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PREDICTORS OF DEPRESSION IN AFRICAN AMERICAN MEN AND THEIR IMPLICATIONS FOR COMMUNITY AND INDIVIDUAL FOCUSED INTERVENTIONS.

By

Michael A. Robinson
B.S. DePaul University 1988
M.S.S.W., University of Louisville 2006

A Dissertation
Submitted to the Faculty of the
Graduate School of the University of Louisville
in Partial Fulfillment of the Requirement
For the Degree of

Doctor of Philosophy

Raymond A. Kent School of Social Work
University of Louisville
Louisville, Kentucky

and

College of Social Work
University of Kentucky
Lexington, Kentucky

May 2010

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Predictors of Depression in African American Men and Their Implications for Community and Individual Focused Interventions.

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A Dissertation Approved on

March 23, 2010

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DEDICATION

I would like to dedicate my dissertation and my life to my wife, best friend, and colleague, Michelle Robinson. Michelle has been with me from the beginning of this tumultuous journey (actually she was the one who suggested that I take this ride) and has shared with me the ups and downs of writing a manuscript of this magnitude. She has been my sounding board and my rock, all the while pounding out her dissertation as well. This piece marks the end of one chapter of our lives and the beginning of another, and if chapter one is any indication of things to come, then I am in for the time of my life during chapter two. With Michelle at my right, I cannot wrong.

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I would like to recognize my family, especially my mother, for having faith in me throughout my life and always encouraging me to do the right thing and to follow my dreams. At times I know I let her down, but I hope I have made up for my shortcomings and regained my position as the apple of her eye. I would also like to acknowledge my brother Renault, who has served as a father figure to me while I was growing up and a best friend when I needed one. My sister Rochelle has always been a solid rock of our family and always managed to keep us together on holidays and special occasions, and my sister Arlene encouraged me to succeed and financially supported me when I made the decision to go back to school after many years of being out. My sister Andrea has always been there when I needed someone to talk to, and my sister Diane always managed to make me laugh even when I did not want to. Last but not least, Sherrie my younger sister set the pace for me in school by graduating with two degrees and forcing me to have to "one up" her with a PhD (Ha!!!).

I would also like to acknowledge my dissertation committee starting with my chair, Dr. Rod Barber, who spent many days, nights, and weekends reviewing my work and offering good solid suggestions for improvement. I would like to thank Muriel Harris for taking the time to be a sounding board

when I needed to vent. I would like to thank Dr. Linda Alexander for serving as a mentor for a NIH grant and taking the time to write one of the best letters of recommendation I have ever received. I would also like to thank Dr. Adewale Troutman for serving as a benchmark for me and also for taking the time out of his very busy schedule to be on this committee. I would like to thank Dr. Richard Cloud for serving as a research mentor and allowing me to occupy his office for a three year period while I worked on my dissertation. Dr. Sharon Moore provided guidance and served as the voice of calm during tumultuous times. Last but not least, Dr. Diane Chlebowy served as a mentor and friend over the past year.

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ABSTRACT

Predictors of Depression in African American Men and Their Implications for Community and Individual Focused Interventions.

Michael A. Robinson

May 2010

Background: In any given year depression affects as many as 121 million people worldwide and 20 percent or 19 million people in the U.S. suffer from at least one episode of depression during their lifetime. In the U.S., depression has a substantial impact on the economy. It is estimated that $17 billion dollars in salary and/or equivalent compensation is lost due to missing work days, caused by major depression. Depression is considered a highly prevalent condition that can lead to significant functional impairments, such as absenteeism and work productivity and problems with activities of daily living. This study focuses on depression in African-American men, and addresses three research questions. What are the differences in the magnitude and severity of depression among African- American (AA) and non-Latino white (nLw) males and females? What variables in the Socio Determinants of Health model predict depression in African American males? Given the research results, what types of intervention could prevent or lessen the impact of depression in African-American males?

Methods: A multivariate analytical model was developed to answer research questions posed by this study. The general purpose of multiple regressions was to identify relationships between independent variables and the dependent variable, depression in African-American males. The study used a nationally representative sample from the National Survey of American Life dataset and used a revised Social Determinants of Health model as a conceptual framework to guide the analysis.

Results: Several steps were taken to select which predictor variables were significant in building a multiple regression model to predict depression in African-American males. In the end, 23 predictor variables were identified and these variables explained approximately 18.1 percent of the variance in the depression score. The top five predictors are distress, being African American, everyday discrimination, and hopelessness and mastery. This informs the reader that these variables are the top five predictors of depression. Moreover, regression results showed that the amount of variance explained in the dependent variable, depression, by each of the three sections of the Social Determinants of Health model, were: socioeconomic & structural determinants (1.1%), the community context (5%), and the individual level factors (12%). The final chapter addresses the implications of these findings for policy and programmatic interventions.

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Health is "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (WHO, 1948).

More than 54 million Americans have a mental disorder in any given year, although fewer than 8 million seek treatment (NIMH, 1999).

CHAPTER 1: PROBLEM STATEMENT AND STUDY OVERVIEW

Mental disorders are the top four leading causes of disabilities worldwide, and of those four, depression is the number one cause. Mental illnesses have surpassed cardiovascular diseases, which were previously the leading cause of disabilities. In any given year depression affects as many as 121 million people worldwide (WHO, 2008; 2002; Gotlib & Hammen, 2002). Gotlib and Hamilton (2008) espouse that up to 20 percent or 19 million people in the U.S. suffer from at least one episode of depression during their lifetimes. In the U.S., depression has a substantial impact on the economy, it is estimated that $17 billion dollars in salary and/or equivalent compensation is lost due to missing work days caused by major depression (Donahue & Pincus, 2007; Kessler, Berglund, Chiu, Demler, et al., 2004; Pignone, Gaynes, Rushton, Orleans, et al., 2002). Though alarming, these statistics may not be completely accurate because many men fail to report symptoms of depression to medical professionals (Cochran & Rabinowitz, 2000). The National Institute of Mental Health (2009) disclosed that researchers estimate in excess of six million men in the United States have a depressive

disorder. This figure denotes that men represent about one-third of all adults living with depression in any given year.

In addition, depression has an estimated $43 billion annual impact on the utilization of the mental healthcare system (Pignone, et. al., 2002). Major depression is the second leading cause of disability-adjusted life years (DALYs) lost in women and the tenth leading cause of DALYs lost in men (Michaud, Murray, & Bloom, 2001). Depression is a burdensome disease (Grant, Stinson, Dawson, Chou, et al., 2004; Waraich, Golder, Somers, & HSU, 2004; Murray & Lopez, 1996), chronic and costly (Pignone, et. al., 2002) and is exceedingly prevalent (Gotlib & Hammen, 2002). Moreover, "In the United States, the economic burden of depression was estimated to be $83 billion in 2000" (Williams, Gonzalez, Neighbors, Nesse et al., 2007, p. 305).

Health disparities refer to gaps in the quality of health and healthcare across socioeconomic groups, race and ethnicity, and the elimination of healthcare disparities is one of the two main goals of Healthy People 2010 (Krieger, Waterman, Chen, Subramanian, et al., 2007) and a major focus of the U.S. government health policy (Golberstein, Eisenberg, & Gollust, 2008). Williams, Gonzalez et al. (2007) revealed that African Americans are overrepresented in the high need populations. The Surgeon General's report (1999) indicates that disparities between African Americans and the white population oftentimes can be attributed to differences in poverty, marriage rates, geographic location, and other population characteristics. Fifty-three percent of

all African Americans live in the South and in segregated neighborhoods. Moreover, poor African Americans tend to live among other African Americans of similar socioeconomic status, and poor neighborhoods have fewer resources such as mental health facilities and specialists. Overall, African Americans are relatively poor compared to non-Latino whites; 22 percent of African-American families had income below the poverty line as compared to 10 percent of non-Latino white families (Surgeon General, 1999).

Depression is considered a highly prevalent condition that can lead to significant functional impairments, such as absenteeism and low work productivity (Donohue & Pincus, 2007) and problems with the activities of daily living. Williams, Gonzalez et al. (2007) found in the National Survey of American Life (NSAL) study of the 3,434 African Americans and 668 non-Latino whites that lifetime prevalence rates for major depression were highest for non-Latino whites at 17.9 percent and 10.4 percent for African Americans. However, the persistence of major depression was 56 percent for African Americans and only 36 percent for non-Latino whites. These findings are the results of the largest psychiatric epidemiologic study of African Americans in the U.S.

An important issue that highlights the urgency of addressing depression in African Americans is **suicide**. Suicide is the 11th leading cause of death among all Americans, and according to the Center for Disease Control and Prevention report, the prevalence rates for older African-American adolescents is 7.6 percent as compared to whites at 7.3 percent. Joe, Baser, Breeden, Neighbors et al.

(2006) also revealed that 12.2 percent of African-American youth have seriously considered suicide. Compton, Thompson, & Kaslow (2005) revealed that suicide is the seventh leading cause of death for African Americans ages 10–14, the third leading cause of death among those ages 15–24, the sixth leading cause of death among those ages 25–34, and the ninth leading cause of death among those ages 35–44. Furthermore, Joe (2006) argues that health professionals, including social workers, should focus on the socio-cultural differences in the expression of depression and suicide in the African-American population.

Conceptual Model for this Study: Revised Social Determinants of Health Model

The social determinants of health (SDH) gained momentum in the mid 1970's when the British epidemiologist, Sir Michael Marmot, found that people in high social status had better health than those of lower socioeconomic status. The concept of SDH encompasses the full set of social conditions in which people live and work, and the factors involved in shaping the SDH are the distribution of money, power, and access to resources related to education, job opportunities and social contacts.

Moreover, the SDH modality further emphasizes that low social status, relentless stress, adversity in early life, social exclusion, stress at work, unemployment, absence of social support, addiction, poor nutrition, and an environment that promotes physical inactivity contribute to poor health as do behavioral, biological and genetic factors (Kottke & Pronk, 2009). In addition,

health research also indicates that environmental, economic and social factors such as a safe environment, adequate income, meaningful and valued social roles, secure housing, higher levels of education and social support are all associated with better health and well being (Kottke & Pronk, 2009). According to the Institute of Medicine (IOM) (2003), a true public health approach requires that we look beyond individual services and seek to address causal factors in policy, in the environment, in our institutions, and in culture. The impact of social and political conditions on health, and the need for collaboration with sectors such as agriculture, education, housing and social welfare to achieve health gains is also needed (Marmot & Wilkinson, 2006; Wilkinson & Marmot, 2003; Kreiger, 2001). While the literature stresses this broader view, none of the major studies on depression in African-American males used a Social Determinants of Health (SDH) model.

The SDH model is a framework for addressing health and well being and serves as the foundation for this research. There are numerous models discussed in the literature, but the SDH model seems to encompass both individual, community, and structural factors that are relevant to depression in African-American males. This framework was developed for the Queensland government (a state in the commonwealth of Australia) as a means for contextualizing population health outcomes. The SDH model shown in Figure 1 is a revision of the original Queensland Government model. This revised model is

divided into four subcategories: socioeconomic & structural determinants, community context, individual factors, and population health outcomes.

The first subcategory, socioeconomic & structural determinants, includes a measure for socioeconomic status, poverty and education. The second subcategory is community context, which includes various aspects of social support and community influences on health. Individual level factors are divided into four subcategories: sociodemographics, health behavioral factors, psychosocial factors, and biological factors (all of which influence depression on an individual level). Lastly, for this particular study, the population health outcome is the level of depression as determined by the Center for Epidemiological Studies Depression Scale (CES-D). An important focus of this research is to identify the relative weight of each of these categories in predicting depression.

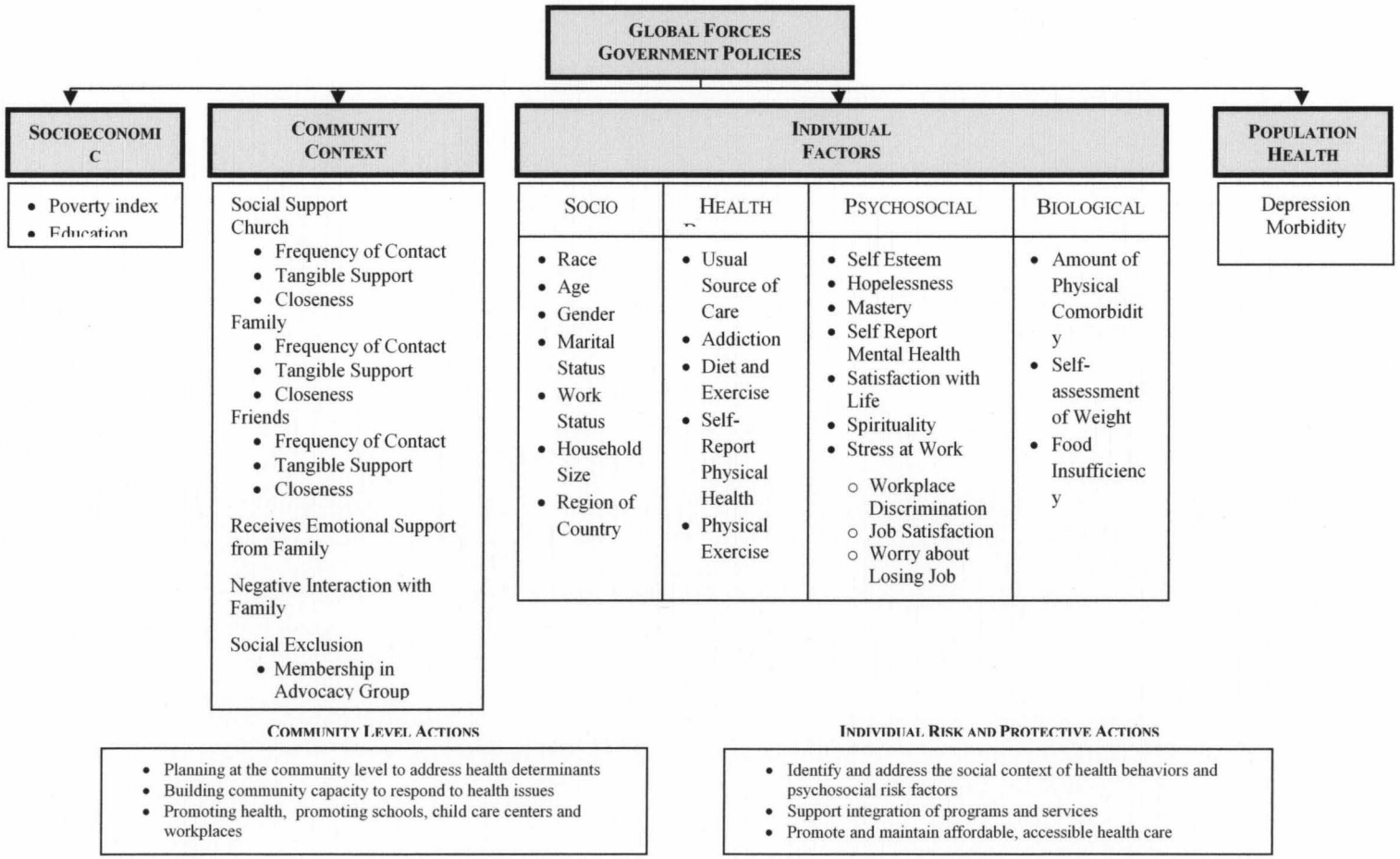
Relevance to Social Work

Why is the ability to predict depression in African Americans relevant for social workers? According to the National Association of Social Workers (NASW), social workers are the largest group of mental healthcare service providers as well as significant members of most depression treatment teams. African Americans are a marginalized population, and addressing the needs of this population is imperative because social workers interact with African Americans in many different venues. They serve as individual and family therapists and

Figure 1

A framework for addressing the social determinants of depression

Health is a matter that goes beyond the provision of health services as people's health cannot be separated from the social, cultural and economic environments in which they live, work, and play.



crisis interventionists. They perform case management functions, monitor medication compliance, and assist with maintaining medical appointments, which is especially important for people for whom depression is a relapsing illness. Social workers also need to be able to identify depression and depressive symptomology and focus on non-treatment interventions such as mobilizing social support networks and advocating for organizational and policy change.

African-American culture is a macro-level phenomenon that includes behavioral practices, belief systems, values and institutions within the social environment, and research shows that depression can be linked to many of these variables. In addition, social workers who are involved in macro practice, such as community organizing, planning and program development, and human service management can also benefit from this research. Depression not only affects individuals; it also affects families and communities (NIMH, 2009). In order to effectively address depression in African-American males, social workers also can develop programs that can provide protection to communities or policy changes that address socioeconomic and structural determinants of poor health that create health disparities among vulnerable populations including African-American males with depression.

Research Questions

The following research questions are addressed in an effort to better understand depression in African-American males:

- What are the differences in the magnitude and severity of depression among African- American (AA) and non-Latino white (nLw) males and females?
- What variables in the Socio Determinants of Health model predict depression in African American males?
- Given the research results, what types of intervention could prevent or lessen the impact of depression in African-American males?

Data Source

A secondary analysis of the **National Survey of American Life** (2001-2003) was conducted. The NSAL yielded 6,199 adult interviews. Eighty-six percent of the interviews were face to face with subjects who self identified in the following three categories: African American, Afro-Caribbean, and non-Latino whites. The NSAL is the largest dataset to date on mental health and African Americans and was collected from a representative sample of the US adult population. These studies collectively provide the first national dataset with sufficient power to investigate cultural and ethnic influences on mental disorders. The next step of the process involves an exhaustive search of the current literature on depression in African Americans.

CHAPTER II: LITERATURE REVIEW

This chapter is a review of relevant literature and presents a history of mental healthcare from the 1600 to today as it pertains to African Americans. This review will be followed by findings of two national studies: the National Study of Black Americans (NSBA) and the National Survey of American Life (NSAL). Using the Social Determinants of Health perspective as espoused by Marmot & Wilkinson (2006) and Krieger et al. (2007) as framework for this study's literature review, all factors associated with depression are discussed.

Historical Overview:

Historically, African Americans have faced many adversities beginning with the slave trade in the early 1600's where they remained in bondage until the Civil War. After the Civil War, African Americans were still denied many of the basic human rights that white Americans enjoyed; these exclusions included the right to vote, the right to an education, equal employment opportunities, socioeconomic resources, and healthcare. Many of these exclusions were addressed throughout history: the passing of the Emancipation Proclamation in 1863 ended slavery in various states; the 13th amendment to the Constitution in 1865 abolished slavery for all of the United States; the 14th amendment extended citizenship to African Americans in 1868; the 15th amendment in 1870

afforded African-American men the right to vote; and Brown versus the Board of Education in 1954 was responsible for outlawing segregation in public schools.

Although many of these inequities have been addressed throughout history, health disparities remain a contemporary issue. Thomas (2001) writes that in 1906 W.E.B. Dubois authored a book entitled *The Health and Physique of the Negro American,* which documented health disparities between African Americans and non-Latino whites. Eight years later in 1914, Booker T. Washington expressed a view that the health status of the African American was an obstacle to economic progress. These prominent African-American social activists recognized the vast importance of health disparities in the early twentieth century. However, African Americans still experience major inequalities, and among these inequalities is a disparity in mental healthcare (U. S. Surgeon General, 1999). Dorothy Roberts broached the topic of health disparities by describing a series of events beginning in the late 1980's and continuing into the early 1990's that document instances of unfair and unjust health treatment that African Americans experienced (Thomas, 2001). According to Martin Luther King, Jr., "Of all forms of inequality, injustice in healthcare is the most shocking and inhumane" (King, M. L., 1966 as cited by Griffith, Mason, Yonas, Eng, et al., 2007).

A document produced by the U. S. Department of Health and Human Services (2000a) shows that African Americans as a group bear a disproportionate burden of health problems. Disparities found in research are

attributed to the impact of black-white demographics and socioeconomic differences in poverty, marriage rates, regional distribution, social status, and population characteristics (Surgeon General, 1999). Mohammed (2006) states, "researchers are challenged to understand the complexities of how inequalities in health came to be and how we can comprehensively address them" (p. 68). In 1990 depressive disorders were estimated to be the leading cause of disabilities worldwide (Ustun, Ayuso-Mateos, Chatterji, Mathers et al., 2004).

The United States Census (2000) shows that African Americans comprise 34,361,740 of the total population, roughly 12.2 percent, and African-American males comprise 16,284,366 or 5.8 percent of the population in the United States. Upon closer examination, the U.S. Census reveals that 35.5 percent of the African-American population are males under the age of 18. In addition, 45 percent of men have never been married and approximately 15 percent are separated, widowed, or divorced. Approximately, 21.5 percent of African-American men have less than a high school education, 34.8 percent graduated from high school, and 16.4 percent have earned an undergraduate degree (U.S. Census, 2000).

Additionally, out of a labor force of 217 million people, 25 percent or 12 million are African American and about 68 percent of the total employed African Americans are males. McKinnon (2003) revealed that the unemployment rate for African Americans is twice that for non-Latino whites (11% and 5% respectively). Lastly, about 20 percent of African-American men live below the federal poverty

line; this is nearly three times higher for AA males than for non-Latino white men. These estimates are likely much lower than the actual figures, as African Americans are 3.5 times more likely to be homeless and therefore unlikely to be counted in the census (U.S. Census, 2000). The relationship between mental health and race/ethnicity, gender, socioeconomic status, and educational attainment was reported in several research studies (Mohammed, 2006) and is a main focus in the research on the social determinants of health.

National Studies of Depression:

As a social problem, depression has been examined in four national studies (see appendix 2). However, only two of the four primarily focused on African Americans. The first study, the National Survey of Black America (NSBA) (1979-1980, 1987-1988, 1988-1989, and 1992) consisted of a National multistage probability sample and every Black American household in the continental United States had an equal probability of being selected. Wave 1 was administered to 2,107 respondents, Wave 2 to 951 respondents (including 935 from Wave 1), Wave 3 to 793 respondents (including 779 from Wave 2), and Wave 4 to 659 respondents (including 1 from Wave 1, 28 from Wave 2, and 623 from Wave 3). The main instrument used to measure depression in the population was the CES-D (Radloff, 1977), which are addressed later in this chapter.

The second study, The National Survey of American Life (NSAL) (2001), was designed to explore racial and ethnic differences in mental disorders and

psychological distress, from within the context of a variety of presumed risk and protective factors in the African-American and Afro-Caribbean populations of the United States as compared with White respondents living in the same communities. Special emphasis in the study is given to the nature of race and ethnicity within the black population by selecting and interviewing national samples of African-American (N = 3,570), and Afro-Caribbean (N = 1,623), with consideration for immigrant, second, and older generations within these populations (Jackson, 1997). Using the results of the NSAL, Neighbors, Caldwell, Williams, Nesse et al. (2007) found that the seriousness of mental illness, race, ethnicity, age, gender, and education were contributing factors to depression.

In order to better organize the study, the revised SDH model serves as the framework for organizing the variables for the study. Moreover, this framework is used to organize the findings as well.

Dependent Variable-Depression

According to the World Health Organization (WHO) (2008), depression is a common debilitating (Jackson-Trichea, Sullivan, Wells, Rogers et al., 2000; National Institute on Mental Health (NIMH), 2009), but serious mental disorder characterized by sadness, loss of interest or pleasure, feelings of guilt (National Institute on Mental Health (NIMH), 2009) or low self-worth, disturbed sleep or appetite, low energy and poor concentration (Gotlib & Hamiliton, 2008). Depression is a major contributor to functional disability, a cause of diminished

productivity, and an increased use of healthcare services (Birrer & Vemuri, 2004).

The CES-D scale: Depression was measured in the National Survey of American Life (NSAL) using a slightly modified version of the Center for Epidemiologic Studies Depression Scale (CES-D), which is a 20 item symptom scale. According to Locke & Putnam (n.d.) of the Center for Epidemiological Studies, and the National Institute of Mental Health:

> The CES-D was tested in household interview surveys and in psychiatric settings. It was found to have very high internal consistency and adequate test-retest repeatability. Validity was established by patterns of correlations with other self-report measures, by correlations with clinical ratings of depression, and by relationships with other variables that support its construct validity. Reliability, validity, and factor structure were similar across a wide variety of demographic characteristics in the general population samples tested (p. 1).

The items require the respondent to indicate how they have behaved or felt in the past 7 days. For example, I was bothered by things that usually don't bother me, I did not feel like eating, I felt that I could not shake the blues, I felt that I was just as good as other people, I had trouble keeping my mind on things, and I felt lonely. This scale is important in the current research because it provides a valid and reliable means of measuring the dependent variable, depression, in the population.

Meyers and Weisman (1980) argue that symptom scales are useful for the screening of depressed persons in research studies but are only rough indicators of clinical depression in the community. The CES-D is one of the best known survey instruments for measuring depressive symptomology in the population; however, this instrument cannot distinguish between primary and secondary depression. Moreover, the CES-D was designed to measure major symptoms of depression identified in the literature with an emphasis on affective components: depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness. The items on the CES-D were selected from many well known clinical instruments such as the Becks depression scale, the Zung Self Rating Depression Scale, Raskin's Depression Scale, and Minnesota Multiphasic Personality Inventory. The score is a symptom count scale and is applicable across age and socioeconomic groups (McDowell, 2006).

Literature review on Independent variables

Independent variables are arranged according to how they appear in the SDH model. There are three main categories, with subcategories to help organize the independent variables: socioeconomic & structural determinants; community context (with three subcategories: social support, social exclusion, and community/neighborhood factors); Individual factors, (with four subcategories: sociodemographics, health behavioral, psychosocial, and biological factors).

Socioeconomic & Structural Determinants

People of higher social economic status have better health and happiness than people with lower economic status (Shaw, Doring, & Smith, 2006). Many health problems have their causal roots in our economic system, in housing, in the jobs people do, in the natural and built environment, in politics, and in institutional systems and policies (Marmot & Wilkinson, 2006; Wilkinson & Marmot, 2003; Kreiger, 2001). The **poverty index**, an indication of the standard of living in industrialized countries, was developed by the United Nations. Each year the US Census Bureau estimates the amount of income needed for households to meet their basic needs. These basic needs may include good health, the minimum caloric intake, acceptable housing, clothing, and the ability to get to a job. In an examination of patient records between 1999 and 2004, Hudson (2005) found that people who had been hospitalized at least twice for mental illness lived in less affluent areas. Riolo, et al. (2005) found that people living in poverty are 1.5 times more likely to have the prevalence of depression.

When a family cannot meet this basic financial threshold, they are living below the income poverty line which can negatively affect health (Shaw, Doring, & Smith, 2006). This is evidenced in a recent study in England examining the relationship between poverty and health. The results show an inverse relationship between mortality rates and socioeconomic status (SES). The death rate ratio for manual jobs (low SES) and non-manual jobs (higher SES) in

England was 1.46 (for 30-44 year old men) and 1.44 (for 45-59 year old men). In other words people who had low SES jobs had a higher mortality rate (Shaw, Doring, & Smith, 2006).

In the National Survey of Families and Households in the US, Inaba, Thoits, Ueno, Gove et al. (2005) found in a sample of 8111 participants that there is an inverse relationship between **education** and the level of depression. Williams, Gonzalez et al. (2007) found that the level of education influences prevalence rates for depression. They revealed that from 0 – 11 years of education, non-Latino whites (12.4%) had higher prevalence rates than African Americans (11.3%); and at 12 years of education, non-Latino whites (17.1%) had the highest lifetime prevalence rate compared to African Americans (9.1%).

Community Context

Social support is one of most important factors in predicting physical health and well-being in all individuals (Cutrona, Russell, & Rose, 1986), and social support has a positive effect on both physical and mental health (Stansfeld, 2006). Social support can be measured by looking at several factors. One means of support is the **Church**, and according to Taylor & Chatters (1989), the church provides spiritual, emotional, and material assistance to many African Americans. Researchers at Temple University found that 30 percent of individuals who attended religious services are less likely to have depression (Cree, 2008).

Another reliable alliance of support which many individuals know they can depend on receiving is support from **family** members. That can mean parents, siblings, or any extended family members. Social support also includes the opportunity for nurturance as well. It means the person would get some social enhancement by having children of their own and providing a nurturing experience (Cutrona, Russell, & Rose, 1986). In addition, **friends** provide another level of social support; this support oftentimes includes assurance of worth from others such as positive reinforcement that inspires and boosts the self-esteem. Jackson, Neighbors, Nesse, Trierweiler et al. (2004) collected data on **receives emotional support from family**, and **negative interaction with family**, and they are used in this study as well.

Social Exclusion:

Membership in an African-American advocacy group was investigated because there are many studies that indicate that anyone who has high social support tend to have less chance of getting depression and anxiety disorders (Uchino, Cacioppo, & Kiecolt-Glaser, 1996). Recent studies have also shown that there is a relationship between discrimination and depression. Gee (2008) found in a cross sectional study that discrimination at multiple levels influences the health of minority group members. Discrimination may affect an individual's sense of control and promote hopelessness, and these factors in turn may lead to depression or another mental disorder (Williams & Williams- Morris, 2000; Perlow, Danoff-Burg, Swenson, & Pulgiano, 2004). Schulz, Gravlee,

Williams, Israel et al. (2006) found evidence that a change over time in **everyday discrimination** is associated with a change over time in symptoms of depression; in other words, as experience of everyday discrimination increases, the level of depression increases as well. Panter, Daye, Allen, Wightman et al. (2008) found in a study of 8000 students that everyday experiences of discrimination are associated with negative mental and physical health as well.

In a national study exploring mental health and depression, researchers found that minorities who were discriminated against had poorer health outcomes than non-Latino whites (Roberts, Swanson, and Murphy, 2004). Borrell, Kiefe, Williams, Diez-Roux et al. (2006) found in their study on self reported physical and mental health, racial discrimination, and skin color that there is a statistically significant relationship between discrimination and mental health. According to Jones (2009), we also need to address racism, in order to achieve social justice and eliminate health disparities. **Internalized racism**, according to Williams, Norman, and Norman (2007), adversely affects health. David Williams, director of the Robert Wood Johnson Foundation Commission to Build a Healthier America, revealed in a fairly dramatic study done in Milwaukee, Wisconsin that the researchers sent African American and non-Latino white testers, all men with identical resumes, to apply for 350 entry level jobs. The results show that an African-American male with a clean record, no criminal record, was less likely to be offered a job than a white male with a felony

conviction. This researcher did not find literature addressing **coping with discrimination** and **contact with neighbors.** However, these variables are included in this study because designers of the NSAL collected this data, and the first variables are related to social exclusion and the second to community/neighborhood interaction. Therefore both were retained for this study.

Ellen, Majanovich, and Dillman (2001) found evidence that suggests **neighborhood safety** and crime and violence shape health behavior and, to some extent, mental health. Clark, Kawachi, Ryan, Ertel et al. (2009) found in a study of 1248 people that 36 percent of the participants who were depressed felt their neighborhood was unsafe. Although the literature on **neighborhood safety** and depression and **neighborhood participation** and depression is scant, it is included in the study because the NSAL study designers collected information on neighborhood safety.

Individual Factors

Individual Factors: Sociodemographics- According to Stansfeld (2006), there is an increasing interest in examining the effects of social support by ethnicity. Differences in health across racial groups are well documented (Williams, Gonzalez et al., 2007; Nazroo & Williams, 2006; US DHHS, 2001). Alegria, Takeuchi, Canino, Duan et al. (2004) conducted an examination of 12 month prevalence rates of depression by **race,** using the World Mental Health Composite International Diagnostic Interview (WMH-CIDI) and the combined

Collaborative Psychiatric Epidemiology Surveys (CPES). With the CPES sample of N=8762, Alegria et al. (2007) found that 10 percent of the combined sample experienced a depressive disorder in the past 12 months. A further examination revealed that out of the 2890 African Americans sampled, eight percent experienced a depressive disorder over the past 12 months. Out of 2,834 non-Latino whites, 11.2 percent experienced depression over the past 12 months. Williams, Gonzalez et al. (2007) found that African Americans have lower lifetime prevalence, but a higher risk of persistent major depressive disorder (MDD) than non-Latino whites. The Epidemiologic Catchment Area study concurred; they revealed that with regard to the epidemiology of major depression, the one year prevalence rates for African Americans and for non-Latino whites was 2.2 percent and 2.8 percent respectively.

There is a large body of research that revealed that there is a relationship between **age** and depression (Brown, Ahmed, Lawrence, Milburn, et al., 1995). "The prevalence of depression is high among elderly persons, and longitudinal studies have found modest increases in depressive symptoms with age" (Beard, Cerda, Blaney Ahem, et al., 2009, p. 1308). Wiber, Zenk, Wang, Oh et al. (2009) found that African Americans and Latinos experience higher symptom levels in early adulthood in comparison to whites, but equivalent levels by middle age.

Research revealed that there is strong association between **gender** and depression and females have a higher prevalence than males (Brown, et al.,

1995). It has been widely documented that there are gender differences in depression prevalence, with women experiencing major depression about twice as often as men. The lifetime risk of major depression in women is about 20 percent to 26 percent compared to about eight percent to 12 percent for men. This risk exists independent of race or ethnicity. Stansfeld (2006) found that men benefited more from support from their spouse, whereas women benefited more from their close network (not their husbands). According to Frech and Williams (2007), there is a growing body of research literature that suggests that **married couples** experience fewer symptoms of depression, less stress, better health, and a higher sense of well-being, than single people or couples who are unmarried.

Williams, Gonzalez et al. (2007) found a significant relationship between **work status** and depression. They revealed that 15 percent of unemployed African Americans had depression; however, this number decreases to 11 percent among those who were employed. The literature on depression and **household size** was scant; however, the NSAL designers included an analysis of depression and household size, so it is examined in this study.

Region of country (urban/rural): In a cross sectional study using the data from the National Health Interview Survey, researchers found that the prevalence for depression was higher among rural residents than urban residents 6.1 percent to 5.2 percent respectively. Furthermore, they revealed that rural residents are more likely to experience circumstances that contribute to

depression, such as living conditions and behaviors that challenge health (Probst, Laditka, Moore, Harun et al., 2006).

Individual Factors: Health Behavior- Health Behavior can be defined as an action taken by a person to maintain, attain, or regain good health and to prevent illness (VandenBos, 2007). There are four health behaviors in the dataset that are investigated: usual source of care, addiction, diet and exercise, and self report physical health status. The NSAL survey instrument included items inquiring about these four variables. Those without a **usual source of health care** are more likely to have unmet needs for care, more hospitalizations, and higher costs of care, and they are less likely to keep doctor appointments and receive preventive care services (Starfield 1998). Therefore, it stands to reason that having a usual source of care can affect health and mental health.

Alcohol abuse and drug addiction have been classified by the Center for Disease Control (CDC) as diseases and either **addiction** can cause serious, long-term consequences including problems with physical and mental health, relationships, employment and the law (Mayo Clinic, 2009). According to the WHO (2009), unhealthy **diet**s and lack of physical **exercise**/activity are major risk factors for chronic diseases. Overall, 2.7 million deaths are attributable to low fruit and vegetable intake, and 1.9 million deaths are attributable to physical inactivity. Liebson, Garrard, Nitz, Waller et al. (1999) found **self-rated physical health** was also negatively correlated with depression: 69 percent of

individuals who rated themselves "unhealthy" exhibited depressive symptoms as compared to 31 percent of those who rated themselves "very healthy" who exhibited depressive symptoms. **Physical exercise** is also included in the NSAL and is investigated in this study as well.

Individual Factors: Psychosocial- The relationship between **self esteem** and depression has been examined conceptually and empirically in many studies. Self esteem has been found to be a central component of depressive symptoms and has been found to be negatively correlated. Moreover low self esteem plays a decisive role in the onset of depression (Beck, 1967; Inkson, 1978; Brockner & Guare, 1983; Tennen, Herzberger, & Fisher-Nelson, 1987). In a study by Maestas, Amidon, Baum et al. (2008) using a sample of 24 women with high depression and 28 women with low depression, they found significant differences the level of depression and self–esteem. In other words, as self esteem decreased, severity of depression increased. Many studies have documented the strong negative correlation between self-esteem and depression (Brockner & Guare, 1983; Tennen, Herzberger, & Fisher-Nelson, 1987).

Hopelessness has been depicted in many studies as one of the indicators of depression (Murphy, Ciarrocchi, Piedmont, Cheston et al. 2000), and theories of depression have also indicated that hopelessness is a key characteristic (Beck, 1967; Beck, Rush, Shaw, & Emery, 1979). In a study on 126 participants by Ceylan and Aral (2007), they found a significant correlation between hopelessness and depression. The **Mastery Scale** which is widely

used to discern patterns of self efficacy is also an important indicator of depression. Several studies have found a significant negative correlation between mastery and depression (Schreiner & Morimoto, 2003). Chung, Pan, and Hsiung (2007) found in a study of 237 patients suffering from depression that higher levels of mastery result in a higher quality of life which affects the level of depression experienced by the individual. Basically the higher the mastery, the lower the level of depression experienced.

There are a multitude of clinical instruments designed as self report measures of depression. These instruments include the Beck Depression Scale, Zung Self-Rating Depression Scale, Hamilton Depression Rating Scale, Geriatric Depression Scale, and the CES-D. Reliability and validity varies on each of these instruments; however, they are measures of **self report mental health** status. The developers of the NSAL included an item in the dataset that inquires about participants self perception of their mental health, and **satisfaction with life**. Therefore, these two variables are investigated in this study.

Religion and **spirituality** are sometimes used interchangeably; however, religion for the purpose of this research is an organized system of beliefs, practices, rituals, and symbols. Spirituality is a quest for understanding of the meaning of life with a higher power of one's own choosing. Wittink, Joo, Lewis, and Barg (2009) found in a mixed methods study that depression is caused by a spiritual illness. Moreover, they found that there is research linking religious involvement with psychological well-being among African Americans, and it

indicates that prayer is an important means of coping with serious personal problems.

According to the NIMH (2009), long-term stress can increase the risk of diseases like depression, heart disease, and a variety of other problems. Repeated exposure to stress may be related to many physical and mental illnesses. Stress and health are closely linked, and it is well known that stress can induce perilous physical and mental disorders. Workplace discrimination has been linked to mental health issues in several studies. The developers of the NSAL have collected data on **workplace discrimination** and depression, and this variable is investigated in this study also. Williams and Hicks (1999) found in a study of 5651 physicians that perceived stress as a result of not having **job satisfaction** lead to depression, anxiety, and burnout. Moreover, job loss can lead to a major change in social status and loss of income and may lead to low self-esteem as well. This variable appears to be important enough for the designers of the NSAL because this was an item in the survey. Therefore, an investigation of the variable, **worry about losing job,** is a part of this study.

van Weel-Baumgarten and Lucssen (2009) revealed that there is a connection between **distress** and depression and in order for physicians to diagnose depression, the patient must admit distress. They also found that patients tend to want to handle distress themselves, thus the diagnosis of depression can be missed by physicians. There is a scale built into the NSAL dataset that measures distress; therefore, it is used in this study. Researchers at

the Mayo clinic have found an association between **chronic stress** and depression. They revealed that vulnerable individuals are more likely to develop depression as a result of chronic stress. Chronic stress has been measured in the NSAL dataset as well and is examined in the current study. According to the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition (DSM-IV), worry is a main indicator of generalized anxiety disorder, which oftentimes co-occurs with depression. Although **worrying about bills** was not addressed separately in the literature, it was included in the NSAL data and is included in this study.

Individual Factors: Biological- Co-morbidity is an important dimension of health, particularly in older persons (Voaklander, Kelly, Jones, & Suarez-Almazor, 2004). According to Xuan, Kirchdoerfer, Boyer, and Norwood (1999), coexisting diseases may have unexpected yet clinically significant effects on patients' health. In a study of 129 subjects, Riello, Geroldi, Zanetti, Vergani et al. (2004) using the Geriatric Depression Scale (GDS) to assess depression, and the Greenfield's Index of Disease Severity to assess **physical comorbidity**, found a positive relationship between depression and comorbid illnesses of the ear and hearing, the eyes and sight, and the head and face. The current study also investigates the influence of the amount of physical co-morbid illnesses on depression.

McCabe and Ricciardelli (2004) found in a study of 847 adolescents that there is a relationship between body image, body dissatisfaction, and depression.

Boys were more concerned with body dissatisfaction, and the girls were more concerned with body image, and both predictors were significantly related to depression in both. Therefore, in the current study, **self assessment of weight** is investigated for an association with depression. Using National Population Health Survey data and the stress process model, researchers found that the effect of food insufficiency on depression is stronger for men than women (Zhang & Schimmele, 2005). **Food insufficiency**, characterized by persons experiencing an exhausted household supply of food, is investigated in the current study as well.

This concludes the list of independent predictor variables that are examined in the current study. Although the literature is scant in some instances, we elected to keep these variables in the model because the developers of the National Survey of American Life have collected data on these variables, which are similar to variables included in the Social determinants of Health model.

Table 1

Summary Description of the Independent Variables in the Analysis

Variable List	Type of Measurement
Socioeconomic & Structural Determinants	
Poverty Index	Ratio
Education	Ratio
Community Context	
Social Support	
Church	Ordinal
Family	Ordinal
Friends	Ordinal
Receives Emotional Support from Family	Ratio
Negative Interaction with Family	Ratio
Social Exclusion	
Membership in Advocacy Group	Ordinal
Closeness to Racial Group	Ordinal
Everyday Discrimination	Ratio
Internalized Racism	Ratio
Coping with Discrimination	Ratio
Community / Neighborhood	
Contact with Neighbors	Ordinal
Neighborhood Safety	Ratio
Neighborhood Participation	Ordinal
Individual Factors	
Sociodemographics	
Race	Nominal
Age	Ratio
Gender	Ordinal
Marital Status	Ordinal
Work Status	Ordinal
Household Size	Ratio
Region of Country	Ordinal
Health Behavioral	
Usual Source of Care	Ordinal
Addiction	Ratio

Table 1 Continued

Summary Description of the Independent Variables in the Analysis

Variable List			Type of Measurement
		Diet and Exercise	Ordinal
		Self-Report Physical Health	Ordinal
		Physical Exercise	Ordinal
Psychosocial			
	Self Esteem		Ratio
	Hopelessness		Ratio
	Mastery		Ratio
	Self Report Mental Health		Ordinal
	Satisfaction with Life		Ordinal
	Spirituality		Ordinal
	Stress at Work		
		Workplace Discrimination	Ordinal
		Job Satisfaction	Ordinal
		Worry about Losing Job	Ordinal
	Relentless Stress		
		Distress	Ratio
	Chronic Stress		Ratio
	Worry about Bills		Ordinal
Biological			
	Amount of Physical Comorbidity		Ratio
	Self assessment of Weight		Ordinal
	Food Insufficiency		Ordinal

CHAPTER III: METHODOLGY

In this chapter, key terms and concepts are operationalized and the sample population is described. A brief history of the survey instrument, sample design, and procedures are detailed, and data source and collection procedures for the Composite International Diagnostic Interview (CIDI) are introduced. Lastly, a brief description of data analysis techniques is presented, and the last section discusses transformations, such as recoding, computations, that were undertaken to prepare variables for the bivariate and regression analyses.

History of Data Source

The forerunner to the National Survey of American Life (NSAL) was the National Survey of Black Americans (NSBA) series which was developed with input from social scientists, students, and a national advisory panel of Black scholars. The survey investigated neighborhood-community integration, services, crime, community contact, the role of religion and the church, physical and mental health, self-esteem, life satisfaction, employment, the effects of chronic unemployment, the effects of race on the job, interaction with family and friends, racial attitudes, race identity, group stereotypes, and race ideology (Jackson, 1991).

The NSBA was administered in 1977 and was a project funded by the National Institute of Mental Health (NIMH) Center for the Study of Minority Group Mental Health and developed by the Program for Research on Black Americans at the Institute for Social Research, University of Michigan. The NSBA primarily was developed to address the limitations in the existing research literature on the study of Black Americans. The NSBA sought to provide a suitable theoretical and pragmatic approach to concepts, measures, and methods in the study of Black Americans. The size and representativeness of the sample permit systematic investigation of the heterogeneity of the adult Black population. The series furnishes data on major social, economic, and psychological aspects of Black American life (Jackson, 1991).

The NSAL data was collected between February 2001 and March 2003 via face to face interviews which lasted approximately 2 hours and 20 minutes on average and for the most part, the interviews were conducted using laptop computer-assisted personal interview methods in the homes of respondents. Lastly, approximately 14 percent of interviews were conducted either partially or entirely by telephone.

Sample Design

The NSAL sample is a four stage national area probability sample design which consists of 64 primary sampling units and 56 of those units overlap with existing Survey Research Center's National Sample primary area. The remaining sampling units were comprised of households in southern states, so that African

Americans were represented in the proportions in which they reside nationally (Lincoln, Chatters, Taylor, & Jackson, 2007). The NSAL multi-stage sample design combines a core national area probability sample of households with a special supplemental sample of households in areas of higher Afro-Caribbean residential density. The NSAL core national sample is designed to be optimal for a national study of the African-American survey population. The design of the NSAL core sample resembles the design used for the National Survey of Black Americans completed in 1979-1980 (Hess, 1985; Jackson, 1991).

The NSAL population consisted of an integrated national household probability sample of U.S. adults 18 and older residing in the coterminous 48 states. The NSAL yielded 6,199 adult interviews with subjects who self identified in the three categories: 3,570 African American, 1,623 Afro-Caribbean, and 1,006 non-Latino whites (Heeringa et. al., 2004). The exclusionary criteria used in the selection of subjects are as follows: all institutionalized persons in jails, nursing homes, military bases, military reservations, dependent care facilities, and non-English speakers were excluded from the sample (Heeringa, Wagner, Torres, Duan et al., 2004).

Sample Design Procedures

Stage I is a stratified probability sample of US households (Heeringa et al., 2004) consisting of 64 primary stage units (PSU) or core sample areas which are either Metropolitan Statistical Areas (MSA), single counties, or groupings of geographical contiguous counties with small populations. PSUs are assigned to

explicit sampling strata based on MSA/non-MSA status. Out of the 64 PSUs, 21 are self representing primary stage units (SR PSU), where eight of the 21 are the largest MSAs and the remaining 43 are non self representing primary stage units (NSR MSAs) where 14 PSU out of the 43 SR PSUs represent the northeast, northwest, west, and the remaining 29 PSUs represent the urban and rural south. The largest sample was the south which is home to approximately 50 percent of the African-American population. This sample was increased in an effort to improve sampling precision (Heeringa et al., 2004).

Stage II consisted of 456 area segment units which were selected from the 64 PSUs for further examination. These units were selected with probabilities proportionate to the 1990 census counts of African-American households for the area segments (Heeringa et al., 2004). The selection of the households in this sample included all block groups in which the 1990 census reported less than 10 percent density for African-American households. Households in this area were termed Wide Area Screening Procedure (WASP) and households in this domain were sampled with an overall rate of f = 0.0001 or 1 in 10,000 (Heeringa et al., 2004).

*Stage III (*systematic random sample) used a trained interviewer to contact households identified in stage II and conducted a screening interview with a knowledgeable adult informant and documented vital demographic information (for example, age, gender, self identified race, etc.). The information was recorded, catalogued, and a subset of family/household

members eligible to participate in the NSAL was identified for the last stage of the sampling procedure.

Stage IV used an adaptation of a method developed by Kish (1949), which is a method that allows data collection teams to randomly select participants from a household. A respondent was chosen from each of the eligible households selected in stage III as a participant in the NSAL (Heeringa et al., 2004). The selection of the Afro-Caribbean and non-Latino white survey participant are addressed later in this section.

Out of the 456 NSAL Core area segment listings, 386 were chosen for further examination because they were considered high density segments. These households were screened using traditional methods and the WASP method. There were 386 core area segments screened using traditional methods, and the remaining 70 NSAL core area segments, which contained households with less than 10 percent African American, were screened using the WASP procedure. The WASP methodology requires the informant at each household to provide the required screening data for household members as well as identify houses in the core area segment that were occupied by African Americans. This sampling methodology was employed because of financial reasons as well as to see if the overlapping reports received by the interviewers would identify all African-American households in that core area segment. This sampling procedure was also validated in the NSBA. According to Heeringa et al., 2004 and Jackson, et

al., 2004, the NSAL white sample was a stratified, disproportionate sampling of non-Latino white adults in the US household population:

[The NSAL non-Latino white sample] is not an optimal descriptive analysis of the US white population. Instead the NSAL white sample was designed to be optimal for comparative descriptive and multivariate analyses in which residential, environmental and socioeconomic characteristics are controlled in the black white statistical contrasts (Heeringa et al., 2004, p 230). Due to financial constraints the white sample was decreased from 1800 to 1000 in January of 2002 midway through the two year period, and the interviews currently in process during the time period this decision was made were halted. Because of the nature of its equal probability national sampling of all US households, the NSAL core screening for eligible African-American and Afro-Caribbean households was projected to identify far more eligible white households than required to meet the sample size target. However, due to the reduction in sample size, a sub-sampling of qualified white adults at the screening stage was engaged to bring the sample of white interviewees in line with the objectives initially set up by the study designers (Heeringa et al., 2004). Heeringa et al. (2004) determine that the extent of the bias associated with prematurely ending the interviews is unknown; therefore, the accuracy of the response rate and the design-based sampling weight for the final NSAL is also unknown. However, the assumptions made in this model are currently being investigated.

Table 2	The Final NSAL Sample Distribution African American	Non Hispanic white
	Phase I	
Eligible households	13,640	5,145
Screened households	11,103	1,144
Selected to complete NSAL	3,312	1,006
	Phase II	
Eligible households	804	0
Selected to complete NSAL	258	0
Total	3,570	1,006

Adapted from NSAL

Data Sources and Collection

The National Survey of American Life: Coping with Stress in the 21st Century (NSAL) (Jackson, Torres, Caldwell, Neighbors et al., 2004) was conducted in 2001 by the Program of Research on Black Americans (PRBA). The PRBA is part of the Research Center for Group Dynamics, Institute for Social Research that is housed and maintained at the University of Michigan, and the NSAL is part of the Collaborative Psychiatric Epidemiology Surveys (CPES) data collection.

The CPES were initiated in acknowledgment of the need for all-inclusive epidemiological data regarding the distributions, correlates, and risk factors of mental disorders among the general population with special emphasis on minority groups and a primary focus on collecting data about the prevalence of mental disorders and their treatment patterns. Additionally, the CPES also gathered information about language use and ethnic disparities, support systems, discrimination, and assimilation, so that researchers could explore the relationship between the various disorders and social and cultural concerns.

The data was collected from a representative sample of the US adult population (Pennell, Bowers, Carr, Chardoul et al., 2004; Heeringa et al., 2004). According to Heeringa et al., these studies collectively provide the first national data set with sufficient power to investigate cultural and ethnic influences on mental disorders. There are three studies that comprise the CPES: the NSAL, NLAAS, and NCS-R (Heeringa et al., 2003). The NSAL contains significant over samples of respondents of African-American and Afro-Caribbean descent, and the National Latino and Asian American Study (NLAAS) contains significant over samples of respondents of Latino and Asian descent (Alegria, et al., 2004). The final study is the National Comorbidity Survey, Replication (NCS-R) (Kessler et al., 2004). The NSAL, the NLAAS, and the NCS-R were designed to be integrated and representative of the household population of adults aged 18 and older residing in the coterminous United States.

The NSAL project is supported by the National Institutes of Health and the National Institute of Mental Health, and receives supplemental support from the Office of Behavioral and Social Sciences Research. According to Jackson et al. (2004), "the NSAL is the largest, most in-depth investigation of serious mental disorders and mental health ever conducted on a national household sample" (p. 204). The NSAL includes multiple measures of mental disorders and mental health. According to Jackson, Neighbors, Torres, Martin et al. (2007):

> The National Survey of American Life (NSAL) is a study designed to explore racial and ethnic differences in mental disorders, psychological distress, and informal and formal service use from within the context of a variety of presumed risk and protective factors in the African-American

> and Afro-Caribbean populations of the United States as compared with White respondents living in the same communities (p. 2).

Adopting this dataset provided the researcher with a national sample that investigated the nature, severity, and impairment of mental disorders among a sample of non-Latino whites, blacks of immediate Caribbean descent, and African-Americans.

Instrument (WHO-CIDI, 1990)

The overarching instrument utilized by the NSAL is a scaled down version of the CIDI developed for the World Health Organization (WHO) by Kessler in 1999. The instrument consists of 276 diagnostic questions from the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10), and the Diagnostic Statistical Manual Fourth Edition (DSM-IV). According to the WHO (2004), the CIDI allows the investigator to measure the prevalence and severity of and establish the burden of mental disorders, to assess service use, the use of medications in treatment, and the consumers, both treated and untreated, and to identify the barriers to treatment.

According to Wittchen (1994), the CIDI ***validity*** findings showed variation when compared to diagnoses assigned by psychiatrists. In order to validate the instrument, a test retest ***reliability*** study was done using 85 patients, and the kappa/Yule Y coefficient of the CIDI was found to be well above .5 in general and .57 for depression. Wittchen (1994) found that the CIDI is very flexible and can be used for specific research questions because of its modular format. It is time efficient, objective, and consistent. The reliability coefficients are above the

Kappa value of .5 which in effect means that clinicians and non-clinicians now have a reliable tool to determine the frequencies of mental disorders in the population. The CIDI has gone through several transformations in order to increase its reliability. However, there are very few test-retest reliability studies in general population samples. There are a few problem areas in the CIDI, and the main problem is the phasing of some of the symptomology questions. The phasing has been addressed in the most current version of the CIDI, but there is the possibility that individual interpretation may vary from respondent to respondent.

Data Analyses

Initially, the analysis begins with a crosstabulation of depression by race and gender, looking at the effects of depression on each of the four subgroups (African-American men, African-American women, non-Latino white men, and non-Latino white women). Next, bivariate analyses are computed between depression and each of the predictor variables in the SDH model, which begins with the two socioeconomic & structural determinants, poverty index and education in the SDH model.

The independent variables are divided into three categories. The first category is a nominal measure with two subgroups, for instance gender which is either male or female and requires an independent t-test to test for significance. The second category of variables are nominal measures that have three or more subgroups, for instance employment, which has three subgroups, employed,

unemployed, or not in labor force; this type of variable requires an analysis of variance (ANOVA) (F test) to test for significance. Lastly, with ratio or numeric level data a Pearson coefficient is used to test for significant relationships. The next step is to eliminate multicorrelated variables. The variables that remain are used to build a regression model, the main purpose of which is to determine how much variation in the dependent variable can be explained by each category in the SDH model.

Data Transformations

There are a multitude of scales used in this study, and interpreting the scales is crucial if the reader is to understand the results. Steps were taken to insure that scales that had a skewed distribution were transformed into one that closely approximated the symmetrical form of a normal distribution. According to Tabachnick & Fidell (2001), data transformations are recommended as a remedy for outliers whenever the original distribution is severely skewed. Additionally, data transformations are usually applied so that the distribution more closely meets parametric assumptions of regression analysis. There are several ways to determine skewness, but the authors suggest "eyeballing" the histogram as an acceptable method (Tabachnick et al., 2001). There were several transformations used in this analysis, and the selection of the transformation depends upon the direction and severity of the skewness (Abu-Bader, 2006). Transformations were used to normalize the distribution of several scale measures used in the dataset.

The first step of the transformation process involves determining the direction of the tail because this determines if reflection is to be used. Reflection changes the direction of a negatively skewed distribution to a positively skewed one. Next, with a positive distribution in place, the severity of the skewness is determined. The square root (Sqrt) transformation is used when the histogram is moderately skewed, and the Logarithm (Lg10) is used when the distribution is severely skewed. The goal is to produce the skewness and Kurtosis values nearest to zero (Tabachnick et al., 2001). Once the preliminary analyses were completed, a regression model was developed that enabled the user to predict the level of depression in African-American males.

CHAPTER IV: BIVARIATE ANALYSIS

The focus of the following chapter is to investigate whether or not there is a difference among the four groups (African American males, African American females, non-Latino white males and non-Latino white females) and the level of depression based on the Center for Epidemiologic Studies Depression Scale (CES-D) score. The second part of the chapter tested for significant relationships between the dependent variable depression, and independent variables reported in the Social Determinants of Health (SDH) model (socioeconomic & structural determinants, community context, and individual level factors).

Analysis of Depression by Race and Gender

In this section a one way ANOVA was computed comparing the depression scores of National Survey of American Life (NSAL) study participants based on race and gender. Significant differences were found among the four groups. In order to understand the differences among the four groups, depression scores are divided into four categories: no depression, low depression, medium depression, and high depression. These four groups were determined by converting the CES-D into a summated scale with values ranging from 0 to 36. In order to determine the level of depression, we used the mean and standard deviation (SD) to determine cut off values. The mean score was 14 with a SD of 4.25. We determined the final cut off points by examining the normal distribution and established the following ranges for the categories: 0-9 was no

depression, 10-13 was low depression, 14-19 was medium depression, and 20-36 was high depression.

The analysis revealed that 11 percent of African-American males did not have any depression as opposed to only six percent of non-Latino white females. Of the participants with low depression, African-American males comprised 48 percent, African-American females showed a similar pattern of less severe depression than white participants. In the medium category, non-Latino white females comprised the largest group at 42 percent. Little difference existed among African-American females and non-Latino white males in the medium depression category (see Table 3).

Looking further at the results, it is interesting that non-Latino white women (15 percent) and non-Latino white men (12.5 percent) had higher percentages of high depression scores than African-American men and women at nine percent and 10 percent, respectively. Overall, of those with no depression, African-American men comprise the largest percentage, and of those African-American men who do have depression, the condition tends to be less severe. On the other hand, a larger percentage of non-Latino white women have depression, and the depression tends to be more severe than people in any of the other three groups. A one way ANOVA was computed comparing depression scores among the four gender/race groups to the level of depression. The analysis revealed a significant relationship at $F = 24.933$, and $P = .000$. In other

words, there is a significant relationship among the four gender/race groups as to the level of depression.

Table 3.

Depression by Race and Gender

	Depression Categories				
Gender/Race groups	**No dep.**	**Low Dep.**	**Med dep.**	**High dep.**	**Total percent**
AA Males	11.10 %	47.60%	32.40%	8.90%	100.00%
AA females	7.00%	45.40%	37.80%	9.80%	100.00%
nLw males	7.50%	43.20%	36.70%	12.50%	100.00%
nLw females	5.80%	36.50%	42.40%	15.30%	100.00%
F=24.9333	**Significance = .000**				

Additionally, a post hoc test revealed that there is a significant difference between African-American males (mean = 2.4 and SD = .80) and African-American females (mean = 2.5 and SD = .77) at p = .008. African-American males and non-Latino white males (mean = 2.5 and SD = .81) were significantly different at p = .000, as were the African-American males and non-Latino white females (mean = 2.7 and SD = .80) groups at p = .000. Furthermore, the post hoc test revealed that African-American females (mean = 2.5) were significantly different than non-Latino white females (mean = 2.7) p = .000. Post hoc test also reveal that non-Latino white males (mean = 2.5) were significantly different than non-Latino white females (mean = 2. 7) at p = .000. Thus all four race/gender groups were significantly different from one another as to the level of depression.

Bivariate Analysis

This section tests for significant relationships between the dependent variable (DV), depression, and each independent variable (IV) as listed in the Social Determinants of Health (SDH) model. This analysis identified all non-significant IV's that were eliminated from the final multivariate model.

The IV's are divided into three categories. The first category is a nominal measure with two subgroups, for instance gender which is either male or female requires an independent t-test to test for significance. The second category of variables are nominal measures that have three subgroups, for instance employment can either be employed, unemployed, or not in the labor force; this required an analysis of variance (ANOVA) (F test) to test for significance. Lastly, with ratio or numeric level data, a Pearson coefficient was calculated to test for significant relationships. However, in order to help the reader understand the relationship between the independent variables and depression, descriptive cross tabulations are reported on the independent variables that are found to be significantly related to depression. All of the analysis are reported according to the SDH model beginning with the socioeconomic and structural determinants. At the end of each section, there is a table that illustrates the significance test and the categorical data described in each section.

Socioeconomic & Structural Determinants

Two variables are grouped under socioeconomic and structural determinants, poverty index and education. In this section, crosstabulation is

performed with depression and the poverty index and depression and education. Moreover, because the **poverty index** and education are both ratio level data, Pearson correlation is reported. Even though there was a very weak negative association, the results were significant. The correlation coefficient (r) for the poverty index and depression is -.111 and the significance is .000. The r signifies that the poverty index figures prominently into the level of depression. Moreover, there is an inverse relationship between the poverty index and depression. A crosstabulation between the poverty index and depression revealed that nine percent of individuals who were 200 percent to 300 percent above poverty tended to have less severe depression than those who were below the poverty level. Twenty-one percent of the individuals below poverty had high levels of depression, and 51 percent of individuals that were 500 percent above poverty had less severe depression—the higher an individual is above the poverty level, the lower the depression scores.

A Pearson correlation was calculated examining the relationship between **education** and depression, whereas r = -.041 and p = .005. This statistic indicates that there is little correlation between education and depression; however, the p value indicates the relationship is significant to the .005 level. Additionally, there is an inverse relationship between education and depression, as the years of education increase the depression score decreases. Crosstabulation revealed that nine percent of those with 12 years of education have no depression as compared to eight percent of those with 0-11 years, 7.7

percent over 16 years of education, and 5.6 percent of those with 13-16 years of education.

Furthermore, those with 0-11 years of education increase depression scores from low 36.7 percent to medium 38 percent, while those with 12 or more years decrease in depression scores with 12 years leading the way with a decrease of approximately 10 percent from low depression scores 45 percent to high depression scores 34.4 percent. Additionally, those with 0-11 years of education also have the greatest proportion of individuals with high depression scores 16.6 percent, as compared to 11.7 percent with 12 years, 12 percent with 13-15 years, and only 8 percent of those with more than 16 years of education have high depression scores. Overall, people with less than 12 years of education tended to have more severe depression, and as people obtained higher levels of education the depression tended to be less severe.

Table 4 Bivariate Analysis of Depression and Predictor Variables in the SDH Model

Independent Variable		Percentage level of depression				Significance	
Socioeconomic & Structural determinants		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Poverty Index						r = -.111	.000
	Poverty	7.56%	34.17%	37.57%	20.70%		
	100%-200%	7.98%	37.98%	40.10%	13.94%		
	200%-300%	9.09%	43.55%	35.80%	11.56%		
	300%-500%	7.72%	48.18%	38.07%	6.03%		
	over 500%	7.03%	52.12%	33.09%	7.76%		
Education						r = -.041	.005
	0-11 years	8.42%	36.69%	38.25%	16.63%		
	12 years	9.31%	44.60%	34.37%	11.72%		
	13-15 years	5.64%	43.76%	38.97%	11.62%		
	16 or more	7.71%	45.70%	38.96%	7.62%		

Community Context

In this section, social support from family, friends, and church was explored along with social exclusionary variables, and neighborhood factors such as safety and participation in neighborhood activities. Bivariate analysis was used to analyze depression and each of the variables in the SDH model. Moreover, as before, a variety of statistical tests such as the Pearson correlation, independent t tests, and one way ANOVA's are calculated to determine the strength of the relationship as well as the significance.

Depression and social support was examined using three categories, frequency of contact, tangible support, and closeness to church, family, and friends. A one way ANOVA revealed that frequency of **contact with church** was not significant at F = .547 and p = .701 and is not used in the development of the final regression model. A one way ANOVA was also computed comparing the levels of **tangible support** received from the church to the level of depression. Tangible support from the church was divided into five categories: never needed help (mean 14.7 and SD = 4.3), never [received help] (mean 14.5 and SD = 4.2), not too often (mean= 15 and SD = 3.9), fairly often (mean=15 and SD = 4.5), and very often (mean = 14.8 and SD = 4.2). There was a significant difference found between the groups at p = .007 and F = 3.5. Post hoc test revealed a significant relationship at p = .004 between two of the categories, not too often and never. Furthermore, crosstabulation revealed that twelve percent of individuals who received tangible support from church very

often had no depression, and 51 percent of individuals who never received help had the highest amount of participants with low depression. An independent t test was computed comparing **closeness to church members** and the level of depression. The results show a non-significant relationship at t = .76 and the p = .45. Therefore, closeness to church is not used in the final multivariate analysis.

Depression and frequency of **contact with family members** was also examined and a one way ANOVA revealed F = 1.8 and p = .080; therefore, this relationship is not significant and is not used in the final regression model. A one way ANOVA revealed a relationship between depression score and **tangible support from family.** The responses were as follows: no family (mean = 14.9 and SD = 4.6), never needed help (mean = 14.6 and SD = 3.9), not too often (mean= 14.8 and SD = 4.5), fairly often (mean = 13.2 and SD = 4.4), very often (mean = 15 and SD = 4.0). The relationship was significant between all of the groups at F = 4.4 and p = .004. A post hoc test revealed significant relationships between individuals who received help often and those with no family, individuals who never needed help and those who needed help fairly often, and individuals who needed help very often and those who needed help fairly often. Additionally, crosstabulation between these two variables show that nine percent of individuals who did not receive help often from family members did not have any depression, and those who received help often tended to have higher levels of depression. For instance, 13 percent of these who received help

often had high depression as opposed to those who did not receive help from their family often.

Lastly, a one way ANOVA examining the relationship between those individuals having a **closeness to family members** and their levels of depression, revealed relationships among the following responses: not too close at all (mean = 15.1 and SD 3.9), not too close (mean = 15.4 and SD = 4.7), fairly close (mean = 15.4 and SD = 4.4), and very close (mean = 14.6 and SD = 4.2). The relationship between the two variables was significant at F = 13.2 and p = .000. The post hoc test revealed significant relationships between not too close and very close and fairly close and very close. Moreover, crosstabulation revealed that eight percent of individuals who were close to their family did not have any depression as opposed to the six percent who were not close. Additionally, individuals who were not too close to their families had more severe depression levels.

A one way ANOVA revealed that there is a relationship between **contact with friends** and depression. The responses were as follows: has no friends (mean= 14.6 and SD = 4.2), never (mean = 14.8 and SD = 4.8), hardly ever (mean = 15.9 and SD = 5.2), few times a year (mean = 13.8 and SD = 4.5), at least once a month (mean = 15.6 and SD = 3.6), a few times a month (mean = 14.9 and SD = 4.0), at least once a week (mean = 14.6 and SD = 4.6), and nearly every day (mean = 14.8 and SD = 3.8). A significant relationship between all of the groups at F = 5.1, p = .000. A post hoc test revealed a

significant relationship at p =.006 between individual groups as well. For instance, there was a significant relationship between those who hardly ever had contact and those who had contact a few times a year, at least once a week, and nearly every day. Lastly, there was a relationship between those who had contact with friends a few times a year and those who had contact at least once a month. A crosstabulation revealed that 11 percent of individuals who hardly ever had contact with friends were not depressed; however, these same individuals also had more severe depression. For instance, 15 percent of individuals who hardly ever had contact with friends had high depression scores compared to 11 percent who had frequent contact.

A one way ANOVA examining the relationship between **tangible support from friends** and depression revealed a significant difference between the groups: never needed help (mean = 12.9 and SD = 4.5), never received when needed (mean = 14.9 and SD = 4.4), not too often (mean = 14.9 and SD = 4.1), fairly often (mean = 15 and SD = 4.1), and very often (mean = 14.6 and SD = 4.5). The relationship was significant among all of the groups at F = 13.807 and p = .000. The post hoc test revealed significant relationships between the group who never needed help and these other groups: those who never received help, those who did not receive help too often, those who received help fairly often, and those who received help very often. Crosstabulation revealed that those who received tangible support from friends often tended to have more severe depression. An independent t test revealed a

significant relationship between individuals who were **close to their friends** and depression at t = 2.7 and p = .006. Crosstabulation revealed individuals who were not too close to their friends had more severe depression as compared to those individuals who were close to their friends.

A Pearson correlation was calculated examining the relationship between **emotional support from family** and depression. The results show little or no correlation and was found non-significant at r = -.003 and p = .836; therefore, this variable is not used in the final multivariate model. A Pearson correlation was calculated examining the relationship between **negative interactions with family** and depression. A negative weak correlation that was significant was found at r = -.167 and p = .000. Furthermore, crosstabulation revealed that 61 percent of those who had negative interactions frequently with their families tended to have more severe depression as opposed to the 47 percent who did not have many negative interactions with their family members.

Depression and social exclusion was also measured by investigating membership in various African-American groups and examining several scales measuring racism and discrimination. A Pearson correlation between **major experiences of discrimination** and depression revealed a very weak correlation that was significant at r = .082 and p = .000. Moreover, crosstabulation revealed that 45 percent of individuals who did not experience major discrimination had low depression as opposed to the 36 percent who had experienced major discrimination. Additionally, 14 percent of those who

experienced major depression had more severe depression as opposed to the 11 percent who did not experience major discrimination. The results indicate that individuals who have less encounters with discrimination have less severe levels of depression.

A Pearson correlation was calculated examining the relationship between **everyday discrimination** and depression. A weak negative correlation that was significant was found at $r = -.199$ and $p = .000$. In other words, people who experienced everyday discrimination more frequently had higher levels of depression. Additionally, crosstabulation revealed that eleven percent of survey participants who experienced everyday discrimination a few times a year did not have depression. Moreover, 62 percent of those who experienced discrimination daily had more severe levels of depression than the individuals who had less frequent discrimination experiences. It appears that individuals who experience depression frequently tend to have more severe depression.

Internalized racism and the level of depression were investigated. Internalized racism was measured by six items inquiring about how Blacks felt about each other, items inquired about whether blacks are lazy, intelligent, hardworking, proud of themselves, and violent. A Pearson correlation revealed a very weak negative non-significant relationship between internalized racism and depression at $r = -.028$ and $p = .056$. However, it has been retained in the study because the significance value was close enough to significant and current

literature indicates that internalized racism influences the level of depression. Therefore, this variable was left in for the final multivariate analysis.

How well African Americans **cope with discrimination** and the level of depression was also investigated. A Pearson correlation revealed a weak negative significant relationship at r = -.082 and p = .000. Individuals who did not cope well with discrimination tended to have higher levels of depression. Furthermore, crosstabulation revealed that there was not much difference in the percentage of individuals without depression who coped with discrimination and those who did not cope well, seven percent and eight percent respectively. Results also show that 17 percent of individuals who cope well with discrimination have higher levels of severe depression than the eight percent who do not cope well with discrimination. Overall, individuals who do not tolerate discriminatory practices tend to have less severe depression than those who try to cope with discriminatory practices.

The level of depression and **contact with neighbors** was investigated. A one way ANOVA was computed, and the results revealed that there difference: never (mean = 15.1 and SD = 4.4), few times a year (mean = 14.6 and SD = 3.6), at least once a month (mean = 14.2 and SD = 3.8), a few times a month (mean = 14.8 and SD 4.3), at least once a week (mean = 14.9 and SD = 4.3), and nearly every day (mean = 14.5 and SD = 4.4). The relationship was significant at F = 3.794 and p = .002. A post hoc test revealed significant relationships between those who never had contact and these two groups: those

with contact at least once a month and those who have contact nearly every day. Crosstabulation revealed that nine percent of those who had contact often did not have depression compared to the seven percent who rarely had contact; moreover, there was no other discernable difference between the groups.

Neighborhood safety and the level of depression were also examined using a Pearson correlation. A weak but significant relationship was found at r = .12 and p = .000. In other words, the safer the neighborhood the lower the level of depression. Crosstabulation revealed that 46 percent of individuals who felt safe in their neighborhood had low depression scores as opposed to the 39 percent who did not feel safe. In addition, fifty-three percent of individuals who felt unsafe in their neighborhood had more severe depression scores as opposed to 46 percent of individuals who did not feel safe. Fifteen percent of individuals who did not feel safe had high levels of depression compared to nine percent of individuals who felt safe. Overall, neighborhood safety is an important factor in examining depression. The safer one feels at home the less depression experienced. Lastly, **neighborhood participation** was also examined, and the results show that this variable was not significant; therefore, it was not included in the final multivariate model.

Table 5 Bivariate Analysis of Depression and Community Context

Independent Variable		Percentage level of depression				Significance	
Community Context		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Social support freq. of ct w/church						**F = .55**	**.701**
	Often	8.41%	43.94%	35.47%	12.19%		
	Not too often	7.40%	42.60%	38.09%	11.91%		
	Never	7.68%	42.44%	38.54%	11.34%		
tang. Supp. church						F = 3.5	.007
	Often	10.11%	38.96%	37.75%	13.18%		
	Not too often	7.23%	41.32%	38.96%	12.49%		
	Never	6.57%	48.76%	34.92%	9.75%		
Close to church						t = .76	.446
	not too close	6.7%	45.8%	37.1%	10.4%		
	close	8.3%	43%	36.1%	12.6%		
Freq. of ct w/family						F = 1.9	.080
	Often	8.41%	43.94%	35.47%	12.19%		
	Not too often	7.40%	42.60%	38.09%	11.91%		
	Never	7.68%	42.44%	38.54%	11.34%		
Tang. Sup. f/fam						F = 9.4	.000
	Often	7.26%	41.25%	38.33%	13.17%		
	Not too often	7.19%	45.34%	38.53%	8.93%		
	Never	11.61%	45.47%	30.88%	12.04%		
Close to Family						t = 2.1	.037
	not too close	5.6%	42.1%	38.4%	13.9%		
	close	8.1%	43%	37.3%	11.7%		

Table 5 cont. Bivariate Analysis of Depression and Community Context

Table 5 cont. Independent Variable		Percentage level of depression				Significance	
Community Context		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Social Support							
Freq. ct w/friends						F = 5.1	.000
	Often	8.06%	43.84%	37.13%	10.97%		
	Not too often	6.07%	45.23%	36.92%	11.79%		
	Never	8.50%	37.78%	38.17%	15.56%		
Tang. Supp/friends						F = 13.8	.000
	Often	8.21%	41.63%	37.74%	12.42%		
	Not too often	6.06%	45.08%	38.47%	10.39%		
	Never	10.07%	43.60%	33.77%	12.56%		
Closeness to friends						t = 2.7	.006
	close	7.9%	43.3%	37%	11.8%		
	not too close	7.6%	40.4%	39.3%	12.7%		
Rec's emotional suppt. f/ fam						*r = -.003*	***.836***
	Often	7.97%	43.08%	37.32%	11.62%		
	Rarely	7.18%	42.75%	36.95%	13.13%		
Neg. interact. w/fam						r = -.155	.000
	Often	8.43%	30.06%	39.04%	22.47%		
	Rarely	7.79%	45.32%	36.96%	9.94%		
Social Exclusion							
Maj. Exp./Discrim						r = .056	.000
	No	7.93%	44.59%	36.10%	11.39%		
	Yes	7.71%	36.31%	42.35%	13.63%		

Independent Variable		Percentage level of depression				Significance	
Community Context		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Everyday Disc.						r = -.2	.000
	almost everyday	8.25%	31.04%	39.29%	21.41%		
	at least once a week	4.99%	46.51%	37.96%	10.54%		
	a few times a month	7.43%	43.42%	39.40%	9.75%		
	a few times a year	11.05%	49.12%	32.55%	7.28%		
contact w/neighbors						F = 2.3	.103
	Freq. contact	9.70%	40.30%	37.58%	12.42%		
	Less freq. Ct	7.43%	44.93%	37.39%	10.25%		
	No contact	7.88%	43.02%	37.27%	11.82%		
Neighborhood Safety						r = .15	.000
	Safe	8.%	46%	36.5%	9.5%		
	Unsafe	7.8%	39.2%	38.1%	14.9%		
Neighborhood participation						t = 1.209	**.227**
	No	7.94%	42.80%	37.53%	11.72%		
	Yes	7.33%	44.63%	35.50%	12.54%		

Individual Factors-Sociodemographics

An independent t test comparing the mean scores of African-Americans and non-Latino whites found a significant difference between the means of the two groups: t = 6.1 and p = .000. An analysis of **race** and depression revealed the proportion of African Americans with no depression was at nine percent whereas non-Latino whites without depression was at six percent, a difference of three percent. There were 45 percent of African Americans with low depression as compared to 40 percent non-Latino whites with low depression. Worth noting

is the fact that African Americans had a significant drop from low depression 45 percent to medium depression 35 percent a net decrease of 10 percent, whereas the non-Latino white participants remained constant at approximately 40 percent in both low and medium categories. Lastly, 13 percent of non-Latino whites had high depression as compared to 11 percent African Americans.

A Pearson correlation was computed between **age** and depression, and the results show a weak negative but significant relationship at $r = -.135$ and $p = .000$. In other words, an inverse relationship exists because as age increases the level of depression decreases. Crosstabulation showed that individuals over 65 years of age had the highest number without depression. Looking at the participants with depression based on low, medium, and high scores reveal the following results. The proportion of participants over 65 years of age with low depression scores was 51 percent, followed by participants between 46 and 65 at 47 percent, those between 26 and 45 at 41 percent, and lastly, participants between 18-25 comprised 35 percent of those with low scores.

This pattern indicates that the older the study participant the lower the depression score. In addition, 42 percent of the participants between the ages of 18 and 45 had medium depression scores as compared to only 30 percent of those over 46 years of age. Lastly, only nine percent of those over 65 had high depression scores as compared to 12 percent between 46 and 65, 11 percent between 26 and 45, and 16 percent between 18 and 25. The largest decrease in depression scores from low to medium occurred for those over 65; their scores

went from 51 percent to 30 percent. This pattern reinforces the assumption that depression scores decrease as individuals get older.

An independent t test was calculated comparing the mean depression score and **gender**; the results show a significant relationship at t = 6.8 and p = .000. An examination revealed the proportion of men with no depression was higher than women without depression 9.3 percent to 6.7 percent respectively. There were a greater percentage of men (47 %) with low depression as compared to women (40.3 %) with low depression scores. Next, men with medium depression scores were 34.7 percent, and women faired higher at 39.2 percent. Lastly, a larger proportion of women at 13.7 percent as compared to men at 9.3 percent had high levels of depression. Overall, men had lower depression scores than women, which were especially evident in the percentage decrease from 46.7 percent of men in the low depression category to 34.7 of men in the medium depression category, while women remained constant at 40.3 percent in the low depression category to 40.3 percent at medium depression category.

An independent t test was computed comparing **work status** and depression. The results show a significant relationship at t = 2.1 and p = .038. When examining depression and work status, there was not a noticeable difference in the percentage of participants with no depression among those who were employed and those who were unemployed, each at approximately eight percent. Fourteen percent of those who were unemployed had severe

depression as compared to 11 percent of those who were employed. Overall not much difference existed in the depression score of individuals who were employed and unemployed.

A Pearson correlation was calculated examining the relationship between depression and the **household size,** and the results revealed a weak correlation but significant relationship r = .058 and p = .000. Of the respondents with a one person household 11 percent had no depression as compared to a two person household which had 9 percent at no depression. Most noticeable is the group with four or more people in the household which had four percent with no depression. Moreover, those with one and two person households had 45 percent low depression as compared to those with more than two which had 40 percent. Families with three or more residents had higher percentages of medium and high depression. Most noticeable are households with three members who had 13 percent with high depression. It appears that the larger the family the higher the depression scores in the medium and high categories.

A Pearson correlation was calculated examining the relationship between depression and **region of the country**, and the results show a significant relationship at t = 2.2 and p = .000. The country was divided by South and other because the majority of African Americans reside in the South. The results show that only seven percent of the respondents who resided in the South did not have depression as opposed to nine percent of those who resided elsewhere. Overall, all respondents had similar low depression scores (43 percent) and

Table 6 Bivariate Analysis of Depression and Individual Sociodemographics

Independent Variable		Percentage level of depression				Significance	
Individual Level Factors sociodemographics		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Race						t = 6.099	0.000
	AA	9.08%	45.13%	34.83%	10.96%		
	nLw	6.30%	40.26%	40.51%	12.93%		
Age						r = -.135	0.000
	18-25	7.47%	34.54%	42.14%	15.85%		
	26-45	5.95%	41.35%	42.10%	10.60%		
	46-64	9.82%	46.74%	30.92%	12.53%		
	65 and older	10.19%	50.80%	29.78%	9.24%		
Gender						t = 6.810	0.000
	Male	9.35%	46.69%	34.66%	9.30%		
	Female	6.74%	40.27%	39.24%	13.74%		
Marital status						t = 2.197	0.028
	married	7.03%	45.94%	36.69%	10.34%		
	not married	8.62%	40.54%	37.77%	13.07%		
Work Status						t = 2.080	0.038
	employed	7.79%	43.61%	37.95%	10.64%		
	unemployed	8.15%	41.62%	35.83%	14.40%		
Household size						r = .058	0.000
	one	10.60%	45.34%	32.84%	11.21%		
	two	8.77%	45.24%	34.96%	11.03%		
	three	6.61%	39.42%	40.99%	12.99%		
	four or more	3.91%	40.23%	44.14%	11.72%		
Reg. of Country						t = -2.218	0.027
	South	6.89%	43.26%	36.76%	13.09%		
	other	9.11%	42.76%	37.90%	10.23%		

medium (37 percent-38 percent) depression scores; however, those who reside in the South had much higher high depression scores (13 percent) as opposed to those residing elsewhere (10 percent). **Marital status** proved non-significant; however, individuals who were married had less severe depression than those who were not married.

Individual factors-Health Behavioral

An independent t test comparing the mean depression scores of respondents with a **usual source of care** and a significant relationship was revealed at t = 6.0 and p = .000. Nine percent of individuals with a usual source of care had no depression as opposed to five percent respondents without a usual source of care. A higher percentage of those with low depression scores had a usual source of care (45 %) as opposed to those without a usual source of care (35 %). Those with a usual source of care had lower medium depression scores (36 %) as compared to those with no usual source of care at (47 %). Overall, those participants with a usual source of care had less severe depression.

An independent t test comparing the mean depression scores of those with an **addiction** found a significant relationship at t = -6.9 and p = .000. There is an inverse relationship between addictions and the level of depression. Fifty-seven percent of individuals who have an addiction to drugs and/or alcohol had medium to high levels of depression. In addition, eight percent of individuals who were not addicted had no depression, and 48 percent of the same group of

participants had low depression. An examination of **diet and exercise** proved non-significant and was not used in the regression model.

A one way ANOVA was computed comparing the level of depression to the **physical health rating (PHR)** and a relationship was revealed: poor PHR (mean = 16.7 and SD = 4.7), fair PHR (mean = 15.7 and SD5.1), good PHR (mean = 15.1 and SD = 3.9), very good PHR (mean = 14.3 and SD = 4.0), and excellent PHR (mean = 14.2 and SD = 4.3). A significant relationship was found at F = 31.9 and p = .000. A post hoc test revealed significant relationships between poor PHR and these other groups: good PHR, very good PHR, and excellent PHR. In addition significant relationships were found between fair PHR and these other groups: good PHR, very good PHR, and excellent PHR. Furthermore, significant relationships were found between good PHR and both very good PHR and excellent PHR. Lastly a significant relationship was found between very good PHR and excellent PHR. Moreover, crosstabulation revealed that approximately 23 percent of individuals with a poor PHR had more severe levels of depression than those with good (10.6%) and very good (8.3%). Worth noting is that 50 percent of individuals with very good PHR had very low depression scores as compared to those with good PHR (39%) and poor PHR (32%).

A Pearson correlation was calculated examining the relationship between **physical exercise** and depression, and a strong negative correlation was found at r = -.062 and p = .000. Basically, this relationship means that the more

physical exercise one does the lower the level of depression. This is a scale variable ranging from 3 to 12. Therefore, the higher the score on the scale the lower the depression score. Crosstabulation revealed that 19 percent of individuals who rarely exercised had more severe depression as compared to 12.7 percent who exercised sometimes, and 9.5 percent of those who regularly exercised.

Table 7 **Bivariate Analysis of Depression and Individual Level-Health Behavioral**

Independent Variable		Percentage level of depression				Significance	
Individual Level Factors Health Behavior		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Usual source of care						t = 5.992	.000
	No	4.55%	35.07%	46.59%	13.79%		
	Yes	8.50%	44.49%	35.55%	11.46%		
Addicted						t = -6.873	.000
	No	8.20%	44.71%	36.67%	10.42%		
	Yes	6.47%	36.10%	39.87%	17.56%		
Physical health						F = 32.194	.000
	Poor	8.57%	31.69%	36.94%	22.81%		
	Good	7.70%	45.81%	37.36%	9.13%		
Physical Exercise						r = -.062	.000
	rarely	7%	42.8%	31%	19.2%		
	sometimes	7.8%	39%	40.5%	12.7%		
	regularly	8.1%	46.3%	36.1%	9.5%%		

Individual factors-Psychosocial

A Pearson correlation was calculated examining the relationship between **Self-Esteem** and depression. A weak negative significant relationship was revealed at r = -.183 and p = .000. In other words, the lower the self-esteem, the higher the level of depression. Of the respondents who had high self-esteem as evidenced by the Rosenberg Self-Esteem Scale , 8 percent had no depression, 50 percent had low depression, 34 percent had medium depression, and nine

percent had high depression. Those with low self-esteem scored seven percent, 25 percent, 42 percent, and 26 percent respectively.

A Pearson correlation was calculated for the relationship between a subjects **hopelessness** and depression score. A significant relationship was found with a weak negative correlation at r = -.101 and p = .000. Surprisingly, 9.7 percent of people who were hopeless had no depression, as opposed to seven percent of the people who were hopeful. On the other end of the continuum, 21 percent of people who were hopeless had high depression, and nine percent of people who were hopeful had high depression.

Lastly, the **Mastery Scale** showed similar results to the self-esteem scale. The Pearson correlation revealed weak correlation but significant relationship with an r = .215 and p = .000. There is an inverse relationship between the level of depression and mastery. People who were high in mastery tended to have less depression. Crosstabulation shows that 10 percent of the participants who were high in mastery had no depression, whereas seven percent of those who scored low on the mastery scale had no depression. On the other end of the continuum, 14 percent of those who scored low on the Mastery Scale had high levels of depression, and only six percent of those who scored high on the Mastery scale had high levels of depression.

Overall, it appears that individuals who are satisfied with life and have good physical and mental health ratings have higher levels of no depression and low depression, and in the medium depression category the results show that the

individuals who are happy and have good ratings have lower levels of medium depression than those who have poor ratings. In the high depression categories, those with poor ratings have more than double the amount of depression as those who are satisfied and happy. The three scales also indicate that people who have confidence and feel good about themselves and their future have lower levels of depression as opposed to those with low self-esteem, high levels of hopelessness, and low levels of mastery.

A one way ANOVA was computed comparing the depression scores of subjects who self-assessed their **mental health ratings (MHR).** The results revealed a relationship between depression and the overall MHR. The categories are as follows: poor MHR (mean = 17.7 and SD = 4.9), fair MHR (mean = 16.6 and SD = 5.6), good MHR (mean = 14.9 and SD = 4.3), very good MHR (mean = 14.6 and SD = 3.9), and excellent MHR (mean = 14.8 and SD = 4.3). The relationship is significant at F = 36 and p = .000. The post hoc test revealed significant relationships between poor mental health and these other groups: good MH, very good MH, and excellent MH. Additionally, there was a significant relationship between fair MH and these other categories: good MH, very good MH, and excellent MH. Lastly, there was a significant relationship between good MH and excellent MH. Crosstabulation revealed that approximately nine percent of individuals with a poor mental health rating did not have depression, which is surprisingly more than the eight percent with good mental health ratings. A further examination in the low depression category revealed this category

contained 45 percent of respondents who self proclaimed to have a good MHR and 23 percent of those with a poor MHR. In the high depression category, 26 percent those with a poor MHR had high depression scores as opposed to only 10 percent with good MHR.

A one way ANOVA revealed a significant relationship between depression and individuals who were **satisfied with life** in the following groups: very dissatisfied (mean = 19.1 and SD 6.8), somewhat dissatisfied (mean = 15.9 and SD = 4.32), somewhat satisfied (mean = 14.8 and SD = 3.9), and very satisfied (mean = 14.8 and SD = 4.3). A significant relationship was found at F = 62 and p = .000. The post hoc test revealed significant relationships between all of the groups listed above. Moreover, crosstabulation revealed eight percent of individuals who were very satisfied with life had no depression, and approximately 63 percent of individuals who were very dissatisfied with life had more severe levels of depression.

A one way ANOVA revealed a significant relationship between depression scores and **spirituality** in the following categories: not spiritual at all (mean = 13.2 and SD = 3.8), not too spiritual (mean = 15.3 and SD = 4.9), fairly spiritual (mean = 14.8 and SD = 4.21), and very spiritual (mean = 14.8 and SD = 4.2). A significant relationship was found at F = 10 and p = .000. There was also a significant relationship between those who were not spiritual at all and those in the following groups: not too spiritual, fairly spiritual, and very spiritual. Crosstabulation showed eight percent of individuals who were spiritual had no

depression compared to seven percent of those who were not spiritual. Overall there does not appear to be much of a difference in the level of depression of individuals who were spiritual and those who were not spiritual.

Depression and stress at work was also examined using three variables, work place discrimination, job satisfaction, and worry about losing job. A one way ANOVA revealed a significant relationship between depression scores and **job satisfaction**, F = 4 and p= .000. A post hoc test revealed no significant relationship between any of the subcategories. Interestingly, crosstabulation revealed fifteen percent of individuals who were very dissatisfied with their job had no depression as opposed to eight percent who were very satisfied who had no depression. A further investigation shows that 56 percent of those who were very dissatisfied had higher levels of medium and high depression than the 47 percent of individuals who were very satisfied with their jobs, who had medium to high levels of depression.

In order to obtain a more accurate estimate of the relationship between **worry about losing job** and depression, the variable was redistributed as three separate variables: worry a lot about losing job, worry somewhat about losing job, and do not worry at all about losing job. An independent t test revealed a non-significant relationship between worry a lot about losing job and depression; therefore, this variable was dropped from the analysis. The next independent t test was calculated to determine the relationship between the category somewhat worry about losing job and depression, and a significant negative

relationship was found at t = -2.73 and p = .006. Lastly, the relationship between individuals who do not worry at all about losing their job and depression was examined. A positive significant relationship was found at t = 4.2 and p = .000. Overall, as people tend to worry more about losing their jobs, the level of depression increases. Crosstabulation does not appear to make any discernable differences in each of the groups.

Relentless stress was also examined using two scales, a distress scale and a chronic stress scale. A Pearson correlation was calculated for the relationship between depression and **distress,** and it revealed a significant relationship at r = .46 and p = .000. In other words, there is a positive relationship between the level of distress and the level of depression, as distress increases the level of depression increases as well. Moreover, crosstabulation shows an interesting finding. Nine percent of individuals in distress did not have depression compared to four percent who were not in distress who did not have depression. This changes when we examine more severe depression. Fifty-four percent of individuals in distress had severe depression compared to 10 percent of individuals not in distress. This result is worth noting; distress is the most significant predictor thus far and is in the regression model.

A Pearson correlation was calculated for the relationship between depression and chronic stress, and it revealed a negative weak correlation but significant relationship at r = -.245 and p = .000. Basically, as chronic stress increases so does the level of depression. Moreover, eight percent of individuals

who were not experiencing **chronic stress** did not have any depression. However, 31 percent of individuals who had chronic stress had a high level of depression as opposed to the ten percent who were not experiencing chronic stress.

A one way ANOVA revealed a significant relationship between depression and **worrying about paying one's bills** at t = -10.3 and p = .000. In other words, 62 percent of individuals who worry about paying bills have severe depression as compared to 46 percent of those who do not worry. Overall, distress, chronic stress, and financial worry were all significant indicators of the level of depression. Surprisingly, the results show that **work place discrimination** was non-significant and was dropped from the analysis.

Table 8. Bivariate Analysis of Depression and Individual Psychosocial

Independent Variable		Percentage level of depression				Significance	
Individual Level Factors Psychosocial		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Hopelessness						r = -.10	.000
	Hopeless	9.66%	35.87%	33.09%	21.38%		
	Hopeful	7.34%	45.22%	38.54%	8.90%		
Mastery						r = -.22	.000
	Low	7.30%	41%	38.20%	13.50%		
	High	9.80%	49.90%	34.20%	6.10%		
mental Health						F = 35.7	.000
	Poor	9.00%	23.10%	42.40%	25.50%		
	Good	7.80%	45.30%	36.70%	10.20%		

Independent Variable		Percentage level of depression				Significance	
Individual Level Factors Psychosocial		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
Satisfied w/life						F = 61.7	.000
	not satisfied	5.80%	31.20%	38%	25.00%		
	satisfied	8.20%	44.70%	37.20%	9.90%		
Spirituality						F = 9.9	.000
	not spiritual	7.20%	45.30%	36.00%	11.50%		
	spiritual	8.00%	42.70%	37.40%	11.90%		
Stress at Work							
wkpl. Discrim						t = .046	**.965**
	No	9.50%	46.08%	35.52%	8.90%		
	Yes	11.11%	44.44%	34.64%	9.80%		
Job satisfaction						F = 3.9	.008
	Not too satisfied	8.20%	40.30%	37.90%	13.50%		
	Satisfied	7.60%	45.20%	36.80%	10.40%		
Distress						r = -.324	.000
	All the time	7.10%	17.30%	35%	40.60%		
	sometimes	4.76%	25.50%	48.10%	21.70%		
	very little	8.26%	46.50%	36.30%	8.90%		
Chronic Stress						r = -.245	.000
	No	8.00%	44.50%	37.10%	10.50%		
	Yes	6.20%	22.10%	40.40%	31.30%		
Worry about paying bills						t = -10.3	.000
	worry a lot						
		8.30%	45.50%	36.90%	9.30%		
	not too worried	6.10%	32.70%	38.80%	22.40%		

Individual factors-Biological

A Pearson correlation was calculated for the relationship between the number of physical comorbidities and the level of depression, and the results show a weak correlation but significant relationship at r = .062 and p = .000. In other words, as comorbidities increased so did the level of depression. Crosstabulation show eight percent of individuals with no **physical comorbidity** and low comorbidity (1 to 2 illnesses) did not have any depression, and 50 percent of individuals with high comorbidity (5 to 6 illnesses) had low depression. Surprisingly, 22 percent of individuals who had medium comorbidity (3 to 4 illnesses) also had high levels of depression, but those with high comorbidity had more severe depression than the remaining participants.

Studies have shown that there is a correlation between **weight** and depression. In this study weight was separated into three categories: overweight, satisfied with weight, and underweight. An independent t test revealed a significant relationship between the level of depression and being overweight at t = -2.9 and p = .005. In other words, individuals who considered themselves overweight had higher levels of depression than those who were satisfied with their weight. Additionally, an independent t test revealed that there was a relationship between depression and being underweight at t = -2.8 and p = .005; therefore, there is a relationship between being underweight and the level of depression experienced. Individuals who considered themselves underweight had higher levels of depression than those who were satisfied with

their weight. Lastly, an independent t test revealed a significant relationship between individuals who were satisfied with their weight and the level of depression at t = 4 and p = .000 as well. Overall, it appears that there is a significant relationship between self-assessment of weight and the level of depression. Basically, weight satisfaction yielded less depression.

Food insufficiency proved to have a significant relationship with the level of depression. Food insufficiency was divided into three separate variables: enough to eat, sometimes not enough to eat, and oftentimes not enough to eat. This separation was done to illustrate the difference in the amount of food available to the study participants. An independent t test revealed a relationship between food insufficiency and depression, and a negative significant relationship was found at t = 7.3 and p = .000. People who had enough to eat had lower levels of depression than those who did not have enough to eat. Crosstabulation showed twenty three percent of individuals who did not have enough to eat had severe depression as opposed to 10 percent of individuals with enough to eat who had severe depression.

The next predictor variable examined was **sometimes not enough to eat** and the level of depression. An independent t test comparing individuals who sometimes did not have enough to eat with those who did found a t = -7.6 and p = .000. Overall, it appears that the amount of food a person has to eat affects the level of depression, and in this study, the majority of the survey participants had enough to eat. Lastly, an independent t test comparing those

who **oftentimes did not have enough to eat** and the level of depression found a negative significant relationship at t = -.282 and p = .023. In other words, individuals with a sufficient amount of food available have lower levels of depression than those who do not.

The results of the bivariate analysis indicate that there is a relationship between the SDH variables and depression. Overall, when examining the relationship of depression with each of the socioeconomic & structural determinants, community context, and individual level factors, some individual variables stand out. It appears that people over the age of 65 had the highest percentage of individuals with no depression, and individuals between the ages of 26-45 had the highest number of people with depression approximately 94 percent. Moreover, it appears that nine percent of men had no depression as compared to seven percent of women, and lastly, nine percent of African Americans had no depression as opposed to six percent of non-Latino whites. Moreover, six variables were dropped from the final analysis because they proved non- significant: frequency of contact with family members, membership in African-American advocacy groups, neighborhood participation, marital status, diet and exercise, and workplace discrimination. The variable, closeness to racial group, were dropped from the final analysis because of the large amount of missing responses. Moreover, the final results of the bivariate analysis dictate which factors have significant relationships and are not in the final multivariate model.

Table 9 Bivariate Analysis of Depression and Individual Biological

Independent Variable		Percentage level of depression				Significance	
Individual Level Factors Biological		No dep.	Low Dep.	Med dep.	High dep.	Type of test	Level of significance
variable	subgroup	%	%	%	%		
# Comorbidities						r = .062	.000
	0	7.98%	43.42%	39.03%	9.58%		
	1-2	8.27%	43.33%	35.01%	13.39%		
	3-4	4.33%	36.22%	37.80%	21.65%		
	5 or more	0.00%	50.00%	37.50%	12.50%		
Weight							
Overweight						t = -2.876	.005
	No	8.36%	43.72%	37.01%	10.91%		
	Yes	7.06%	41.82%	37.69%	13.43%		
Underweight						t = -2.800	.005
	No	7.93%	43.60%	36.92%	11.55%		
	yes	7.12%	33.33%	43.07%	16.48%		
Satisfied with weight						t = 4.146	.000
	No	7.15%	40.27%	38.91%	13.67%		
	Yes	8.41%	45.13%	36.06%	10.40%		
Food Insufficiency							
enough to eat						t = 7.297	0.000
	No	8.55%	27.63%	41.15%	22.66%		
	Yes	7.79%	44.86%	36.82%	10.53%		
Sometimes not enough to eat						t =-7.604	0.000
	No	8.00%	44.14%	37.25%	10.61%		
	Yes	6.21%	29.38%	37.57%	26.84%		
Oftentimes not enough to eat						t = -2.282	0.023
	No	7.72%	43.69%	36.84%	11.76%		
	Yes	14.78%	16.52%	54.78%	13.91%		

Overall, the analyses performed in this section helped to determine which predictor variables were used in building a multivariate model. The predictor variables that were eliminated as a result of examining their relationship with depression using independent t test, one way ANOVAs, and Pearson correlations were not used in the final model. These variables were dropped from any further analysis. The next step of the process involved in putting the selected predictor variables into a multiple regression model. This process followed the same format as the previous section, using the Structural Determinants of Health model as a format. The significant selected variables chosen for the final model

enable the user to predict with some certainty, the level of depression in African-American males.

CHAPTER V: REGRESSION ANALYSIS

Building the regression model

The Structural Determinants of Health (SDH) model has been the conceptual framework for the study, and in building the regression model, the SDH framework was used as well. The socioeconomic and structural determinants were entered first, then the community context factors, and lastly the individual level factors. Most of the preliminary analysis up until this point has been conducted to determine which variables might be significant predictors of individual's level of depression, and thus, can be used in the final regression model. Human behavior is very complex and is influenced by many factors (Stevens, 2009) that are likely correlated with each other. Thus, it is unrealistic to assume that the variables that are related to depression are completely independent of each other. Nevertheless, because regression models assume that independent variables are independent of each other, it is imperative to identify the predictors that best predict the level of depression while being only slightly or at all correlated with each other.

Thus, first we identified the predictor variables that are moderately (Pearson r ranges between 0.3 to less than 0.7) or highly correlated (Pearson r ranges between .7 and 1) with each other. Highly correlated variables produce

multicollinearity which makes it difficult to determine the effect of a particular predictor variable, if the effect of the predictors is confounded. In addition, multicollinearity increases the variance of the regression coefficients, and it may cause the regression equation to become unstable (Stevens, 2009).

The significantly correlated predictor variables were identified in the correlation matrix, and any of the variables that have a correlation of .3 or higher were investigated further. The goal was that the best predictors remain in the model, and the confounding predictors were eliminated from the final model.

For the regression model, there are three groups of predictor variables that are analyzed using regression modeling, identified in the previous sections using the Structural Determinants of Health (SDH) model format. The first part of the SDH model is the socioeconomic and structural determinants, which include the predictor variables, poverty index and education.

Socioeconomic & Structural Determinants

The first group of variables includes the socioeconomic and structural determinants which consist of two predictor variables: poverty index and education. The poverty index is the amount of household income divided by the poverty threshold as derived from the 2001 census data (Rodebaugh, 2009), and education is defined as the number of years completed in school. These variables that have a moderate correlation of r=.388. In an effort to determine if we can retain both variables in the model as independent predictors of the depression

score, multicollinearity was assessed. The regression equation for predicting the depression score using the predictor is in the following table (table 10).

Table 10 **Model 1 Coefficients-socioeconomic & structural determinants**

	Unstandardized Coefficient		Standardized. Coefficient			Collinearity statistic	
	B	Std error	Beta	t	level of sig	Tollarance	VIF
(Constant)	15.245	0.258		59.120	.000		
Poverty Index	**-0.153**	**0.021**	**-0.102**	**-7.207**	**.000**	**0.849**	**1.178**
educ	0.004	0.021	0.003	0.196	**.844**	0.849	1.178

R Square = 1.0% **F = 29.971** **Significance of the model = .000**

Education was not significant in this model (p = .844), and therefore it was eliminated from the equation (see table 10b).

We conducted the regression analysis only with the poverty index, which explains only 1.0 percent of the variation in the distribution of depression scores (R square, the coefficient of determination was 1%). Thus, the socioeconomic and structural determinants as measured by the poverty index, account only for 1.0 percent of the variation in the depression score, while the other 99 percent is explained by factors not in the current model. However, the 1% of variance explained was significant, because the level of significance was p < .000. The revised model 1 without education is presented in Table 10b.

Table 10b **Model 1 Coefficients-socioeconomic & structural determinants**

	Unstandardized Coefficient		Standardized. Coefficient			Collinearity statistic	
	B	Std error	Beta	t	level of sig	Tol	VIF
(Constant)	15.294	0.079		192.390	0.000		
Poverty Index	**-0.151**	**0.02**	**-0.112**	**-7.740**	**0.000**	**1.000**	**1.000**

R Square = 1.1% **F = 59.914** **Significance of the model = .000**

The relationship between the poverty index and depression score is expressed in the equation below using the unstandardized coefficients:

Y = 15.294 + (-.151)*(the poverty index)

(1)

Note that a person with a poverty index of zero, meaning that person's income is below poverty level, has an average depression score of 15.294. As poverty index increases (and thus, poverty level decreases), the depression score decreases .151 for each unit. Specifically, a person with a poverty index of 1, who is exactly at poverty level, had an average depression score of 15.143, while someone with an index of 2, who is above poverty level, would have the average depression score of 14.992.

Further, the standardized regression coefficient shows that with every 1 standard deviation (1 SD = 2.55 unstandardized points on the poverty index) increase in the poverty index, the depression score decreased .112 standard units (1 SD = 3.83 points on the unstandardized depression scale). In the models that follow in this chapter, the standardized regression coefficients were used only to compare the effect of the independent variables on the depression score. This rule applies because the independent variables are measured on different scales, and they cannot be compared using the unstandardized coefficients. The community context variables were input into the regression model; however, only the final model was listed after all non-significant variables (P >.10) were eliminated.

Community Context

Keeping in line with the SDH model, the next groups of variables to be tested are the community context variables. This set of variables includes social support from the church, family, and friends. In addition, social exclusionary variables and community/neighborhood variables are examined (see table 11 below for a detailed list).

In an effort to determine if we can retain all the community context variables in the model as independent predictors of the depression score, multicollinearity was assessed similarly to the procedure used above. Table 11 depicts the second model with all of the socioeconomic & structural determinant variables and the community context variables. The regression equation for predicting the depression score using the predictor is depicted in table 11 below. Due to a moderate correlation (r = .577) between two predictor variables (frequency that friends help out and contact with friends) in the set measuring community context, we checked for multicollinearity issues.

Table 11 **Model 2: Coefficients Table-Community Context**

		Unstandardized Coefficient		Standardardized Coefficient			Collinearity Statistics	
Model 2		B	Std. Error	Beta	t	Sig.	Tol	VIF
1	(Constant)	15.294	.079		192.390	.000		
	POVINDEX	-.151	.020	-.101	-7.740	.000	1.000	1.000
2	(Constant)	20.904	.737		28.379	.000		
	POVINDEX	-.125	.020	-.083	-6.233	.000	.905	1.105
	Freq. of contact w/church	**-.021**	**.046**	**-.006**	**-.447**	**.655**	**.898**	**1.113**
	Tangible support/church	**-.057**	**.051**	**-.016**	**-1.113**	**.266**	**.789**	**1.268**
	Closeness to church	**.005**	**.123**	**.001**	**.038**	**.970**	**.842**	**1.188**

Table 11 Continued **Model 2: Coefficients Table-Community Context**

Model 2		Unstandardized Coefficient		Standardardized Coefficient			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tol	VIF
	Freq. of contact w/family	**-0.071**	**0.045**	**-0.023**	**-1.578**	**0.115**	**0.788**	**1.269**
	Tangible support/family	0.099	0.049	0.03	2.01	0.045	0.748	1.337
	How close do you feel to family members	**-0.194**	**0.23**	**-0.012**	**-0.846**	**0.398**	**0.747**	**1.34**
	Freq. of contact w/friends	**0.07**	**0.054**	**0.03**	**1.308**	**0.191**	**0.311**	**3.219**
	Tangible support/friends	**0.066**	**0.052**	**0.018**	**1.26**	**0.208**	**0.756**	**1.322**
	Closeness you feel toward friends	-0.478	0.189	-0.056	-2.525	0.012	0.327	3.061
	Receives emotional support from family	**-0.043**	**0.029**	**-0.024**	**-1.5**	**0.134**	**0.634**	**1.578**
	Negative interaction with family	-0.182	0.025	-0.1	-7.366	0	0.868	1.152
	Major experience of discrimination	**-0.11**	**0.133**	**-0.011**	**-0.828**	**0.408**	**0.851**	**1.175**
	Everyday discrimination	-0.061	0.008	-0.131	-7.826	0	0.572	1.749
	Internalized Racism	**0.024**	**0.019**	**0.017**	**1.268**	**0.205**	**0.921**	**1.086**
	Coping with Discrimination-	-0.044	0.014	-0.059	-3.25	0.001	0.481	2.078
	Contact w/neighbors	-0.049	0.027	-0.024	-1.844	0.065	0.935	1.07
	Neighborhood Safety-	**0.009**	**0.008**	**0.022**	**1.1**	**0.272**	**0.42**	**2.38**
	Neighborhood participation	**0.219**	**0.149**	**0.019**	**1.475**	**0.14**	**0.938**	**1.066**

The multicollinearity coefficients associated with the two variables are as follows: for frequency friends help out, Tol = .756 and VIF = 1.322, which is not significant at p>.10; for contact with friends, Tol = .311 and VIF = 3.219, which is also not significant at p>.10. Therefore, they were both eliminated from the second model (see table 11).

Moreover, frequency of contact with church, tangible support from church, closeness to church, frequency of contact with family, closeness to family, frequency of contact with friends, tangible support from friends, emotional support from family, major experiences of discrimination, internalized racism, neighborhood safety, and neighborhood participation appear to be non-significant in this equation at p>.10 and were also eliminated from the equation (see table 11b).

The predictor variables in the second model yield an R square (coefficient of determination) of 5.5 percent (see table 11b below) which indicates that the socioeconomic and structural determinants account for 5.5 percent of the variation in the depression score, and that the other 94.5 percent is explained by factors not in the current model. The revised model 2 includes only the variables significant at p<.10.

Table 11b displays the unstandardized regression coefficients (β) along with their standard of errors, standardized regression coefficients (βeta) t value (obtained by dividing the unstandardized regression coefficients by their

standard errors), significance level of the t-test (p-value) and the collinearity coefficients.

Table 11b **Model 2 Coefficients**

		Unstandardized Coefficient		Standardardized Coefficient			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	15.294	.079		192.390	.000		
	POVINDEX	-.151	.020	-.101	-7.740	.000	1.000	1.000
2	(Constant)	20.557	.442		46.504	.000		
	POVINDEX	-.115	.019	-.077	-5.967	.000	.979	1.022
	Tangible support/family	.124	.043	.037	2.874	.004	.980	1.021
	Closeness you feel toward friends	-.238	.110	-.028	-2.163	.031	.970	1.031
	Negative interaction with family	-.178	.024	-.098	-7.335	.000	.902	1.108
	Everyday discrimination	-.064	.006	-.139	-10.329	.000	.892	1.121
	Coping with Discrimination-	-.033	.010	-.045	-3.519	.000	.976	1.025
	Contact w/neighbors	-.046	.026	-.023	-1.777	.076	.977	1.023

R Square 5% **F = 48.535** **level of significance for the model = .000**

The regression equation (2) below displays the unstandardized regression coefficients of the model 2 presented in table 11b, which characterize the relationship between each independent variable and depression.

The revised model 2, our final predictive model for this step, includes only the variables that were significant at $p<.10$:

Y = 20.557 + (-.115)*(the poverty index) + (.124)*(tangible support from family) + (-.238)* (Closeness you feel toward friends) + (-178)*(Negative interaction with family) (-.064)*(Everyday discrimination) + (-.033) *(Coping with Discrimination) + (.046)* (Contact w/neighbors) (2)

The constant is the average depression score of the reference group (in this model represented by the non-Latino white female). The depression score changes depending on the characteristics of the individual. In other words, depending on how individuals score on the significant variables in the model,

such as poverty index, the depression scores increase or decrease. The sign of the regression coefficients indicates the direction in which the depression score varies with the change in the respective predictor. The constant shows that a person with a poverty index of zero (meaning below poverty level) does not receive tangible support from family, is not close to friends, had a negative interaction with family, does not experience every day discrimination, does not cope with discrimination well, and has no contact with neighbors has an average depression score of 20.6.

Holding all other variables constant, for each unit increase in the everyday discrimination variable, the depression score decreases -.064. Specifically, a person experiencing every day discrimination almost every day would have a score of 1, so their depression score would be 20.493; while someone who has an everyday discrimination score of 2 (experience every day discrimination at least once a week) would have a depression score of 20.429. So, the least degree of "everyday discrimination" a person experiences the lower his or her depression score.

Table 12 **Risk and Protective factors from Model 2**

Risk Factors	Stand. Coef B	Protective factors	Stand. Coef B
Everyday discrimination	-.139	Negative interaction with family (Y/N)	-.098
Poverty index	-.077	Tangible support/family (Y/N)	.038
Coping with discrimination (Y/N)	-.045	Closeness you feel toward friends (Y/N)	-.028
		Contact with neighbors (Y/N)	-.023

The strength of the risk and protective factors identified in table 12 is represented by the standardized coefficient beta coefficient. In addition to the strength, the β informs the reader of the direction of the relationship. For instance in table 12, everyday discrimination is a risk factor that contributes heavily to the level of depression. As experiences of every day (measured on a scale from 6 to 60, where the higher the number the less a person experiences everyday discrimination) discrimination decrease so too does the depression score. An everyday discrimination score of 50 would decrease the depression score by (50*-.139) or -6.95. The same logic holds true for the poverty index; if zero is poverty then a score of 2 would be 100% to 200% over poverty. So, the depression score would decrease by (2)*(-.077) which equals -0.154.

So by not having a negative relationship with family, the depression score decreases by -.098. Keeping with the same line of reasoning, receiving tangible support from family increases depression score by .038. Lastly, closeness towards friends and contact with neighbors decrease the depression score by -.028 and -.023 respectively.

The standardized coefficient beta gives an indication of the strength of the predictor variable. For instance everyday discrimination contributes heavily to the depression score, followed by negative interaction with family, the poverty index, coping with discrimination, closeness you feel towards friends, tangible support from family, and contact with neighbors.

Moreover, these are the only predictor variables in the current model that are significant to the .05 level except for contact with neighbors at p = .076. Because .076 is less than our criteria of .10, we retained the variable "frequency of contact with neighbors" in the final predictive equation for this step. With the inclusion of the community level factors, the model remains significant at p < .000 and explains six percent of variance in the distribution of depression scores. Next, the individual level factors were added to the model.

Individual Level Factors

The final group of predictor variables entered into the regression model are the individual level factors: 1) the sociodemographic data such as race, age, gender, marital status, household size, and region of country 2) the health behavior variables such as usual source of care, addiction, self reported physical health, and physical exercise 3) the psychosocial factors, which include self-esteem, hopelessness, mastery, self-report mental health, satisfaction with life, spirituality, stress and workplace discrimination factors, and 4) the biological factors such as comorbidity, weight assessment, and food insufficiency.

Following the same framework as discussed in the previous two regression equations, we investigated the correlations between the predictor variables. A moderate correlation between hopelessness and self-esteem (r = .386) was found. However, self-esteem was not a significant predictor, and it was dropped from the regression equation.

There was also a moderate correlation between hopelessness and mastery (r= .545). We elected to keep them both in the model because the multicollinearity statistics were within acceptable limits (Tol= .589, VIF=1.698), and there is a large body of literature that supports the claim that mastery and hopelessness influence the level of depression.

Table 13

		Unstandardized Coefficient		Standardized Coefficient			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tol	VIF
1	(Constant)	15.294	0.079		192.39	0.000		
	POVINDEX	-0.151	0.02	-0.101	-7.74	0.000	1	1
2	(Constant)	20.557	0.442		46.504	0.000		
	POVINDEX	-0.115	0.019	-0.077	-5.967	0.000	0.979	1.022
	Tangible suport/family	0.124	0.043	0.037	2.874	0.004	0.98	1.021
	Closeness you feel toward friends	-0.238	0.11	-0.028	-2.163	0.031	0.97	1.031
	Negative interaction with family	-0.178	0.024	-0.098	-7.335	0.000	0.902	1.108
	Everyday discrimination	-0.064	0.006	-0.139	-10.329	0.000	0.892	1.121
	Coping with Discrimination	-0.033	0.01	-0.045	-3.519	0.000	0.976	1.025
	Contact w/neighbors	-0.046	0.026	-0.023	-1.777	0.076	0.977	1.023
3	(Constant)	29.792	0.895		33.271	0.000		
	POVINDEX	-0.05	0.02	-0.033	-2.423	0.015	0.753	1.329
	Tangible support/family	**0.03**	**0.042**	**0.009**	**0.72**	**0.471**	**0.889**	**1.125**
	Closeness you feel toward friends	-0.195	0.106	-0.023	-1.84	0.066	0.903	1.107
	Negative interaction with family	-0.065	0.024	-0.036	-2.717	0.007	0.798	1.253
	Everyday discrimination	-0.047	0.006	-0.102	-7.357	0.000	0.728	1.374
	Coping with Discrimination-	**-0.012**	**0.009**	**-0.016**	**-1.295**	**0.195**	**0.924**	**1.082**
	Contact w/neighbors	**-0.038**	**0.025**	**-0.019**	**-1.502**	**0.133**	**0.904**	**1.106**
	AA Race	-0.981	0.099	-0.128	-9.963	0.000	0.848	1.18
	Centered age-around the mean	-0.016	0.004	-0.068	-4.16	0.000	0.519	1.927
	Male	-0.514	0.102	-0.067	-5.032	0.000	0.793	1.261
	Married	**-0.058**	**0.108**	**-0.008**	**-0.532**	**0.595**	**0.699**	**1.43**
	Employed	-0.544	0.174	-0.065	-3.127	0.002	0.323	3.095
	HOUSEHOLD SIZE	0.236	0.055	0.06	4.308	0.000	0.722	1.385
	Live in the South	0.433	0.096	0.056	4.532	0.000	0.91	1.098

Table 13

	Unstandardized Coefficient		Standardized Coefficient			Collinearity Statistics	
	B	Std. Error	Beta	t	Sig.	Tol	VIF
Usual source of care	-0.508	0.134	-0.051	-3.783	0	0.777	1.287
Addiction	0.381	0.116	0.04	3.281	0.001	0.939	1.065
Physical health rating	**-0.205**	**0.141**	**-0.022**	**-1.455**	**0.146**	**0.613**	**1.633**
Physical Exercise	**0.012**	**0.153**	**0.001**	**0.078**	**0.938**	**0.903**	**1.107**
Self Esteem	**-0.013**	**0.019**	**-0.009**	**-0.674**	**0.501**	**0.77**	**1.298**
Hopelessness	0.189	0.036	0.081	5.246	0	0.589	1.698
Mastery	-0.074	0.015	-0.078	-5.007	0	0.575	1.74
Mental health rating	-0.385	0.174	-0.034	-2.216	0.027	0.592	1.69
Satisfaction w/ life as a whole	-0.566	0.149	-0.049	-3.79	0	0.827	1.209
How spiritual are you	**0.034**	**0.133**	**0.003**	**0.255**	**0.799**	**0.922**	**1.084**
Workplace discrimination	-0.538	0.188	-0.035	-2.86	0.004	0.957	1.045
Extent to which satisfied with job	0.526	0.155	0.068	3.394	0.001	0.351	2.849
Extent worried about losing job in near future	**-0.375**	**0.243**	**-0.019**	**-1.543**	**0.123**	**0.931**	**1.074**
Distress	-0.264	0.016	-0.228	-16.96	0	0.776	1.288
Chronic Stress	-0.051	0.009	-0.081	-5.467	0	0.643	1.555
Worry about enough income to pay bills	**-0.132**	**0.131**	**-0.014**	**-1.009**	**0.313**	**0.764**	**1.308**
Physical Comorbidity	0.267	0.057	0.066	4.659	0	0.7	1.428
Over weight	**0.347**	**0.358**	**0.043**	**0.969**	**0.333**	**0.07**	**14.345**
Under weight	**0.581**	**0.391**	**0.037**	**1.487**	**0.137**	**0.229**	**4.367**
satisfied with weight	**0.367**	**0.354**	**0.048**	**1.038**	**0.299**	**0.066**	**15.077**
Enough to eat	**0.475**	**0.445**	**0.037**	**1.066**	**0.286**	**0.113**	**8.835**
sometimes not enough to eat	**0.605**	**0.484**	**0.04**	**1.251**	**0.211**	**0.138**	**7.244**
oftentimes not enough to eat	**0.324**	**0.543**	**0.013**	**0.596**	**0.551**	**0.318**	**3.144**

Moreover, there are several other individual level variables that were non-significant at p>.10. These are tangible support from family, coping with discrimination, contact with neighbors, marriage, physical health rating, physical exercise, spirituality, worried about losing job, worried about paying bills, being underweight, overweight, satisfied with weight, not enough to eat, sometimes not enough to eat, and oftentimes not enough to eat. These variables had to be eliminated from the regression equation (see table 13).

The regression model yields an R square of 18.1 percent, which indicates that the socioeconomic and structural determinants account for 18.1 percent of the variation in the depression score, and that the other almost 82 percent is explained by factors not in the current model. The final predictive model, to which we refer to as revised model 3 (see table 13b), includes only the significant variables (p<.10).

Table 13b **Model 3 Coefficients**

		Unstandardized Coefficient		Standardized Coefficient			Collinearity Statistic	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	15.294	.079		192.390	.000		
	POVINDEX	-.151	.020	-.101	-7.740	.000	1.000	1.000
2	(Constant)	20.296	.327		61.992	.000		
	POVINDEX	-.119	.019	-.079	-6.168	.000	.987	1.013
	Negative interaction with family	-.183	.024	-.101	-7.528	.000	.904	1.106
	Everyday discrimination	-.068	.006	-.147	-11.009	.000	.908	1.101
3	(Constant)	30.045	.575		52.227	.000		
	POVINDEX	-.054	.020	-.036	-2.756	.006	.830	1.205
	Negative interaction with family	-.063	.024	-.035	-2.632	.009	.811	1.233
	Everyday discrimination	-.048	.006	-.104	-7.604	.000	.742	1.347
	RaceAA	-.972	.096	-.127	-10.078	.000	.885	1.130
	AGE	-.015	.004	-.056	-2.342	.000	.564	1.774
	male	-.496	.095	-.064	-5.241	.000	.926	1.080
	Employed	-.604	.169	-.072	-3.567	.000	.341	2.930
	Household size	-.457	.186	-.052	4.593	.000	.874	1.144
	Live in the South	.410	.093	.053	4.387	.000	.953	1.049
	Has usual source of care	-.480	.125	-.048	-3.850	.000	.902	1.109
	Addiction	.404	.115	.043	3.525	.000	.961	1.040
	Hopelessness	.183	.034	.078	5.320	.000	.644	1.554
	Mastery	-.081	.015	-.085	-5.552	.000	.596	1.677
	Mental health rating	-.370	.148	-.033	-2.504	.012	.817	1.225
	Satisfaction w/ life as a whole	-.589	.147	-.051	-4.013	.000	.857	1.167
	Workplace discrimination	-.532	.188	-.034	-2.837	.005	.963	1.038
	Extent to which satisfied with job	.552	.153	.071	3.602	.000	.360	2.779
	Distress	-.263	.015	-.227	-17.167	.000	.801	1.249
	Chronic Stress	-.053	.009	-.084	-5.817	.000	.675	1.481
	Physical Comorbidity	.287	.055	.071	5.250	.000	.769	1.300

R Square = 18.1% **F = 64.805** **significance of the model = .000**

The regression equation for revised model 3 is as follows:

Y = 30.045 + (-.054)*(the poverty index) + (-.063)*(negative interaction with family) + (-.048)*(Everyday discrimination) + (-.972)*(race) + (-.015) *(AGE) + (-.496)*(male) + (-.604)*(employed) + (.228)*(household size) + (.410)*(live in the south) + (-.480)*(usual source of care) + (.404)*(addiction) + (.183)* (hopelessness) + (-.081)*(mastery) + (-.370)*(mental health rating) + (-.589)* (satisfaction w/life as a whole) + (-.532)*(workplace discrimination) + (.552)* (satisfied w/job) + (-.263)*(distress) + (-.053)*(chronic stress) + (.287)* (comorbidity)

(3)

Table 12b displays the unstandardized regression coefficients (β) along with their standard errors, standardized regression coefficients (βeta), the t-test value obtained by dividing the unstandardized regression coefficients by their own standard errors, the significance level (p-value) of the t-test, and the collinearity coefficients (tolerance and variance inflation factor).

The sign of the regression coefficients indicates the direction in which the depression score changes as a particular predictor increases by one unit. Thus for one unit increase on the poverty index scale, the average depression score decreases by an absolute value of 0.036.

In order to better understand the relationship between each of the independent variables and depression, the chart below displays the predictor variables by their effect on the depression score: risk factors and protective

factors. An increase in the "risk factors" lead to an increase in the score of depression, while an increase in the "protective factors" lead to a decrease of the average depression score. Thus, table 14 illustrates these two types of factors, and also ranks them based on the strength of the impact (standardized coefficient beta) on the depression score. The variables with the strongest impact on the level of depression are listed first, while the ones with the least, but significant, impact are closer to the end of the list.

Table 14. **Risk and Protective factors from Model 3**

Risk Factors	Stand Coeff. B	Protective factors	Stand Coeff. B
Distress	-0.227	Mastery	-0.085
AA Race (Y/N/)	-0.127	Satisfied w/ job (Y/N/)	-0.071
Everyday discrim.	-0.104	Household size **	-0.052
chronic stress	-0.084	Satisfaction w/life (Y/N/)	-0.051
Hopelessness (Y/N/)	0.078	Usual source of care (Y/N/)	-0.048
Employed (Y/N/)	-0.072		
Physical comorbidity	-0.071	** 0 = more than two people	
Male (Y/N/)	-0.064	1 = up to two people	
Live in the south (Y/N/)	-0.053		
Addiction (Y/N/)	0.053		
Poverty index	-0.036		
Neg. interaction w/fam. (Y/N/)	-0.035		
Workplace discrimination (Y/N/)	-0.034		
Good mental health (Y/N/)	-0.033		
AGE	-0.015		

The standardized coefficient beta gives an indication of the strength of the predictor variable. For instance the risk factors for depression listed above in table 13 inform the reader that distress contributes heavily to the depression score. As distress increases so does the level of depression. As you recall, distress is a scale variable with a range of 7 to 35, and the lower the score, the more distressed the individual. For instance, a non-Latino white woman with a distress score of 5 (very high distress) would have a depression score represented by the following equation: 30.045-(.227)*(7) + (-.127)*(0) + (-

.064)*(0) = 28.45 (severe depression). In comparison, an African-American male with a distress score of 7 would have a depression score of 30.045-(.227)*(7) + (-.127)*(1) + (-.064)*(1) =28.26. In both cases, the depression score decreased by the contribution of the unstandardized coefficient (Beta). Thus, the level of depression is influenced by the level of distress and by the race and gender of the individual. High distress is associated with high depression: the depression scores for non-Latino whites are more severe than the scores of African Americans, and women have more severe depression scores than males.

The next risk factors that contribute heavily to the level of depression is everyday discrimination (-.104), and chronic stress (-.084); both of these predictor variables are interval scales. Everyday discrimination ranges from 6 to 60; a score of 60 indicates that the individual has never experienced everyday discrimination, while a score of 6 indicates that the individual experiences everyday discrimination once a day. The higher the score, the less severe the discrimination experienced by the individual. Chronic stress is measured by an interval scale that ranges from 14 to 50. A 50 would indicate that the person does not experience chronic stress and would thus decrease the depression score by 50* (-.084). Conversely, a score of 3 would also decrease the level of depression but not as a score of 50.

Lastly, hopelessness is a dichotomous variable where 1= yes (hopeless) and 0= no (hopeful); it also has a positive relationship with the depression

variable. A non-Latino white woman with high a hopelessness score would have a depression score obtained by using the following equation (note that all other variables are zero): 30.045 + (-.127)*(0) + (.078) (1) = 30.1; in comparison, an African-American male with a high hopelessness score would have a lower depression score obtained as follows: 30.045 + (-.127)*(1) + (.078)*(1) + (-.064)*(1) = 29.932.

The above model lists several more risk factors that are just as important as the ones discussed, such as employment, gender, live in the south, addiction, negative interaction with family, workplace discrimination, and good mental health. These are dichotomous variables that either decrease the level of depression by the standardized coefficient β, or not affect it at all. For instance, the level of depression for males is -.064 points lower than that of females (due to: -.064* 0).

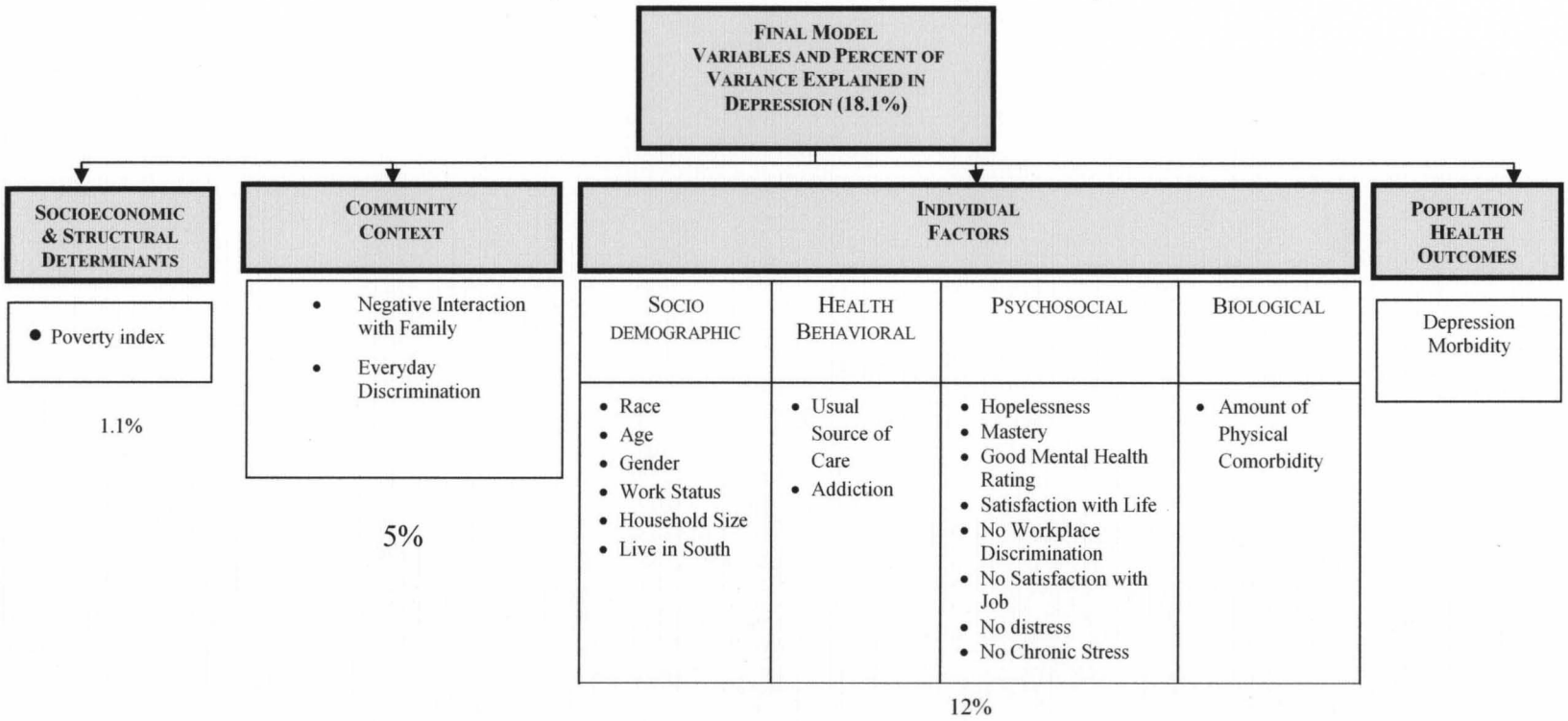
The regression coefficients for the continuous variables age, physical comorbidity, and the poverty index are slopes, and they decrease (or increase) the depression score by the amount displayed in the table for each unit increase in these variables. Thus, the depression score decreases by -0.015 for every year of age. So the depression score of a non-Latino white female of 45 years of age is calculated by 30.045 + (-.015)*(45). Additionally, as the number of physical comorbidities increases by one, the depression score increases by 0.287. So if a non-Latino white woman has 4 physical comorbidities, her depression score would increase by (.287)*(4). Lastly, as the poverty index increases by

one unit (meaning 100% to 200% above the poverty level), the person moves further away from poverty, and his or her depression score decreases by -0.036 for each unit (-.036)*(1).

The protective factors are presented in the second column of table 13; note that mastery (-.085) had the greatest impact out of all of the protective factors on the level of depression. Additionally, the higher the mastery level of the individual, the more protection against depression. The level of mastery is determined by a scale ranging from 7 to 28; the higher the level of mastery, the lower the depression score, which leads to more protection. The next protective factor that contributes to lower depression scores is satisfaction with job, which has a standardized coefficient $\beta = -0.071$. This is a dichotomous variable where 0 = not satisfied and 1 = satisfied. Therefore, if the individual is satisfied with his job, there is some level of protection in having this satisfaction. In the above regression equation, this satisfaction with the job decreases the depression score by the standardized coefficient β of -0.071. Lastly, satisfaction with life and usual source of care are the last two protective factors with the least impact of all the protective factors. Please note the final variables in the regression model are listed on table 15.

Figure 2

Variables and Explained Variance from Final Step in Regression Analysis



COMMUNITY LEVEL ACTIONS

- Planning at the community level to address health determinants
- Building community capacity to respond to health issues
- Promoting health, promoting schools, child care centers and workplaces
- Assessing the health impacts of development proposals and other policy and program initiatives

INDIVIDUAL RISK AND PROTECTIVE ACTIONS

- Identify and address the social context of health behaviors and psychosocial risk factors
- Support integration of programs and services
- Promote and maintain affordable, accessible health care

"Research indicates that depression treatment may have even greater positive outcomes among people of color than whites."
(Bluthenthal, Jones, Ellison, Koegel, et al., 2004, p. 1).

CHAPTER VI: DISCUSSION

Although this study and many other national and community studies concluded that African Americans have lower prevalence of depression than non-Latino whites, this should not discourage further research on African Americans and depression (Williams, Gonzalez et al., 2007; Jackson et al., 2004; Kessler, Berglund, Dimier, Jin et al., 2003; Jackson, 1991). Additionally, these studies found that African Americans are less likely than whites to have a major depressive disorder, but when they do, it tends to be more chronic and severe (Williams, Gonzalez et al., 2007). Moreover, African Americans are less likely than non-Latino whites to receive adequate mental health treatment, which could mean that depression can go undetected and thus skew the prevalence rates. As previously noted, the Report of the Surgeon General states, two-thirds of the people with mental illnesses and substance abuse do not receive mental

health treatment (UDHHS, 2001). This alone is reason for social workers to take notice.

There is a body of evidence that supports the allegations that African Americans are frequently misdiagnosed and are more at risk for misdiagnosis than non-Latino white patients. Furthermore, probable causes of misdiagnosing could be as a result of social and cultural distances between patient and clinician and stereotypes of Black psychopathology. Additionally, clinicians should be aware of false-positive symptoms which can be caused by the clinician reading facial expressions of emotions incorrectly and failing to realize that many African Americans are proficient at wearing masks. Moreover, problems exist with mental health professionals use of biased diagnosis instruments, oftentimes rating scales may not be culturally sensitive to the African-American experience, and terminology may not be interpreted the same by African Americans as by non-Latino whites. Lastly, the combined effect of various sources of diagnostic error can lead to possible misdiagnosis (Adebimpe, 2001; Borowsky, Rubenstein, Meredith, Camp et al., 2000).

Likewise, African Americans are inadequately managed and are less likely to receive appropriate care in many healthcare settings (Miranda & Cooper, 2004) and thus face disparities as evidenced by the Report to the Surgeon General and the IOM report discussed previously in the literature review. Prior research also revealed that non-Latino white service providers often feel anxious when dealing with African Americans (Burgess, van Ryn, Dovidio, & Saha, 2007).

Researchers involved in the National Ambulatory Medical Care Surveys have revealed that African Americans are less likely to receive antidepressant medications than non-Latino whites (Snowden, 2001; Miranda, & Cooper, 2004; Das, Olfson, McCurtis, & Weissman, 2006). Additionally, according to Atdjian and Vega (2005), another important disparity is the fact that minorities underutilize psychiatric services. This dilemma is a cause for concern to those in the helping professions in general, and social workers in particular, because of the high volume of clients with mental disorders seen by social workers.

There is mistrust in the mental healthcare system based on historical knowledge of events such as the Tuskegee Syphilis Study and personal experiences of discrimination in the healthcare system as well (Moseley, Freed, Bullard, & Goold, 2007). There is adequate documentation in medical literature that certain ethnic groups attribute mental disorders to religious beliefs, and many African Americans have strong ties to the church. Cultural factors tend to be at the top of the list when investigating the problem of treatment compliance (Ruiz, 1995; Gomez, Gomez, & Ruiz, 1983; Ruiz, 1982), and also documented in the literature is the need for culturally sensitive mental healthcare providers. Minorities are more likely to avoid or delay seeking care (IOM, 2003); therefore, social workers can work to dispel the myths and address the biases experienced by many minorities.

Depression is a social problem that affects as many as 19 million people in the U.S., and Williams, Gonzalez et al., (2007) report that 14 percent of the

African-American population suffers from depression. This number represents approximately 4.8 million people. Social workers should be aware of this disease and be able to recognize the symptoms and understand the treatment possibilities. "Depression is the second most common seen disorder in primary care settings, accounting for one out of eight visits" (Watts, Shiner, Pomerantz, Stendler et al., 2008, p. 378). Social workers are very crucial to depression treatment teams and should be aware of the fact that African Americans are unfairly treated by the mental healthcare profession and receive a lower quality of healthcare. Moreover, the prejudicial treatment of minorities in the healthcare setting is influenced by the patient's race and ethnicity (I.O.M. 2003). This inequality contributes to the current disparities that exist in treatment for depression and should also be addressed by the social work profession.

Social workers should look past the fact that African Americans have lower prevalence rates of depression than non-Latino whites and focus on the treatment or lack of treatment that they receive. In addition to race and ethnicity, social workers should be aware of gender differences in reporting depression. Research has shown that males tend to report depression less than females (Emslie, Ridge, Ziebland, & Hunt, 2006; Connery & Davidson, 2006; Cochran & Rabinowitz, 2000). Mental health social workers need to be aware of the idiosyncratic ways in which men express and manage depression in addition to being aware of internalized gender role stereotypes. Social workers should increase their efforts to accelerate initiatives to reduce unintentional bias among

mental healthcare providers. This task can be accomplished by providing mental healthcare social workers with proper training to spot bias in their settings (Cochran & Rabinowitz, 2003).

The results of this research can assist mental healthcare workers, policy makers, and practitioners in identifying factors associated with depression in African Americans. For instance, depression has a linear relationship with level of education and income. Therefore, when a client comes in for help and certain indicators are present, such as lack of education, experiences of discrimination, distress and substance abuse, the social worker should assess the client for depression and observe for depressive symptomology. Additionally, by identifying factors that influence depression in African Americans, clinical social workers are able to inform other members of the therapeutic treatment team when discussing African-American clients. Another concern is the growing epidemic of suicide among older African-American adolescents (Center for Disease Control and Prevention, 2006) and the prevalence for attempted suicide among African-American high school students is approximately eight percent. Social workers should be aware of this growing trend and increase efforts to screen African Americans at risk for suicide. The question remains, what can social workers do to assist this population in overcoming these disparities?

Socioeconomic & Structural Determinants

The current study indicates that two prominent factors represent socioeconomic and structural determinants: living in poverty and less education.

Given that more African Americans live in poverty and have less education, they are at greater risk of experiencing depression. The results of this study show an inverse relationship between the poverty index and depression scores and the level of education and depression score. Moreover, the amount of variance explained in the dependent variable, depression, is approximately two percent. Even though the contribution is minimal at best, policy and programs to help improve the socioeconomic standing of African Americans can help to eradicate depression in education and poverty. According to Zastrow and Kirst-Ashman (2004), there are a number of factors that cause poverty, which include unemployment, poor physical health, emotional problems, drug addiction, low educational levels, racial and sexual discrimination and mental retardation. However, the thread that runs between the poverty index and education is income.

Lewis (1966) found that poverty is perpetuated from generation to generation because of cultural factors. Poverty arose after extended periods of economic deprivation experienced by the African-American population in America. In other words, it is a cycle and passed down generationally. Social workers can assist this population by helping to eliminate some of the barriers that currently exist in the requirements for financial aid which is much needed by African Americans if they are to be allowed to compete in this global economy. In order for African Americans to compete for jobs, education is paramount. Social workers can provide assistance to African Americans who desire a post-

secondary education. In addition, Zastrow and Kirst-Ashman (2004) believe that the first step to eradicating poverty is to eliminate the stigma associated with poverty. Social workers can spearhead programs that encourage African Americans to improve their socioeconomic situation and redefine their social environment. Community level interventions are needed as well.

Although education was dropped from the regression equation, because it was non-significantly related to depression, it is nevertheless an important means of combating poverty. According to the U.S. Department of Education (2009), the dropout rate for African Americans between the ages of 16 and 24 was 12 percent compared to only six percent for non-Latino whites. Programs and policies should be developed that address the disparities in dropout rates. Education is the key to unlocking the doors of poverty. If African Americans are going to break the cycle of poverty, they should have equal access to higher education. Poverty is related to many predictor variables in this study, and efforts to eradicate poverty would also support most community level and individual level interventions that address depression. Mental health is adversely affected by poor socioeconomic conditions, the same conditions that plague African Americans and other poor underrepresented communities throughout the country (USDHHS, 1999).

Community Level Interventions

Community level interventions only work if the community is a viable place that has the capacity to sustain its residents. Communities according to Chaskin,

Brown, Venkattesh, and Vidal (2001) provide their residents with services, housing, jobs, education, and oftentimes, race and social class determine the level of services provided by a community. Therefore, communities without these resources end up in distress. Likewise, distressed communities give rise to problems, which often cause them to suffer and loose the resources that are necessary to sustain its inhabitants. In order to restore such communities to a self sustaining entity, programs are needed that provide residential stability, neighborhood safety, education, employment opportunities, and an infrastructure that can sustain growth. When communities lose that infrastructure, its inhabitants suffer job loss, poor living conditions, and lack of opportunities. Likewise, these conditions can lead to crime, substance abuse, and poor physical and mental health (Chaskin, Brown, Venkattesh, & Vidal, 2001).

In order to effectively address the mental health needs in the African-American community, providers must obtain a better understanding of the multifarious roles that cultural backgrounds and diverse experiences play in mental disorders in these communities. As discussed in the previous chapter, the amount of variance explained in depression from socioeconomic and structural determinants and community level factors was approximately six percent. This is an important indication that community level interventions can help address depression in African Americans.

Social support figures prominently into the level of depression in African Americans. The current research shows that tangible support from churches,

close contact with friends, and positive interactions with family members also reduce depression in African-American males. The current study also shows that the more support a person has, the more protection he has against depression. This study is an indication that community social support helps to stave off depression in African Americans. Additionally, these findings are consistent with the literature which reports that strong social, religious, and family connections have helped many African Americans overcome harsh conditions and maintain optimal mental health (Chatters & Taylor, 2005).

Oftentimes, African Americans have turned to family, community, church, (APA, 2010) and religious leaders to cope. Research has indicated that the African-American church is a central entity in the lives of many African Americans, and this belief has been documented in numerous scholarly works (Chatters & Taylor, 2005; Marks & Chaney, 2006). Therefore, an opportunity exists for community health service providers to collaborate with local churches and community groups to provide mental health care and education to families and individuals. Perhaps neighborhood health fairs with a focus on mental health issues are another way to inform communities about mental health issues and what can be done to address them. Research on African Americans indicates that the church is a guiding force (Chatters & Taylor, 2005) and therefore, it stands to reason that programs in conjunction with the church may stand a better chance of reaching a greater number of African Americans. Moreover, efforts on the part of the local, state, and federal government to

recruit qualified African-American mental health service providers need to increase. It is important to have health care providers with whom marginalized populations can identify.

Likewise, access to mental healthcare is an issue as well. Neighborhood clinics with extended hours during the week, and that open on weekends are greatly needed. Government and not for profit health agencies can focus on developing and implementing early screening programs and health education strategies at elementary and high schools. More importantly, the community level interventions should incorporate the principles of the Afrocentric perspective. This perspective espouses that the individual cannot be understood outside of his/her social context and that spirituality connect the individuals to each other and to their Supreme Being. Lastly, this perspective promotes the philosophy that the mind, body, and spirit are equally as important (Schiele, 1996; Jackson, 1995).

Everyday discrimination also figures prominently into the level of depression experienced by African-American men. Mental healthcare workers need to key in on this crucial outcome. Perhaps investigating the causes of everyday discrimination is a start. It may seem as if we have progressed in the area of discrimination in the U.S., but research has shown that oftentimes minorities experience hidden discrimination. Another factor that surfaced as a predictor of depression is having a usual source of care. According to the report, Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care

(Institute of Medicine, 2003), there are a myriad of sources that contribute to disparities in health. For example, there is some evidence that suggests bias, prejudice, and stereotyping on the part of healthcare providers may contribute to differences in care. If the nation is to combat discrimination, it should be addressed in healthcare agencies as well. This fact alone can also contribute to persistence of depression in African Americans. According to the IOM (2003), healthcare providers are a source of discrimination and contribute to the lack of mental healthcare for African Americans suffering with depression. Results of this study indicate that not only are community level interventions needed, but individual level interventions as well.

Individual Level Interventions

The results show that adding individual variables to the regression equation increases the amount of variance explained in the dependent variable, depression by 12.6 percent for a total of 18.1 percent. Therefore, individual factors make a large and important contribution to depression in African-American males, and interventions for these factors would have an impact on reducing depression. If individual factors are examined (for instance, race, culture, ethnicity, gender, and socioeconomics) that help predict the level of depression in African-American males, one may find that and Afrocentric perspective can enhance intervention effectiveness. Research has shown that it is very important when dealing with African Americans to incorporate African

worldviews as a basis for understanding psychological functioning and well being (Bynum, 1999; Kambon, 1998; Nobles, 1991).

The Afrocentric perspective has been in existence since the 1960's and was developed by Molefi Kete Asante (Moore, Madsen, & Moore, 2003). It is important to remember that traditional African philosophy predates European influences (Harvey & Rauch, 1997). The Afrocentric perspective provides a culturally specific paradigm for serving African Americans and focuses on spirituality and connectiveness (Meyers, 1988). According to Harvey and Rauch (1997), Afrocentric social work is currently used by many African-American social workers, but all social workers can benefit from Afrocentric theory. Basically, the approach takes a culturally competent perspective by acknowledging and incorporating—at all levels—the importance of culture and the dynamics that arise as a result of cultural differences when providing interventions to African Americans (Harvey & Rauch, 1997).

According to researchers at the National Poverty Center, there is a potential connection between substance abuse and welfare receipt as well as between the role of substance abuse and recipients' ability to leave welfare for work. More initiatives like the welfare to work program are needed to assist individuals with getting off of the welfare rolls and onto the pay rolls. Substance abuse is just one of many social problems that cause poverty in the African-American community and one that is deserving of local, state, and national level interventions.

High hopelessness also contributes significantly to the level of depression experienced by African Americans. Hopelessness can cause a person to feel that they are trapped in misery with no hope at getting better. Interventions are needed to address hopelessness, and moreover, culturally specific interventions. An Afrocentric perspective can be used as a framework for addressing many of the predictor variables in this study, and a more in-depth exploration of the Afrocentric perspective will be covered in the next section. One way to combat high hopelessness is with empowerment. Empowerment plays a crucial role in social work, especially in social work with African Americans. Social workers can engage in activities with clients aimed at reducing powerlessness that has pervaded the community based on membership in a stigmatized population (Harvey & Rauch, 1997). More importantly, the focus should be prevention especially through programs aimed at African-American adolescent males.

Satisfaction with life is a predictor variable that surfaced in the current study as having an influence on the level of depression. This condition can be effectively addressed when treating African-American adolescents. In 1989, the Institute of Medicine revealed that Black male teenagers are at risk for mental health problems (Harvey & Rauch, 1997). Programs are needed that address life satisfaction, self-esteem, and mastery.

An example of a program like this is the MAAT Center (Ma'at is an ancient Egyptian word for an ethical way of life). This program is a nine month schedule using casework and counseling. The program is located in Washington D.C.

which has a goal to empower black male adolescents through a rites of passage program. The program stresses involvement of the parents and/or caretakers because the founders realize that support and trust of the caretakers is vital if the program is to be a success. Lastly, the program directors realize that outreach is important, so when someone drops out of the program the staff seeks them out, investigates the causes, and attempts to get them resolved in the program. For example, if they dropped out due to transportation, the center will pick up and drop off the client. In addition, transportation times can allow for informal conversation with youth that may not have occurred at the center (Harvey & Rauch, 1997).

The MAAT program centers on the after school program where adolescent African-American males are offered modules on behaviors for living such as manhood development, drug education, and sexuality. In addition, math, science, and art are offered as well. Part of the success of the program involves getting parents and/or guardians involved which lets the young male know that people do indeed care about his well being. The MAAT Center provides formal and informal counseling services to families, and family members are connected with educational services, health services, and legal services (Harvey & Rauch, 1997). More programs are needed that focus on empowering African-American male adolescents.

This study also found that stress contributes to the level of depression. Stress has been known as the silent killer and can be effectively addressed

through mental health education from a profession on how to deal with stress (Vimont, 2008). Exercise, eating right, and vacations help to fight stress, especially stress from discrimination (Vimont, 2008). One way to educate youth on how to handle stress is with mentorship. Mentorship is also an important vehicle when addressing the needs of the African-American adolescent. Mentors can come from all walks of life, but they must have a vested interest in the positive development of the African-American male. Oftentimes, African-American fraternities, high schools, and church groups have mentoring programs. The primary goal of a mentor is to engage in healthy interpersonal relationships with the mentee (Utsey, Howard, & Williams III, 2003).

Role modeling also is an important aspect of mentorship, so it helps if the mentors are college graduates with professional jobs. This requirement is not mandatory for success, but it aids in positive role modeling. Addressing the needs of this high risk population can lead to providing protection from discrimination. The African-American male adolescent is at high risk for dropping out of school, incarceration, and early death. According to Harris (1995), Black masculinity is at stake because African-American males have redefined what is to be a man. The definition includes promiscuity, toughness, thrill seeking, violence, posturing, certain style of clothes, and a certain type of speech. This mindset is problematic in that it prevents meaningful family and church life, educational attainment, and employment. Oftentimes, in pursuit of money, youth drop out of school to obtain fast money. In this instance, a positive

African-American role model can help dispel the false sense of masculinity, help to redefine what is to be a man, and instill values more in line with Afrocentricism.

Comorbidity has figured significantly in the level of depression as well. This research counted the number of comorbid conditions that the study participants were experiencing. However, this study does not show what condition occurred first, but the outcome can inform practice by emphasizing the importance in addressing conditions that occur alongside depression. One such condition is type II diabetes mellitus (T2DM). T2DM is emerging as a significant chronic health condition among African Americans in Louisville. The Centers for Disease Control and Prevention reported that 17 percent of African Americans residing in Kentucky have T2DM, compared to 11 percent of European Americans (United States Department of Health and Human Services [USDHHS], 2008).

In addition, hypertension is also another common co-morbid condition that is associated with depression and must be addressed. What this outcome means is that not only is mental health a concern, but physical health as well. These issues can be addressed by behavioral life style changes (smoking cessation, diet, and exercise, etc.), but requires a primary care practice that implements effective, integrated (mental health and physical health) care.

Study Implications

Results of this study can also be used by therapist, mental healthcare providers, and policy makers who are working on strategies to improve the

nation's healthcare system for underserved populations. Research clearly shows that there are biases in the delivery of healthcare to African Americans which more than likely reflect the experiences of other cultural minorities. According to Mechanic (2008), most of the nation's urban areas responsible for providing healthcare for individuals with mental illness are fragmented among varying levels of government and categorical service agencies. Moreover, Mechanic (2008) found that interest in public mental health is waning, and the government is seeking to farm out most of the services. Contracting out mental health services has some advantages, such as less bureaucracy and less interference from special interest groups, but the disadvantage is government institutions have the infrastructures in place to deal with more long term and persistent illnesses (Mechanic, 2008).

Policy makers can also address issues of depression at the contextual level. As the research indicates, distress, race, everyday discrimination, chronic stress, hopelessness, mastery, good mental health, employment, and satisfaction with life are all predictors of depression in African Americans. Policy makers can address these issues by providing incentives for businesses to hire African Americans and provide training so that these individuals can obtain higher paying jobs. Moreover, the government can relax the requirements for obtaining financial aid for college because depression is overrepresented among adults with lower education (Kessler, McGonagle, Zhao, Nelson et al., 1994). Raising the minimal hourly wage and giving employers' incentives for providing adequate

health insurance for workers and their families are avenues for policy makers to address.

This study shows that the higher the level of education the lower the depression scores. Policy makers can allocate resources that make higher education more available for African Americans. Policy makers can also help to change the living conditions that many African Americans face since other research has shown that the daily stress of living in unsafe, unhealthy conditions is associated with depression (Latkin & Curry, 2003; Ross, 2000). Moreover, policy makers should consider funding non-traditional depression treatment, such as educational interventions that provide patients with detailed information on depression identifying depression symptoms and behavioral methods to control depression.

Let us not forget a major and growing concern of policy makers across the country, the lack of health insurance, and underinsurance that many underserved populations face in general. Health insurance, or "lack of health insurance is the primary factor preventing poor men of color from accessing services that could contribute to enhanced health status" (Whitley, Samuels, Wright, & Everhart, 2005, p. 421). An examination of the U.S. Census data reveals that there are approximately 300 million people in the United States, and approximately 13 percent, or 40 million, are African Americans. The poverty rate for the U.S. is 12.6 percent, and for African Americans, it is 24.9 percent, so one fourth of African Americans live below the poverty rate and 15% are unemployed

(U.S. Census Bureau, 2000). Health insurance becomes a major issue for African Americans, and without adequate mental health insurance, depression is likely to go untreated.

Study Strengths and Limitations:

One major strength of this study is the National Survey of American Life dataset, which has a very large number of subjects (6200) and a nationally representative sample that allows survey results to be generalized to the total United States population. The study also uses a widely respected and utilized model in healthcare research, the Social Determinants of Health (SDH) model, as a theoretical and analytical framework. At of the inception of this study, both the NSAL dataset and the SDH model have not been examined as done in this study.

Only one recognized racial/ethnic group was observed in this study, which is one limitation of this study, so it does not truly reflect the nation's heterogeneity. The study involved analysis of secondary data and as such the researcher had no control over the study's design. For example, the non-Latino white sample was not asked pertinent survey items about access to care due to time and funding constraints, which would have added very valuable information to this study. Another limitation is the omission of other variables, which could have been used as predictors. Variables such as neighborhood safety, community cohesion, transportation, poor housing, and working conditions which are included in the SDH model, but not in the NSAL dataset. Depression is

measured in the population with an instrument administered by laymen instead of clinicians. Moreover, some groups were excluded from the study. For example, homeless individuals and those in the jails and prison were not included in the sample, and both of these populations are disproportionately African-American males.

Future Research:

More empirical research in needed to examine neighborhood characteristics that may play a role in predicting depression in African Americans. As stated above, some structural variables about neighborhoods in the SDH model that were not in the NSAL dataset could be predictors of depression. Such measures were not available in the dataset; moreover, such an study would require multilevel statistical analysis. In addition, an examination of factors that contributes to everyday discrimination experienced by African Americans is also worth examining further. Lastly, and very important, research should look at access to mental healthcare for African Americans with depression. In addition, future research can address the question of socioeconomic status and depression, for instance, is the level of depression different for an African American and a non-Latino white male with the SES? Another important research questions would be what factors contribute to everyday discrimination?

Closing Thoughts

The Afrocentric worldview does not dictate ignoring European values altogether. The belief is that the European perspective is just one of many

viewpoints, not the premier worldview. Moreover, the European perspective emphasizes materialism and fosters the belief that the spirit is irrational or unreal, which is contradictory to the Afrocentric perspective. An Afrocentric analysis of social problems found that the social problems that are occurring in the African-American community are derived primarily from the imposition of a Eurocentric worldview (Stewart, 2004).

If African Americans are to be treated effectively, providers must understand the mind, body, and spirit connection, and realize that solely adhering to the European perspective alienates African Americans whose worldview is contrary (Schiele, 1997). Equally as important, providers must attempt to understand how African culture is integrated with African-American worldview. Treatment plans should not only include treating the mind and body, but the spirit as well. Most importantly, the focus should be on prevention and what better way of addressing prevention, than by starting with African-American adolescent males. If service providers and communities are serious about eliminating mental health disparities, then there should be more preventative interventions available.

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APPENDIX 1

	N	%	mean	SD
Socioeconomic & Structural Determinants				
Poverty			3.24	3.22
education			12.9	2.57
Community Context				
Social Support: Church				
Freq. of contact			3.13	1.17
Tangible support			3.28	1.65
closeness				
Yes	4419	75.30%		
No	1449	24.70%		
Social Support-Family				
Freq. Of contact			1.194	1.22
Tangible support			2.35	1.25
closeness				
Yes	1141	19.40%		
No	4227	80.60%		
Social Support-Friends				
Freq. Of contact			2.29	1.63
Tangible support			2.58	1.23
closeness				
Yes	4215	71.80%		
No	1653	28.20%		
Receives emotional support from family			5.197	2.12
Negative interaction with family			9.66	2.11
Social exclusion-				
maj. exp. of discrimination				
Yes	1141	19.40%		
No	4727	80.60%		
Everyda discrimination			49.24	8.29
Internalized racism			13.44	2.69
coping with discrimination			23.11	5.18
Community/Neighborhood				
contact with neighbors			3.92	1.89

APPENDIX 1 CONT.

		N	%	mean	SD
Community Context					
	neighborhood safety				
	Yes	3233	55.10%		
	No	2618	44.60%		
	neighborhood participation				
	Yes	2549	43.40%		
	No	3070	52.30%		
Individual Level Factors: Sociodemographics					
	race				
	AA	2848	48.50%		
	nLw	3021	51.50%		
	age			43.69	16.63
	gender				
	male	2681	45.70%		
	female	3187	54.30%		
	marital status				
	married	2815	48.00%		
	not married	3054	52.00%		
	work status				
	employed	4084	69.60%		
	unemployed	1764	30.10%		
	household size				
	region of country				
	South	3251	55.40%		
	not south	2617	44.60%		
Individual Level Factors-Health Behavioral					
	usual source of care				
	Yes	4821	82.20%		
	No	1047	17.80%		
	addiction				
	Yes	1199	20.40%		
	No	4669	79.60%		
	self report physical health			2.59	1.05
	physical exercise				
	Yes	5225	89.00%		
	No	643	11.00%		

APPENDIX 1 CONT.

		N	%	mean	SD
Individual Level Factors-Psychosocial					
	self-esteem			23.64	2.67
	hopelessness			6.67	1.63
	mastery			23.08	4.04
	self report mental health			2.22	0.976
	satisfaction w/life				
	Yes	5120	87.20%		
	No	749	12.80%		
	spirituality				
	Yes	4997	85.10%		
	No	872	14.90%		
	stress at work				
	workplace discrim.				
	Yes	480	8.20%		
	No	1380	23.50%		
	job satisfaction				
	Yes	3416	58.20%		
	No	2452	41.80%		
	worry abt losing job				
	Yes	228	3.90%		
	No	5641	96.10%		
	relentless stress				
	distress			30.53	3.30
	chronic stress			42.49	6.04
	worry abt paying bills				
	Yes	4731	80.60%		
	No	1138	19.40%		

APPENDIX 2

Publication date, title, and author(s)	Population	Sample	Measures/Instruments	Results/Findings/conclusions
(2007) *Profiles of depressive symptoms among African Americans and Caribbean Blacks.* Lincoln, K. D. , Chatters, L. M., Taylor, R. J., & Jackson, J. S.	African Americans , Caribbean Blacks, non Hispanic whites all 18 and older	Stratified multi-stage area probability sample design N=6082	(CES-D), Social Support and Life Stress Measures, Social Relations and life Stress Measures, Emotional Support from Family Measures, Experience of Racial Discrimination measures, and Nativity Status Measure.	African Americans report a higher mean number of depressive symptoms compared to Caribbean Blacks. Data indicates that AA report less average income, fewer years of education, less likely to be married, female, and to live in the South than Caribbean Blacks. There are no significant differences in reports of racial discrimination, emotional support, or negative interaction involving family members. Approximately 28% of Caribbean's residing in the USA are US born, and 18% have resided in the US for less than 10 years.
(2007)*Race, ethnicity, john henryism, and depressive symptom: The National Survey of American Life.* Neighbors, H. W., Njai, R., Jackson, J. S.	African Americans , Caribbean Blacks, non Hispanic whites all 18 and older	Stratified multi-stage area probability sample design N=6082	John Henryism Active Coping Scale, (CES-D, Social Stratification Beliefs (SSB), Social Dominance orientation (SDO), and two American Values Scales	Significant differences in household income between African Americans (AA), Caribbean Blacks (CB), non Hispanic whites AA had the lower income followed by CB and non Hispanic whites. There was a significant difference in the mean difference across African Americans, Caribbean Blacks, non Hispanic whites on measures of depressive symptoms, AA and CB had lower levels of depressive symptoms than whites, and AA and CB had higher levels of John Henryism than did non Hispanic whites. AA and CB reported higher levels endorsing the views that winning and getting ahead, the necessity of war, and keeping inferior groups in place as compared to non-Hispanic whites. African Americans showed no significant relationship between John Henryism and depressive symptoms (but not to be taken definitively)
(2003) *The epidemiology of major depressive disorder: Results from the national comorbidy survey replication (NCS-R).* Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, et al	Hispanic, non Hispanic black, and non Hispanic whites ages 18 and older	Multi-stage area probability sample design N=9090	WHO-CIDI, 12 month severity with the Quick Inventory of Depressive Symptomology Self Report (QIDS-SR), the Sheehan Disability Scale (SDS) and the World Health organization's Disability Schedule II (WHO-DAS II). , DSM-IV, Structured clinical interview for DSM disorders (SCID).	The prevalence of CIDI MDD for lifetime was 16.2% (95% confidence interval [CI], 15.1-17.3) (32.6-35.1 million US adults) and for 12-month was 6.6% (95% CI, 5.9-7.3) (13.1-14.2 million US adults). Virtually all CIDI 12-month cases were independently classified as clinically significant using the QIDS-SR, with 10.4% mild, 38.6% moderate, 38.0% severe, and 12.9% very severe. Mean episode duration was 16 weeks (95% CI, 15.1-17.3). Role impairment as measured by SDS was substantial as indicated by 59.3% of 12-month cases with severe or very severe role impairment. Most lifetime (72.1%) and 12-month (78.5%) cases had comorbid CIDI/*DSM-IV* disorders, with MDD only rarely primary. Although 51.6% (95% CI, 46.1-57.2) of 12-month cases received health care treatment for MDD, treatment was adequate in only 41.9% (95% CI, 35.9-47.9) of these cases, resulting in 21.7% (95% CI, 18.1-25.2) of 12-month MDD being adequately treated. Sociodemographic correlates of treatment were far less numerous than those of prevalence.
(1994) *The prevalence and distribution of major depression in a national community sample: The national comorbidty Survey.* Blazer, D. G., Kessler, R. C., McGonagle, K. A., Swartz, M. S.	Latinos, African American, and Collaborative Psychiatric Epidemiology Surveys. Ages 15-54.	Multi-stage area probability sample design N=8098	WHO-CIDI, DSM-III-R, , Structured clinical interview for DSM disorders (SCID).	The overall prevalence rates of lifetime depression was estimated at 17.1% and prevalence by age was constant among the three groups, lifetime prevalence rates were was higher among females as males, the life time prevalence rates for depression was lower overall among Blacks (except for 35-44 years of age). The highest life time prevalence rates appeared in black females 35-44 yrs of age. Female sex, lower SES, educational attainment, marital status of separated/widowed/ divorce and never married and employment as homemaker and other were found to have significant correlates for major depression in both models crude and adjusted.

UNIVERSITY of LOUISVILLE

INSTITUTIONAL REVIEW BOARDS

Fax: 502-852-2164

To: Stone, Ramona
From: The University of Louisville Institutional Review Board (IRB)
Date: Friday, May 15, 2009
Subject: IRB Correspondence
Tracking #: 09.0251
Title: Mental Health Disparities: A Study of Access to Mental Healthcare Services for African Americans

University of Louisville MedCenter One, Suite 200 501 E. Broadway Louisville, Kentucky 40202-1798

Office: 502-852-5188

This study was reviewed on 5/14/2009 and determined by the chair of the Institutional Review Board that the study is exempt according to 45 CFR 46.101(b) under category (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. The study is exempt only if information that could identify subjects is not recorded. Since this study has been found to be exempt, no additional reporting, such as submission of Progress Reports for continuation reviews, is needed. If your research focus or activities change, please submit a Study Amendment Request Form to the IRB for review to ensure that the study still meets exempt status. Best wishes for a successful study. Please send all inquires and electronic revised/requested items to our office email address at hsppofc: louisville.edu.

Board Designee: Quesada, Peter Letter Sent By: Perkins, Erin, 5/15/2009 2:14 PM

Full Accreditation since June 2005 by the Association for the Accreditation of Human Research Protection Programs, Inc.

Peter M Quesada

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RESEARCH INTERESTS

Healthcare disparities: Access to mental healthcare
Depression in African Americans
Substance abuse
Grandparents raising grandchildren

EDUCATION

University of Louisville Kent School of Social Work Louisville, KY
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Dissertation Research: *Predictors of Depression in African American Men and Their Implications for Community and Individual Focused Interventions.*

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Master of Science in Social Work, May 2006
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SPECIALIZED EDUCATION

June 2008	University of Michigan Inter-university Consortium for Political and Social Research and the Institute for Social research: Collaborative Psychiatric Epidemiology Surveys (CPES): Investigating Cultural and Ethnic Influences on Mental Health Training program.
June 2006	Transitions in chronic care with a specialized focus on Alzheimer's disease. Louisville, Kentucky.
June 2004	Kentucky School of Alcohol and Other Drug Studies.

TEACHING EXPERIENCE

University of Louisville

01/2010 **SW 619 Human Behavior in the Social Environment II**
This Masters level course provides students with the knowledge and conceptual frameworks needed to analyze the social, institutional, and cultural environments in which human behavior occurs. Central content deals with communities, organizations, groups, and families as social entities and the role relationships that characterize them as being dynamic and able to interact and create change.

09/2009 **SW 601 Human Behavior in the Social Environment I**
This Masters level course provides information related to theories and concepts of human behavior that are necessary for skill development in a contextually appropriate way. Client populations are examined and analyzed in their unique contexts with an emphasis on diverse developmental experiences.

08/2008 **SW 603 Human Diversity**
This Masters level foundation course is designed to provide students with the knowledge and skills for social work practice with people who are subject to various forms of oppression such as racism, sexism, heterosexism, classism, ageism, and ableism operating at the individual, community and institutional levels of society. Cultural diversity and strengths are emphasized. Developing greater professional and personal awareness about the impacts of various forms of oppression are addressed.

01/2008 **SW 626 Research Methods and Design**
This course provides Masters level students with the foundation knowledge for scientific inquiry and the use of research to inform evidence-based practice with an emphasis on critical thinking. The class covers all aspects of the research process from problem formulation to writing of the research report. It introduces students to qualitative, quantitative, and single-subject methods for conducting research and evaluating practice. Ethical issues associated with conducting research and evaluating practice are addressed as well as the uses of research to inform practice, policy, and to promote social justice are considered.

CLINICAL EXPERIENCE

08/2006 - 9/2008 **Second Time Around Group (STAG)** Louisville, KY
Social Worker
- Provided clinical social work to a grandparent raising grandchildren support group.

03/2006 – Present **Families in Transition** Louisville, KY
Social Worker
- Facilitate group interventions for parents and children as mandated by the Family Court System in Louisville Kentucky.

03/2005 – 05/2006 **University of Louisville** Louisville, KY
Clinical Intern-Archdiocese of Louisville
- Provided clinical social work to groups, families, couples, and individuals.

03/2005 – 05/2006 **University of Louisville** Louisville, KY
Clinical Intern-Community Minded Family Therapy Project
- Provided in home family social work for families throughout the community.

08/2004 – 03/2005 **University of Louisville** Louisville, KY
Clinical Intern- Seven Counties Services, Inc.
- Provided clinical social work to families, couples, and individuals based on a medical model using the DSM-IV. Specialized in Cognitive Behavioral Therapy.

01/2003 – 08/2003 **The Healing Place** Louisville, KY
Assistant Staff
- Responsible for facilitating client orientation and intake process as well as instructing and guiding the clients through the twelve step process of Alcoholics Anonymous using the Kelly Foundation recovery dynamics instructional theory.

RESEARCH EXPERIENCE

03/24/2010-present **Focus Group Facilitator**
University of Louisville & Belarmine University
Title: Facilitators and Barriers to Engaging in Physical Activity: A Pilot Study
Duties: Collection and transcription of data from study participants via focus group

09/2009-present **Co-Principle Investigator**
University of Louisville-Kent School of Social Work
Title: Use of Journaling about Self-Care in Graduate Social Work Training to Prevent Burnout.
Duties: responsible for triangulation of data and IRB submission

04/2009-present	**Graduate Research Assistant**-University of Louisville School of Nursing **Title: The Effects of Motivational Interviewing on Type 2 Diabetes Management in African American Adults: A Pilot Study.** Duties: Part of a multidisciplinary team and directly responsible for subject recruitment, administering a series of instruments, and data management.
11/2008-present	**Graduate Research Assistant**-University of Louisville **Title: - Temporal Fluctuations in the Motivation to Change Alcohol Abuse.** Duties: Recruit subjects who are being detoxified from alcohol in the University of Louisville Hospital. Compile a comprehensive list of reasons why persons stop complying with a treatment plan and rank these risks in terms of those most frequently cited.
05/2008-present	**Graduate Research Assistant**-University of Louisville **Title:-Family and Concerned Others Needs Analysis** Duties: Data management, designing and administering a survey regarding the needs and demands of family and concerned others of addicted persons.
02/2008-present	**Graduate Research Assistant**-University of Louisville School of Medicine. NIH funded grant # 5 R01 AA014371 **Title: Mechanisms of Alcohol Induced Immunosuppression** Duties: Assisting principal investigator in designing survey instrument and collecting data via interviews at a local hospital detoxification unit.
05/2007-02/2008	**Graduate Research Assistant-** University of Louisville- SAMHSA- CSAT / Volunteers of America # H79 TI14491-02-1 (VOA) **Title: Gender Specific Intensive Outpatient Treatment for HIV** Duties: Assisting principal investigator with writing, proofreading, and editing research study proposals for IRB related activities (i.e. HIPPA, and Human Subjects training). Assisting with the implementation of a Continuous Quality Improvement process at a local chapter of a national nonprofit organization for purposes of improving substance abuse and HIV risk behavior outcomes. Related duties included designing and implementing data collection procedures, collecting data and assisting with data analysis.

ACADEMIC COMMITTEES

01/2010	**School of Interdisciplinary and Graduate Studies-Minority Recruitment** Selected by the graduate school to represent the university for recruitment of potential graduate students.

03/2007	**National Conference on Graduate Student Leadership Planning Committee** Worked jointly with the University of Kentucky, University of Louisville, Washington University in St. Louis, the Kentucky Council on Postsecondary Education, and the Woodrow Wilson Foundation in planning a conference that prepares graduate students for leadership roles on campus, in the community, and in their future professions
11 /2006-present	**General Education Curriculum Committee Assessor** Duties include assessing student produced assignments in General Education courses using rubrics developed by the Committee which measure whether or not assignments meet the criteria outlined in the General Education plan. Reviewed student writing and conducted a performance assessment of the following competencies: critical thinking, cultural diversity, and effective communication in general education university courses.

OTHER WORK EXPERIENCE

11/2002 – 05/2003	**Chicago City Colleges** - *Adult Educator*	Chicago, IL
01/2000 – 03/2001	**Unum- Provident** - *Disability Benefit Specialist*	Chicago, IL
04/1999 – 12/1999	**Xerox Corp-** *Sr. Customer Administration*	Chicago, IL
09/1995 – 11/1998	**Tribune Co.** - *Sr. Commercial Collector*	Chicago, IL
03/1992 – 08/1995	**Batiste Corporation** *Vice President/ Credit Manager*	Oak Park, IL
08/1991 – 03/1992	**Cole Taylor Bank-** *Assistant Vice President*	Chicago, IL
07/1986 – 08/1991	**Southwest Financial Bank-** *Assistant Branch Manager*	Chicago, IL

CERTIFICATIONS

07/2006	**Families in Transitions facilitator** *Divorce adjustment education*	Louisville, KY
05/2005	**Prepare and Enrich** *Assessment tool and counseling program for couples*	Louisville, KY

HONORS AND AWARDS

November 2009	**2009 Diversity Symposium-Ball State University** *Most Creative Content Award ($200.00) for presentation*
August 2006	**Southern Regional Educational Board (SREB)** *Awarded three year doctoral fellowship for study at the University of Louisville*

May 2006 **University of Louisville**
Minority graduate fellow

August 2003-2006 **University of Louisville-Kent School Scholarship**
Awarded a three year scholarship for MSSW program

PUBLICATIONS

Refereed Publications

Barney, R. J., Buckingham, S. L., Friedrich, J. M., Johnson, L., M, & **Robinson, M. A.** (March 2010). The ethics of the President's emergency plan for AIDS relief (PEPFAR): A social work analysis and call to action. *Journal of Sociology and Social Welfare.*

Other Publications

Robinson, M. A. (Winter 2009). Theory or bust: A doctoral student's insight on the role of theory in education. *The New Social Worker* 16(1):24-27.

Robinson, M. & Shapanus, S. (2006) The second time around. *Marriage and Family Therapy News.* Summer 2006 Issue.

Manuscripts under review

Perry, A. R., **Robinson, M. A.,** Moore, S.E., & Alexander, R. (Submitted 12/31/2009). Afrocentric approaches successful community re-entry among African American males, in Lemelle Jr., A. J., Reed, W., & Taylor, S. (Eds.), *Handbook of African American Health: Social and Behavioral Interventions*. Berlin, Germany: Springer Science + Business Media. Under contract.

Moore, S. E., Bledsoe, L. K., Perry, A. R., & **Robinson, M. A.** (Submitted 1/7/2010). *Self care and students.*

PROFESSIONAL PRESENTATIONS

Peer Reviewed

November 2009 **The 2009 Annual Program Meeting of the Council on Social Work Education-San Antonio, TX.** Topic: Depressive Symptoms as Moderators of Mental Health Seeking Behavior In African Americans.

November 2009 **The 2009 Diversity Research Symposium at Ball State University-Muncie, Indiana. (Winner of Most Creative Content Award)** Topic: Community Dynamics in the Construction of Race: African Americans in Louisville, Kentucky Pre and Post Emancipation.

October 2009 **Research!Louisville, 2009 at University of Louisville Health Science campus-Kentucky.** Topic: Motivational Interiewing and Behavior Change Among African Americans with Diabetes: A Case Study.

July 2009	**The 2009 Joint Annual Conference of the Poor People's Economic Human Rights Campaign (*PPEHRC*) and the Social Welfare Action Alliance (*SWAA*): Building the Unsettling Force to End Poverty-Louisville, KY.** Topic: Social workers and self-care during the tough economic times.
November 2008	**The 2008 Annual Program Meeting of the Council on Social Work Education-Philadelphia, PA.** Session Chair- Health Track
May 2007	**The Nineteenth Annual National Conference on Social Work and HIV/AIDS-Albuquerque, NM.** Topic: A Proposed Model for Doctoral Students.
May 2006	**Kentucky Association of Social Work Educators**, Topic: Grandparents raising grandchildren.

INVITED PRESENTATIONS

August 2006	**Raymond A. Kent School of Social Work**-Topic: What to expect in your new practicum: Real life experiences.
July 2003	**YMCA Black Achievers Program- Louisville, KY.** Topic: Peer pressure and teenage substance abuse.

PROJECTS

September 2006	Developed a support group for grandparents raising grandchildren *Second Time Around Group (S.T.A.G.).*

COMMITTEES AND MEMBERSHIPS

2006	**Kentucky Statewide Kincare Steering Committee, Member**
2006	**Kentucky Association for Marriage and Family Therapy Newsletter Committee**: Responsibility: Facilitated student contributions to the association's newsletter.
2006	**Council on Social Work Education, Member**
2005	**National Association of Marriage and Family Therapy Associates, Member**
2004	**National Association of Social Workers, Member**
01/2004 – 06/2004	**The coalition for the homeless continuum of care advisory group-** Worked with homeless partnership grant committee to help agency apply for funding in a more effective and efficient manner.

References available upon request