utilized in the CIQOL Model (AIDS-Related Discrimination, and Satisfaction with Life) were not available for the current study. Instead, the variables HIV-Related Shame and General Well-Being were substituted for AIDS-Related Discrimination and Satisfaction with Life in the current study. Therefore, it is unknown whether differences found between the Adapted CIQOL Model and Heckman’s (2003) CIQOL Model was attributable to the differences between these scales. Moreover, it is unclear whether the scales that were used to obtain information on African Americans convey the experiences of African Americans. First, the literature suggests financial burdens are primary obstacles to care for this group (e.g., Swindells, Mohr, Justice, Berman, Squier, Wagener et al., 1999; Viswanathan, 2005; Worthington & Krentz, 2005). However, in both CIQOL studies (e.g., Heckman, 2003; Heckman et al., 2004), Barriers to Care was measured mainly through access to social services, with few items measuring financial burden. A review of the literature suggests that financial burdens represent a significant obstacle for African Americans, compared to Caucasians (Crystal et al., 2003; Ruiz, 1995; Smedley, Stith, & Nelson, 2002; Speer, Kennedy, Watson, Meah, Nichols & Watson, 1999). As a result, it is unlikely that Barriers to Care adequately represented “barriers” for older African American men living with HIV/AIDS.

It is difficult to ascertain how related the variables described in the empirical literature apply to the terms used in the current study, due to the varied nature of describing quality of life. Several studies used the terms “Well-Being,” “Quality of Life,”
and “Satisfaction with Life” interchangeably, though there are marked differences in the items that assess these constructs in other studies. As a result, it was particularly difficult to make comparisons within the literature considering the existence of different constructs.

While there were limitations to this study, the current research is one of the first studies to use empirical literature on African Americans to predict the quality of life of older African American men living with HIV/AIDS. Future studies should explore other factors that might contribute to differences among diverse populations (e.g., individuals with other chronic illnesses, other minority groups living with HIV/AIDS).
References


http://www.cdc.gov/hiv/topics/over50/resources/factsheets/over50.htm

Center for Disease Control and Prevention. (2010b). AIDS Public Information Dataset
http://wonder.cdc.gov/wonder/data/aidsPublichtml


http://www.cdc.gov/hiv/topics/aa/resources/reports/heightendresponset.htm


Table 1

Participant Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Overall Total</th>
<th>African Americans</th>
<th>Caucasians</th>
<th>p - value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>55.6</td>
<td>54.4</td>
<td>56.8</td>
<td>.002</td>
</tr>
<tr>
<td>Education</td>
<td>167</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior High</td>
<td></td>
<td>2</td>
<td>1</td>
<td>.001</td>
</tr>
<tr>
<td>High School</td>
<td></td>
<td>41</td>
<td>15</td>
<td></td>
</tr>
<tr>
<td>College</td>
<td></td>
<td>39</td>
<td>69</td>
<td></td>
</tr>
<tr>
<td>Sexual Orientation</td>
<td>167</td>
<td>82</td>
<td>52</td>
<td>.001</td>
</tr>
<tr>
<td>Gay/Bisexual</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td>167</td>
<td></td>
<td></td>
<td>.019</td>
</tr>
<tr>
<td>LM</td>
<td>6</td>
<td></td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>LS</td>
<td>0</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>LD</td>
<td>10</td>
<td></td>
<td>11</td>
<td></td>
</tr>
<tr>
<td>PD</td>
<td>25</td>
<td></td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>SI</td>
<td>44</td>
<td></td>
<td>40</td>
<td></td>
</tr>
<tr>
<td>WI</td>
<td>0</td>
<td></td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Income over $40,000</td>
<td>167</td>
<td>7.3%</td>
<td>24.7%</td>
<td>.002</td>
</tr>
</tbody>
</table>

Note. LM = legally married, LS = legally separated, LD = legally divorced, PD = partnered, SI = single, WI = widowed.
Table 2

*Observed and Adjusted Mean Scores on the Adapted CIQOL by Race*

<table>
<thead>
<tr>
<th>Variable Name</th>
<th>Unadjusted (^a) Demographic Variables</th>
<th>Adjusted (^b) Demographic Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>African American</td>
<td>Caucasian</td>
</tr>
<tr>
<td>Shame</td>
<td>1.27</td>
<td>1.21</td>
</tr>
<tr>
<td>Barriers to Care</td>
<td>1.74</td>
<td>1.87</td>
</tr>
<tr>
<td>Physical Well-Being**</td>
<td>3.02</td>
<td>2.41</td>
</tr>
<tr>
<td>Social Support*</td>
<td>3.80</td>
<td>3.57</td>
</tr>
<tr>
<td>Engagement Coping**</td>
<td>2.37</td>
<td>2.05</td>
</tr>
<tr>
<td>General Well-Being**</td>
<td>2.24</td>
<td>2.02</td>
</tr>
</tbody>
</table>

*Note. \(^a\) Five Adapted CIQOL Model variables entered simultaneously. \(^b\) Adjusted for ethnicity. *p < .05. **p < .001.*
Table 3

*Summary of Intercorrelations for Scores on the HIV-Related Shame, Barriers to Care, Physical Well-Being, Social Support, Engagement Coping, and General Well-Being Scales by Race*

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Shame</td>
<td>_</td>
<td>.349**</td>
<td>.277*</td>
<td>-.472**</td>
<td>-.219*</td>
<td>-.529**</td>
</tr>
<tr>
<td>2. Barriers to Care</td>
<td>.294**</td>
<td>_</td>
<td>-.494**</td>
<td>-.593**</td>
<td>-.281</td>
<td>-.586**</td>
</tr>
<tr>
<td>3. Physical Well-Being</td>
<td>-.367**</td>
<td>-.413</td>
<td>_</td>
<td>.305**</td>
<td>.147</td>
<td>.610**</td>
</tr>
<tr>
<td>4. Social Support</td>
<td>.508**</td>
<td>-.071</td>
<td>.330**</td>
<td>_</td>
<td>.446**</td>
<td>.565**</td>
</tr>
<tr>
<td>5. Engagement Coping</td>
<td>-.128</td>
<td>-.003</td>
<td>-.031</td>
<td>.210</td>
<td>_</td>
<td>.449**</td>
</tr>
<tr>
<td>6. General Well-Being</td>
<td>-.512**</td>
<td>-.267*</td>
<td>.585**</td>
<td>.330**</td>
<td>267</td>
<td>_</td>
</tr>
</tbody>
</table>

*Note.* Intercorrelations for African American Participants (n = 82) are presented below the diagonal and intercorrelations for European American participants (n = 85) are presented above the diagonal. For all scales, higher scores are indicative of more extreme responding in the direction of the construct assessed. *p < .05. **p < .001.
Table 4

*Descriptive Statistics: Continuous Variables*

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Obtained Range</th>
<th>Possible Range</th>
<th>α</th>
<th>Skew/SE of Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Well-Being</td>
<td>167</td>
<td>2.13</td>
<td>.737</td>
<td>0.17-4.00</td>
<td>0.00-4.00</td>
<td>.89</td>
<td>2.13</td>
</tr>
<tr>
<td>Shame</td>
<td>167</td>
<td>1.24</td>
<td>.946</td>
<td>0.00-3.57</td>
<td>0.00-4.00</td>
<td>.92</td>
<td>3.05</td>
</tr>
<tr>
<td>Engagement Coping</td>
<td>167</td>
<td>2.21</td>
<td>.573</td>
<td>1.00-3.84</td>
<td>1.00-4.00</td>
<td>.87</td>
<td>1.33</td>
</tr>
<tr>
<td>Physical Well-Being</td>
<td>167</td>
<td>2.71</td>
<td>.822</td>
<td>0.40-4.00</td>
<td>0.00-4.00</td>
<td>.91</td>
<td>-2.99</td>
</tr>
<tr>
<td>Social Support</td>
<td>167</td>
<td>3.68</td>
<td>.752</td>
<td>1.73-5.00</td>
<td>1.00-5.00</td>
<td>.90</td>
<td>-1.07</td>
</tr>
<tr>
<td>Barriers to Care</td>
<td>167</td>
<td>1.78</td>
<td>.625</td>
<td>1.00-3.77</td>
<td>1.00-4.00</td>
<td>.89</td>
<td>4.23</td>
</tr>
</tbody>
</table>
Figure 1. The Original Chronic Illness Quality of Life Model (CIQOL; Heckman, 2003).

Path analytic representation of the CIQOL model: Influence of AIDS-related discrimination, barriers to care, social support, physical well-being, and engagement coping on life satisfaction.
Figure 2. The Adapted Chronic Illness Quality of Life Model (Hypothesized). Path analytic representation of HIV-related shame, barriers to care, physical well-being, social support, engagement coping on general well-being.
Figure 3. The Revised Chronic Illness Quality of Life Model (Hypothesized). Consists of path analytic relationships informed by the empirical literature on African Americans.
Figure 4. Model Fit of The Adapted Chronic Illness Quality of Life Model to Older Caucasian Men Living with HIV/AIDS (Hypothesized). Results are represented in standardized form. All solid lines represent significant ($p < .05$ or lower) path analytic relationships. Error variances for endogenous variables were set to one.
Figure 5. Model Fit of The Adapted CIQOL Model to Older African American Men Living with HIV/AIDS (Hypothesized). Results are represented in standardized form. All solid lines represent significant ($p < .05$ or lower) path analytic relationships. Error variances for endogenous variables were set to one.
Figure 6. Model Fit of the Revised CIQOL Model to Older Caucasian Men Living with HIV/AIDS. Results are represented in standardized form. All solid lines represent significant ($p < .05$ or lower) path analytic relationships. Error variances for endogenous variables were set to one. Bolded numerals represent the significant difference from African Americans.
Figure 7. Model Fit of the Revised CIQOL Model to Older African American Men Living with HIV/AIDS. Results are represented in standardized form. All solid lines represent significant ($p < .05$ or lower) path analytic relationships. Error variances for endogenous variables were set to one. Bolded numerals represent the significant difference from Caucasians.
Appendix A - Demographics

1. What is the identification number?

2. In which state is this study being completed?
   □ New York    □ Ohio


4. What is your gender?
   □ Male
   □ Female
   □ Refuse to answer

5. What ethnic background or race do you consider yourself?
   □ Caucasian /Non-Hispanic
   □ Hispanic/Latino
   □ African-American/Non-Hispanic
   □ African-American/Hispanic
   □ Asian or Pacific Islander
   □ Native American
   □ Other: __________________
   □ Refuse to answer

6. What is the highest grade or year of school that you have completed?
   □ Sixth grade
   □ Seventh grade
   □ Eighth grade
   □ Ninth grade
   □ Tenth grade
   □ Eleventh grade
   □ Twelfth grade
☐ 1 year of college
☐ 2 years of college
☐ 3 years of college
☐ 4 years of college
☐ 5 or more years of college
☐ GED
☐ Refuse to answer

7. What is your employment status?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Refuse to Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Full-time</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Working Part-time</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Unemployed</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Student</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Social Security Disability</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Applying to social security</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Social Security Income</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Veteran Benefits</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Other</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>

8. What figure is closest to your annual income?
☐ $0-$10,000
☐ $10,001-$20,000
☐ $20,001-$30,000
☐ $30,001-$40,000
☐ Over $40,000
9. How many children do you have? _________________

10. Are any of your children currently living with you?
   □ No
   □ Yes
   □ Refuse to answer

11. Are any of them HIV positive?
   □ No
   □ Yes
   □ Refuse to answer

12. Which of the following best describes your relationship status?
   □ Legally married
   □ Legally Separated
   □ Legally Divorced
   □ Partnered
   □ Single
   □ Widowed
   □ Refuse to answer

13. If you are currently in a primary relationship, which of the following best describes your partner’s H. I. V. status?
   □ My partner is H. I. V. negative
   □ My partner is H. I. V. positive
   □ I do not know my partner’s H. I. V. status
   □ My partner does not want me to share his/her status
   □ I do not have a partner at this time
   □ Refuse to answer

14. Which of the following best describes your current sexual relationship status?
☐ Not having sexual relations
☐ Having sex but not with an exclusive partner
☐ In an exclusive sexual relationship with one person for less than one year
☐ In an exclusive sexual relationship with one person for one year or more
☐ Refuse to answer

15. When did you first learn that you were H. I. V. positive? (e.g., 1990)
________________
☐ Refuse to answer

16. Have you EVER been diagnosed with AIDS?
☐ No
☐ Yes
☐ Refuse to answer

17. Which statement best describes your current health status?
☐ H.I.V. positive, with no symptoms.
☐ I have symptoms, but have not had to change my normal daily routines.
☐ I have symptoms that have required me to change parts of my normal routine of daily activities. Extra rest is not required during a normal day.
☐ Because of my symptoms, I am in bed, or resting, less than half of my waking hours.
☐ Because of my symptoms, I am in bed, or resting more than half of my waking hours.
☐ Refuse to answer

18. To the best of your knowledge, how were you exposed to H. I. V.?
☐ Unprotected sex with an infected male partner
☐ Unprotected sex with an infected female partner
☐ I. V. drug use
☐ Blood transfusion
☐ Other
☐ Refuse to answer
19. What year were you born?  □ _____________  □ Refuse to answer

20. Which of the following best describes your current living arrangement?

□ I live with immediate family members (such as parents, brothers, sisters, or children)
□ I live with my partner, significant other, or spouse.
□ I live with relatives (such as cousins, aunts, uncles, etc.)
□ I live with a friend (or friends).
□ I live in an assisted living or group home.
□ I live alone.
□ Refuse to answer

21. Do you currently have health insurance?

□ No
□ Yes
□ Refuse to answer

22. Are you currently taking Viagra?

□ No
□ Yes
□ Refuse to answer

23. Do you know your CD4 (or T4 Cell) count?

□ No
□ Yes
□ Refuse to answer

24. What was the result of your most recent CD4 (or T4 Cell) count?

□ No
□ Yes
□ Refuse to answer
25. Do you know your viral load?

☐ No

☐ Yes

☐ Refuse to answer

26. What was the result of your most recent viral load? If it was undetectable, please answer with zero. _____________  ☐ Refuse to answer

27. What was the date of your most recent viral load result?

_______________  ☐ Refuse to answer
Appendix B - Global Well-Being Scale

The following is a list of statements that people with your illness have said are important. By clicking the appropriate answer, please indicate how true each statement has been for you during the past seven days.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Some what</th>
<th>Quite a bit</th>
<th>Very much</th>
<th>Refuse to Answer</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I am able to work.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. My work (include work at home) is fulfilling.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I am able to enjoy life.</td>
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<td>4. I have accepted my illness.</td>
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<td>5. I am sleeping well.</td>
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<td>6. I am enjoying the things I usually do for fun.</td>
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<td>7. I am content with the quality of my life right now.</td>
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<td>8. I am satisfied with how I am coping with my illness.</td>
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<td>9. I am losing hope in the fight against my illness.</td>
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<td>10. I feel sexually attractive.</td>
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<td>11. I have a good appetite.</td>
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<td>12. I feel motivated to do things.</td>
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<td>13. I am hopeful about the future.</td>
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</table>
### Appendix C - Shame Concerning HIV Scale

The following statements describe feelings that many people with HIV have. Please indicate how true each statement has been for you during the **PAST MONTH**.

<table>
<thead>
<tr>
<th>Number</th>
<th>Statement</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Some what</th>
<th>Quite a bit</th>
<th>Very much</th>
<th>Refuse to Answer</th>
<th>Not Applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>It is hard to tell other people about my infection.</td>
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<td>2</td>
<td>I’ve failed to live up to my own expectations by getting H.I.V.</td>
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<td>3</td>
<td>When I tell others I have H. I. V., I expect them to think less of me.</td>
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<td>4</td>
<td>I put myself down for becoming H. I. V. positive.</td>
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<td>5</td>
<td>Being H. I. V. positive makes me feel defective, like there’s something wrong with me.</td>
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<td>6</td>
<td>I’m ashamed that I’m H. I. V. positive.</td>
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<td>7</td>
<td>When others find out I’m H. I. V. positive, I expect them to reject me.</td>
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<td>8</td>
<td>I struggle with feeling worthless because I have H. I. V.</td>
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<td>9</td>
<td>I’m ashamed by my H. I. V. symptoms.</td>
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<td>10</td>
<td>I hide my infection from others.</td>
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<td>11</td>
<td>I have an overpowering dread that my H. I. V. status will be revealed to others.</td>
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<td>12</td>
<td>I feel I deserve to be mistreated by others because of my H. I. V. status.</td>
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<td>13</td>
<td>I accept myself as an H. I. V. positive person.</td>
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<td>14</td>
<td>Having H. I. V. makes me want to hide, disappear, or even die.</td>
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</table>
### Appendix D - Barriers to Health Care and Social Services Scale

Please indicate to what extent each of the following circumstance makes it difficult for you to receive the care, services, or opportunities you wish to obtain by clicking the appropriate answer.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Somewhat</th>
<th>Quite a bit</th>
<th>Very much</th>
<th>Refuse to Answer</th>
<th>Not Applicable</th>
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</thead>
<tbody>
<tr>
<td>1. Long distances to medical facilities and personnel.</td>
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<tr>
<td>2. The lack of employment opportunities for people living with HIV or AIDS.</td>
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<td>3. The lack of health care professionals who are adequately trained and competent in HIV or AIDS care.</td>
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<td>4. The lack of transportation to access services I need.</td>
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<td>5. The shortage of psychologists, social workers, and mental health counselors who can help me address mental health issues.</td>
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<td>6. The lack of psychological support groups for persons living with H.I.V. or AIDS.</td>
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<td>7. The level of knowledge about H.I.V. or AIDS among citizens in the community.</td>
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<td>8 Breaches of confidentiality.</td>
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<td>9. My personal financial resources.</td>
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<td>10. Lack of adequate and affordable housing.</td>
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</table>
Appendix E - Physical Well-Being Scale

The following is a list of statements that together people with your illness have said are important. By clicking the appropriate answer, please indicate how true each statement has been for you during the past seven days.

<table>
<thead>
<tr>
<th>Statement</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Some what</th>
<th>Quite a bit</th>
<th>Very much</th>
<th>Refuse to Answer</th>
<th>Not Applicable</th>
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</thead>
<tbody>
<tr>
<td>1. I have a lack of energy.</td>
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<td>2. I have nausea.</td>
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<td>3. Because of my physical condition, I have trouble meeting the needs of my family.</td>
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<td>4. I have pain.</td>
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<td>5. I am bothered by side effects of treatment.</td>
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<td>6. I feel ill.</td>
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<td>7. I am forced to spend time in bed.</td>
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<td>8. I have been short of breath.</td>
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<td>9. I am bothered by a change of weight.</td>
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<td>10. I get tired easily</td>
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<td>11. I feel fatigued.</td>
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<td>12. I feel weak all over.</td>
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<td>13. I have been coughing.</td>
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</table>
Appendix F- Provision of Social Relation Scale

We would like to know something about your relationships with other people. Please read each statement and decide how well the statement describes you. For each statement, choose the answer which best describes your feelings.

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<tr>
<th></th>
<th>Not at all</th>
<th>A little bit</th>
<th>Somewhat</th>
<th>Quite a bit</th>
<th>Very much</th>
<th>Refuse to Answer</th>
<th>Not Applicable</th>
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<tbody>
<tr>
<td>1. When I’m with my friends, I feel completely able to relax and be myself.</td>
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<td>2. I share the same approach to life that many of my friends do.</td>
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<td>3. People who know me trust and respect me.</td>
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<td>4. No matter what happens, I know that my family will always be there for me, should I need them.</td>
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<td>5. When I want to go out to do things, I know that many of my friends would enjoy doing these things with me.</td>
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<td>6. I have at least one friend I could tell anything to.</td>
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<td>7. Sometimes I’m not sure if I can completely rely on my family.</td>
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<td>8. People who know me think I am good at what I do.</td>
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<td>9. I feel very close to some of my friends.</td>
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<td>10. People in my family have confidence in me.</td>
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<td>11. My family lets me know they think I am a worthwhile person.</td>
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<tr>
<td>12. People in my family provide me with help in finding solutions to my problems.</td>
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<td>13. My friends would take the time to talk over my problems, should I ever want to.</td>
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<td>14. I know my family will always stand by me.</td>
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<td>15. Even when I am with my friends, I feel alone.</td>
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## Appendix G - Engagement Coping Scale

Please read each item below and indicate, by clicking the appropriate box, to what extent you used it in the past month to cope with having/living with H. I.V.

<table>
<thead>
<tr>
<th>Item</th>
<th>Not at all</th>
<th>A little bit</th>
<th>Some what</th>
<th>Quite a bit</th>
<th>Very much</th>
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<tbody>
<tr>
<td>1. Made light of the situation</td>
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<td>2. Went on as if nothing bad happened</td>
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<td>3. Didn't let it get to me; refused to think too much about it</td>
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<td>4. Tried to forget the whole thing</td>
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<td>5. Looked for the silver lining, so to speak; tried to look on the bright side of things</td>
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<td>6. Went along with fate, sometimes I just had bad luck</td>
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<td>7. Talked to someone to find out more about the situation.</td>
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<td>8. Talked to someone who could do something concrete about the problems</td>
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<td>9. I asked a relative or friend I respected for advice.</td>
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</table>
10. Talked to someone about how I was feeling.  

11. Accepted sympathy and understanding from someone.  


13. Wished that the situation would go away or somehow be over with.  

14. Hoped a miracle would happen.  

15. Had fantasies or wishes about how things might turn out.  

16. Tried to make myself feel better by eating, drinking, smoking, using drugs or medication, etc.  

17. Avoided being with people in general.  

18. Took it out on other people.  

19. Slept more than usual.  

20. I knew what had to be done, so I doubled my efforts to make things work.  

21. Made a plan of action and followed it.
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<tbody>
<tr>
<td>22. Just concentrated on what I had to do next, the next step.</td>
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<td>23. Changed some things so things would turn out alright.</td>
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<td>24. Drew on my past experiences; I was in a similar situation before.</td>
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<td>25. Came up with a couple of different solutions to the problem.</td>
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<td>26. Changed or grew as a person in a good way.</td>
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<td>27. I came out of the experience better than when I went in.</td>
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<td>28. Found new faith.</td>
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<td>29. Rediscovered what is important in life</td>
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<td>30. I prayed.</td>
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<td>31. I changed some things about myself.</td>
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<td>32. I was inspired to do something creative.</td>
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Appendix H- Study Design Flowchart for Project Reflect

Client is recruited for the study:

- Face to face interactions w/AIDS service organizations (ASO)
- Outreach presentations
- Recruitment brochures
- Advertisements placed in AIDS-related magazines.

Interested clients call study institutions for information and screening:

- Consent form is completed
- 50 years or older
- Self-reported HIV/AIDS status
- BDI score between 10 and 40
- A score above 75 on 3MS

Eligible client presents to the ASO or conveniently located community health care center:

- Client completes the pre-intervention questionnaire using audio.
- Computer assisted self interview (A-CASI) technology.
- Computer provides a visual display and audio reading of each question and its response options.
- Participants use audio headsets to minimize interruptions in the environment and to circumvent literacy limitations.

Discharge Process:

Client receives $30.00 after completing the study.