

AN INVESTIGATION OF A CAUSAL MODEL OF DEPRESSION
IN BLACK SINGLE MOTHERS

by

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ABSTRACT OF THE DISSERTATION

An Investigation of a Causal Model of Depression in Black Single Mothers

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Professor Adela Yarcheski

The purpose of this study was to develop and test a theory of depression via causal modeling. The apriori over-identified causal model included the exogenous variables of perceived racism and perceived stress and the endogenous variables of anger, self-esteem, and depression. This research also tested the direct and indirect effects of ten hypothesized relationships according to the pattern of causation specified in the model.

The final sample consisted of 208 Black single mothers aged 18 to 45, who met the inclusion/exclusion criteria for the study. The participants responded to the Centers for Epidemiological Studies Depression Scale, the Rosenberg Self-Esteem Scale, the Spielberger State-Trait Anger Expression Inventory, the Perceived Ethnic Discrimination Questionnaire Community Version Brief and the Perceived Stress Scale.

The over-identified recursive causal model was tested using the LISREL 9.1 computer program. Maximum likelihood chi-square estimation was used to determine the overall fit of the model with the data, along with a variety of fit indices. Beta and gamma path coefficients were examined for their direct and indirect effects for ten hypothesized relationships. The findings indicated that there was an excellent fit of the hypothesized model with the data ($X^2(1, N = 208) = .05, p = .82$). The chi-square was not statistically significant and the probability was large. The fit indices for the model

were excellent. Beta and Gamma path coefficients were statistically significant for 9 out of 10 hypothesized relationships within the model ($p < .001$ to $p < .05$). The relationship between self-esteem and depression was not supported ($p > .05$).

Based on the chi-square, probability level, and the fit indices, there was an excellent fit of the model with the data; there were no specification errors in the model. The relationships of perceived stress, perceived racism, self-esteem, and anger to depression, according to the pattern of causation specified in the model, provide an excellent explanation of depression in Black single mothers. There is no direct causal link between self-esteem and depression in the model.

Dedication

This manuscript is dedicated to my mother, Dorothy Smith, my late father, Ronald Smith, and my late grandmother Grace White-Barksdale, all of whom I owe all of who I am and will become.

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Chapter I

The Problem

Depression is a serious global phenomenon, affecting people of all ages and backgrounds. Depression affects 121 million people worldwide including 14.8 million American adults which is about 6.7% of the U.S. population over the age of 18 in any given year (Kessler, Chiu, Demler, Merikangas, Walters, 2005; National Institute of Mental Health (NIMH), 2011; World Health Organization (WHO), 2011). The negative health consequences have been firmly established making the identification of depression in those at risk a critical public health priority (Healthy People, 2020; NIMH, 2009a,b; WHO, 2011).

Depression is prevalent among single mothers. Recent published reports show that 20% to 73% of single mothers report depressive symptoms consistent with a diagnosis of mild to moderate depression (Hatcher, 2008; Hilton & Kopera-Frye, 2006; Peden, Rayens, Hall, & Grant, 2004), which is more than 3 times the rate of depression in the general population of U.S. adults (6.7%; NIMH, 2009b). In an attempt to explain this phenomenon in this vulnerable population, causal models for depression have been developed and tested in single mothers (Hatcher, 2008; Peden et al., 2004; Samuels-Dennis, 2007). The theories confirmed from these models can guide practice and inform research.

Black women who are single mothers are particularly vulnerable to depressive symptoms. Studies examining depression in this population show that 47% to 70% of these mothers report depressive symptoms indicative of mild to severe clinical depression (Hatcher, 2008; Kneipp, Welch, Wood, Yucha, & Yarandi, 2007; Siefert, Williams, Finlayson, Delva, & Ismail, 2007). This high prevalence may be due to limited theory

which explains depression in this population, which leads to disparities in depression diagnosis and treatment (US Department of Health and Human Services Office of Minority Health (USDHHSOMH), 2011). Reports show that Black women often present with depressive symptoms uncharacteristic (Baker, 2001; Beauboeuf-Lafontant, 2007; Nicolaidis et al., 2010) of those described in the current criteria used for diagnosing Major Depressive Disorders (APA, 2000). This is due to the cultural variability in the experience of depression and underscores the need to add to the body of knowledge of depression in persons of diverse backgrounds by utilizing culturally relevant variables. Culturally relevant theories of depression that can be tested via causal models are needed for Black single mothers. These theories can be used for practice and to guide future research.

To fill a gap in the literature, the present study tested a theory of depression via a causal model in Black single mothers. This causal model has psychosocial variables relevant to single mothers. The model additionally has a cultural variable relevant for Black women who are single mothers, which has not been used in prior models tested in single mothers (Cairney, Boyle, Offord, & Racine, 2003; Peden et al., 2004; Samuels-Dennis, 2007). Psychosocial variables which are theoretically related to depression and whose relationships have been supported empirically in Black single mothers include perceived stress (Hatcher, 2008; Kneipp et al., 2007; Odom & Vernon-Feagans, 2010), self-esteem (Copeland & Harbaugh, 2010; Hatcher, 2008, 2009; Peden et al., 2004), and anger (Luutonen, 2007; Tan & Cargagnini, 2008; Thomas & Gonzalez-Prendes, 2009). A culturally relevant variable is perceived racism (Landrine & Klonoff, 1996; Krieger, Kosheleva, Waterman, Chen, & Koenen, 2011; Paradies, 2006) which bears a relationship to self-esteem (Bourguignon, Seron, Yzerbyt, & Herman, 2006; Fernando, 1984; Williams & Williams-Morris, 2000) and anger (Brondolo, Brady et al., 2008;

Clark, Anderson, Clark, & Williams, 1999; Feagin & McKinney, 2003).

The purpose of this study was to develop and test a theory of depression via causal modeling. The resultant over-identified causal model includes the exogenous variables of perceived racism and perceived stress and the endogenous variables of anger, self-esteem and depression, placed in the model according to theory. This model was tested in Black single mothers. Both direct and indirect effects were examined. Bollen (1989) states that "the direct effect is that influence of one variable on another that is unmediated by any other variables in the path model. The indirect effects of a variable are mediated by at least one intervening variable. The sum of the direct and indirect effects is the total effects" (p. 36).

Statement of the Problem

What is the pattern of causation among the study variables in a causal model of depression in Black single mothers and how well does the model fit the data?

Sub-problems.

In Black Single Mothers:

1. Are there differences between the theoretical model and the data; Is there a good fit of the overall model with data?
2. What is the direct effect of self-esteem on depression?
3. What is the direct effect of self-esteem on anger?
4. What is the direct effect of anger on depression?
5. What is the direct effect of perceived racism on self-esteem?
6. What is the direct effect of perceived racism on anger?
7. What is the direct effect of perceived stress on depression?

8. What is the direct effect of perceived stress on self-esteem?
9. What is the direct effect of perceived stress on anger?
10. What is the indirect effect of perceived racism on depression through self-esteem and anger and the relationship between self-esteem and anger?
11. What is the indirect effect of perceived stress on depression through self-esteem and anger and the relationship between self-esteem and anger?

Definition of Terms

1. Depression was defined as a complex of symptomatology such as feelings of helplessness and hopelessness, guilt and worthlessness, loss of appetite, sleep disturbances and psychomotor retardation (Radloff, 1977). Depression was operationally defined by participants' scores on The Center for Epidemiological Studies Depression Scale (Radloff, 1977).
2. Perceived racism was defined as unfair treatment received because of one's ethnicity (race or culture of origin) (Brondolo, Kelly et al., 2005). Perceived racism was operationally defined as participants' total scores on the Perceived Ethnic Discrimination Questionnaire Community Brief Version (Brondolo, Kelly et al., 2005).
3. Perceived stress was defined as the degree to which situations in one's life are appraised as unpredictable, uncontrollable, and overloading (Cohen, Kamarck, & Mermelstein, 1988). Perceived stress was operationally defined as participants' scores on the 10- item Perceived Stress Scale (Cohen et al., 1988).
4. Self-esteem was defined as a positive or negative attitude toward the self and a feeling of worthiness that one is good enough (Rosenberg, 1965). Self-esteem was operationally defined as the participants' scores on the Rosenberg Self-

Esteem Scale (Rosenberg, 1965).

5. Anger was defined as psychobiological emotional state or condition consisting of subjective feelings of anger that vary in intensity, from mild irritation or annoyance to intense fury (Spielberger & Sydeman, 1998; Spielberger, 1999). State-Anger was operationally defined as participants' scores on the State-Trait Anger Expression Inventory-2 (Spielberger, 1999).

Delimitations

The sample was delimited to mothers who self-identify with the Black race, aged 18 to 45, who have one or more children 1 year of age or older who live with them. These mothers were single, defined as not presently married. These mothers were also physically and mentally able to participate in the study and were able to read and comprehend the English language. Mothers who were pregnant or had children less than one year of age were excluded from participation. Mothers who were receiving psychiatric care or counseling or taking antidepressants were excluded from data analysis.

Significance

In a recent guest editorial in *Nursing Research*, Eun-OK (2012) indicated that she was tempted to support mandatory use of theory in research. As part of her rationale, Eun-OK stated that theory helps to ensure rigor and advance our science. The major contribution of the present study is the testing of a theory of depression via causal modeling created specifically for Black single mothers.

As stated previously, depression is a serious problem in Black single mothers (Hatcher, 2008; Kneipp et al., 2007; Siefert et al., 2007). Theory created for this particular population can be used in nursing practice and by other healthcare professionals working with this vulnerable population, especially since proposed "causal"

relationships in the theory were tested in the model. There was a need to study cultural and psychosocial factors influencing the expression of depressive symptoms in these women which could add to the theoretical body of knowledge of depression in Black single mothers. The knowledge gained in this study can ultimately impact practice by enhancing the ability of nurses and other healthcare workers to recognize and treat depression in this vulnerable population.

Another contribution of the present study is that it fills the need for health disparities research (USDHSSOMH, 2010), from a nursing perspective. Currently there are disparities with regard to the diagnosis and treatment of depression in Blacks when compared to Whites and the general population. Published reports show that Blacks in general are less likely to receive mental health treatment or counseling for a major depressive episode, more likely to receive inappropriate treatment, more likely to report depressive symptoms than Whites and are 30% more likely to report having serious psychological distress (Needlman et al., 1999; USDHHSOMH, 2011). Most recent reports examining these disparities have been published by researchers from the psychological, medical, and sociological sciences (Conner et al., 2010; Cruz, Pincus, Harman, Reynolds, & Post, 2008; Nicolaidis et al., 2010) and few from nursing (Lyon & Munro, 2001; Schrieber, Noerager, Stern, & Wilson, 1998). Nursing offers a holistic perspective from which human responses to actual and potential health problems can be examined. This unique perspective might reveal additional factors potentially contributing to disparities in depressive illness and treatment in Black single mothers which have yet to be confirmed.

In 1989, Williams called for more research to address the needs of minorities. Testing a causal model of depression in Black single mothers, as was done in the present

study, is a response to this call. The results of this study shed light on the most powerful variables contributing to depression in Black single mothers. The results of this study also provide direction for future research on depression in this population.

Lastly, numerous relationships were examined in the proposed causal model. The theoretical relationship between self-esteem and depression (Beck, 1967; Epstein, 2006) has been supported empirically in African American and White single mothers of low-income (Hatcher, 2008, 2009; Lutenbacher, 2002; Peden et al., 2004). The theoretical relationship between self-esteem and anger (Tavris, 1989; Clark, 2002) has been supported empirically in undergraduate female university students (Furman & Thompson, 2002), in low-income single mothers (Lutenbacher, 2002), and adult clinical samples (Fornells-Ambrojo & Garety, 2009; Menzel, 1998). The theoretical relationship between anger and depression (Greenberg & Paivio, 1997; Robbins, 2000; Tavris, 1989) has been supported empirically in Black and White women in general (Bruehl, Burns, Chung, Ward, & Johnson, 2002; Dibble & Swanson, 2000; Jackson & Emery, 2011; Tan & Carfagnini, 2008) and in a sample containing Black low-income single mothers (Lutenbacher, 2002). The findings in this study extend knowledge of these relationships to Black single mothers.

The theoretical relationship between stress and depression (Hammen, 2000; McEwen, 2006; Monroe & Harkness, 2005) has been supported empirically in low-income single mothers including African Americans mothers (Hatcher, 2008; Odom & Vernon-Feagins, 2010; Peden et al., 2004) and in African American women in general with hypertension (Artinian, Washington, Flack, Hockman, & Jen, 2006). The theoretical relationship between stress and self-esteem (Crocker & Wolfe, 2001; Mruk,

1995; Wills & Langer, 1980) and empirically in adult women (Lo, 2002), including samples containing single Black mothers (Lutenbacher, 2002; Peden et al., 2004). The theoretical relationship between stress and anger (Berkowitz, 1998, 2003; Berkowitz & Harmon-Jones, 2004; Hareli & Weiner, 2002) has been supported empirically in samples containing adult women (Bodenman et al., 2010; Broman & Johnson, 1988; Lutenbacher, 2002), in a sample containing low-income Black single mothers (Lutenbacher, 2002) and in an earlier study in a sample of Black adults (Broman et al., 1988). The findings of this study extend knowledge of these relationships to Black single mothers.

The theoretical relationship between perceived racism and self-esteem (Fernando, 1984; Williams & Williams-Morris, 2000) has been supported empirically. Several studies have found significant negative correlations between perceived racism/racial discrimination and self-esteem in African American adolescents (Seaton, 2009, 2010; Wong, Eccles, & Sameroff, 2003) and adult women (Bourguignon et al., 2006; Liang & Fassinger, 2008; Rusch, Lieb, Bohus, & Corrigan, 2006). The theoretical relationship between perceived racism and anger (Clark et al., 1999; Feagin & McKinney, 2003; Fernando, 1984; Tavis, 1989) has been supported in African American and multi-ethnic adult samples (Brondolo et al., 2008; Broudy et al., 2006), in African American adolescents (Wong et al., 2003), and in African American college students (Combs et al., 2006). The findings of this study extend knowledge of these relationships to Black single mothers.

In summary, this study examined the relationships above by looking at their direct and indirect effects in the causal model. The findings for each of the aforementioned

relationships in the causal model add to the theoretical and empirical literature for Black single mothers. This study additionally enhances nurses' and other healthcare provider's ability to understand depression in this vulnerable population which is important in treating this phenomenon.

Chapter II

Review of the Literature

The review of the literature presents descriptive theories of depression, self-esteem, perceived racism, perceived stress, and anger. Explanatory theories linking self-esteem and anger to depression and linking self-esteem to anger are also presented. Explanatory theories linking perceived stress to (a) self-esteem, (b) depression, and (c) anger as well as linking perceived racism to (a) self-esteem and (b) anger are presented. Empirical studies describing depression in African American women are presented along with studies providing support for the above theoretical linkages.

Descriptive Theories of Depression

Bibring (1953) conceptualized depression as a basic affective reaction of the ego characterized by regression to a primal state of helplessness. He defined depression as “the emotional expression (indication) of a state of helplessness and powerlessness of the ego” (Bibring, 1953, p. 24). Depression is characterized by feelings of helplessness, self-hatred, self-accusations, intensive and extensive inhibition of functions, and intensely felt emotions.

According to Bonime (1960), depression is specific practices carried out by an individual with a depressive personality. It is an active means of relating to people characterized by manipulateness and hostility. Bonime (1975) later described depression as characterized by aversion to influence, vindictiveness, unwillingness to give gratification, anxiety, guilt, and despair. Depressed persons may also be withdrawn, irresponsible, punitive, unproductive, indecisive, demanding, anorexic, lethargic, and demonstrate helpless behavior.

Beck (1967) conceptualized depression as a feeling or symptom, a syndrome and a clinical entity. Beck proposed that depression has the following five attributes: (a) a

specific alteration in mood such as sadness, loneliness, and apathy; (b) a negative self-concept associated with self-reproaches and self-blame; (c) regressive and self-punitive wishes desires to escape, hide, or die; (d) vegetative changes: anorexia, insomnia, loss of libido; and (e) change in activity level, retardation or agitation. Some of the symptoms of depression are observable behaviors such as, dejected mood, crying spells, suicidal wishes, paralysis of the will, sleep disturbance, feelings of worthlessness, and delusions of crime, poverty, and punishment.

Radloff (1977) defined depression as a clinical disorder recognized by depressive symptomatology, comprised of four dimensions which include (a) depressed affect (blues, depressed, lonely, cry sad), (b) lack of positive affect (hopeless, unhappy), (c) somatic and retarded activity (bothered, appetite, effort, sleep, report inability to get going), and (d) interpersonal (unfriendly, dislike). This definition of depression underlies this study.

Robbins (1993) described depression as a clinical syndrome and a continuum with feelings of sadness or depressed mood on one end to chronic, severe clinical depression on another end. According to Robbins (1993), those with clinical depression experience feelings of being in a black hole. Other symptoms include feelings of hopelessness, deep sadness, guilt and worthlessness, along with loss of interest in normal activities, fatigue, slowed reactions, trouble concentrating and remembering, difficulty sleeping, self reproaches, being self-critical, anorexia, guilt, bulimia, weight loss, and thoughts of death and suicide.

Strauman (2002) also described depression as a clinical disorder, resulting from failure to make progress toward promotion of goals, which produces physiologic, cognitive, and interpersonal consequences. Core symptoms of depression include mood and appetite changes, anhedonia, lack of energy, poor concentration, helplessness, sleep

disturbance, guilt, agitation, and anxiety. Beevers (2005) stated that depression is a disorder of cognitive processing and is characterized by dysphoric mood, negative themes of loss, worthlessness, and defectiveness.

In summary, early theorists have conceptualized depression as an affective reaction (Bibring, 1953), a personality style (Bonime, 1960), a feeling or emotion (Beck, 1967; Robbins, 1993), and a syndrome of symptoms (Beck, 1967; Radloff, 1977; Robbins, 1993). Current theorists more readily recognize depression as a clinical disorder (Beevers, 2005; Strauman, 2002). Depression is recognized by its characteristic affective, cognitive, and physiologic signs and symptoms (Beevers, 2005; Robbins, 1993; Strauman, 2002). The heterogeneity of depression's manifestations is best captured by descriptions of depression as a spectrum disorder, recognized by its symptoms on a continuum from mild sadness to clinically significant depression (Beck, 1967; Radloff, 1977; Robbins, 1993).

Descriptive Studies of Depression in African American Women

Waite and Killian (2007) studied women's depression in a sample of 36 African American women, aged 35 to 45, diagnosed in the past year. In this qualitative analysis, these depressed women reported feeling stressed, angry, irritable, hopeless, grieved, sad, lonely, and exhausted. Other expressions included, crazy, down in the dumps, the devil, being in a black hole, rejection, losing control, pain, drowning, sick and out of balance. Women reported suffering social isolation and being silenced due to feelings of fear, embarrassment, and shame related to the need to keep their depression hidden so as not to appear weak in their culture. Sociocultural expectations regarding the need for Black women to exhibit strength and avoid the appearance of vulnerability contributed to the

inability to recognize, report, and display the signs of depression characteristically displayed by the general population of depressed individuals.

Waite and Killian (2009) again studied 14 low-income African American women, aged 18 to 64, diagnosed with major depressive disorder within the past year. These depressed Black women described feelings of sadness, loneliness, anger, frustration, mistrust, and uncertainty. Depression was also described as an intrinsic feeling of weakness.

Nicoladis et al. (2010) examined the influence of racism, violence, and social context on beliefs about depression, in a sample of 30 low-income African American women via focus group interviews. They reported classic symptoms of depression such as sadness, anhedonia, hopelessness, social isolation, guilt, loss of energy, and suicidality. These women also used words specific to their culture such as oppressiveness, and breaking down.

In summary, above studies show that depression has cognitive, affective, and physiologic manifestations in Black women (Nicoladis et al., 2010; Waite & Killian, 2007, 2009). These manifestations are influenced by socio-cultural expectations which encourage outward displays of strength and avoidance of overt displays of personal weakness in African American women (Nicoladis et al., 2010; Waite & Killian, 2007, 2009).

Descriptive Theories of Self-Esteem

Rosenberg (1965) defined self esteem as a positive or negative attitude toward a particular object, namely the self. It is essentially a feeling of worthiness, that one is good enough. Self-esteem is viewed on a continuum from high to low. Individuals with high self-esteem respect themselves, consider themselves worthy, recognize their

limitations, and expect to grow and improve. Individuals with low self-esteem have self-rejection, self-dissatisfaction, and self-contempt. They lack respect for the self and wish they were someone else. Rosenberg's conceptualization of self-esteem was used in this study.

Branden (1969) defined self esteem as the conviction that one is "competent to live and worthy of living" (p. 104). It is also, according to Branden (1969), the experience that we are "appropriate to life and to the requirements of life" (p. 104). Self-esteem has two aspects (a) a sense of personal efficacy, and (b) a sense of personal worth, self-confidence, and self-respect. This definition therefore combines both competence and worthiness.

Mruk (1995) defined self esteem as "the lived status of one's individual competence and personal worthiness at dealing with the challenges of life over time" (p. 21). This definition of self-esteem includes (a) the relationship between competence and worthiness, (b) the lived quality of self-esteem embodied in the processes and situation of real life for the individual, and (c) the dynamics of self-esteem as stability versus change over time. Mruk (1995) viewed self-esteem as existing on a continuum from high to low which is regarded positively or negatively.

Tafarodi and Milne (2002) distinguished between personal competence and worth when defining self-esteem and proposed two forms of self-esteem, one based on ability (competence) and the other on "worth" or "goodness. Self-competence is the evaluative experience of oneself as a causal agent with efficacy and power. Worthiness is the "valuative experience of oneself as a social object, a good or bad person" (Tafarodi & Milne, 2002, p. 444).

In summary, early theoretical conceptualizations of self-esteem have recognized its affective dimension as it was defined as feelings of worthiness (Rosenberg, 1965).

Later theorists began to recognize not only the affective, but the behavioral component of self-esteem as well by emphasizing convictions concerning the interplay of competence and feelings of worthiness in the conceptualization of self-esteem (Branden, 1969; Mruk, 1995; Tafrodi & Milne, 2002).

Explanatory Theories of Self-Esteem and Depression

Beck's (1967) cognitive theory of depression proposed that depression results partly when a person has a pattern of viewing himself in a negative way, such as being deficient, inadequate, unworthy, worthless or undesirable, and attributes bad experiences to internal defects. Beck proposed that negative views of the self, that is, low self-esteem, and negative self-referents lead to depression. Beck (1967) stated, "the vulnerability of the depression prone person is attributable to the constellation of enduring negative attitudes about himself ...therefore situations that might be expected to lower an individual's self-esteem are frequent precipitators of depression" (p. 279). As Beck further explained, activation of a negative self-concept lowers self esteem and leads to typical depressive symptomatology.

Coopersmith (1967) posited that persons with low self-esteem would be likely to carry signs of depression. Persons with low self-esteem exhibit more feelings of depression more frequently than persons with high self-esteem. Since persons with low self-esteem evaluate themselves as inferior, no matter how high their attainments, they are more likely to report depression because they view themselves as unsuccessful and unworthy.

Smelser (1989) stated, "diminished self-esteem...results in powerlessness, and depression" (p. 6). Persons with low self-esteem do not appreciate themselves and their worth. They have a negative attitude toward their own qualities and abilities, and a sense of powerlessness and incompetence as they are unable to organize their daily activities,

resulting in self-depreciation, helplessness, and depression.

Harter (1999) proposed that “low self-worth results in a mood state of depression” (p. 197). He explained that low levels of self-worth can provoke a powerful emotional reaction resulting in depression. According to Harter (1999), cognitions about the self directly impact affect so much so that “low self-worth would provoke feelings of depression” (p. 200).

Crocker and Wolfe (2001) proposed that self-worth in concert with negative contingency-relevant life events lead to changes in self-esteem over time. These changes in self-esteem lead to increases in depressive symptoms.

Epstein (2006) also proposed that “a chronic low level of self-esteem is a direct source of sadness and depression” (p.72). Low self-esteem results in negative affect and causes one to give up rather than strive to succeed, resulting in depression and its self-defeating behaviors.

In summary, explanatory theories suggest that self-esteem’s negative cognitive, emotional, and behavioral manifestations contribute to depressive symptoms (Epstein, 2006; Harter, 1999). Low self-esteem is conceptualized as a vulnerability factor which leads to depression (Beck, 1967). Individual’s low estimation of their value and abilities lead to feelings of inferiority, helplessness, powerlessness, incompetence, self-depreciation, cognitive distortions and negative emotions, all of which are symptoms of depression. These negative emotions and cognitions, along with self-defeating behaviors, serve to precipitate and perpetuate depressive symptoms (Crocker & Wolfe, 2001; Epstein, 2006; Harter, 1999; Smelser, 1989).

Empirical Studies of Self-Esteem and Depression

Lutenbacher (2002) examined the relationship between self-esteem and depression in a sample of 53 low income single mothers, aged 61 to 41. The women

responded to the Rosenberg Self-Esteem Scale (RSES) and the Centers for Epidemiological Studies Depression (CES-D) scale. Results indicated that self-esteem was negatively related to levels of depressive symptoms ($r = -.51, p < .001$) in this small sample of women.

Peden, Rayens, Hall, and Grant (2004) examined the relationship between depression and self-esteem in a sample of 205 low-income single mothers whose average age was 27 years ($SD = 5.8$). These mothers responded to the CES-D scale, the Beck Depression Inventory (BDI) and the RSES. Results revealed that self-esteem was negatively associated with depressive symptoms in these mothers ($r = -.70, p < .0001$) using the CES-D scale, and the BDI ($r = -.72, p < .0001$).

Hatcher (2008) examined predictors of depression in a sample of 98 low-income African American single mothers whose mean age was 26.4 ($SD = 5.6$), via secondary analyses of existing survey data. They responded to the RSES and the BDI. The results showed that self-esteem was negatively correlated with depressive symptoms ($r = -.67, p < .001$).

Hatcher (2009) examined the relationship between self-esteem and depression in a sample of 98 poor African American single mothers whose mean age was 26.4 ($SD = 5.6$). They responded to the RSES and the BDI. The results revealed that self-esteem was negatively associated with depressive symptoms ($r = -.67, p < .01$).

In summary, empirical studies show that in low-income single mothers, depression is negatively associated with self-esteem, (Hatcher, 2008, 2009; Lutenbacher, 2002; Peden et al., 2004). The magnitude of the correlations indicate a fairly strong relationship between the two variables lending empirical support for the theory linking

self-esteem to depression.

Descriptive Theories of Anger

Novaco (1975) defined anger as a strong emotional response to provocation that has identifiable autonomic and central nervous system components and cognitive determinants. Anger is an internal process and an arousal state which is assessed by inferences from somatic and behavioral manifestations, such as tight muscles, grinding teeth, piercing stares, headaches, loud voices, smashed furniture, slammed doors, shouting, and heightened state of arousal.

Spielberger and Sydeman (1988) defined anger as both an emotional state and a personality trait. For Spielberger (1999), state anger is defined “as psychobiological state or condition consisting of subjective feelings of anger that vary in intensity, from mild irritation or annoyance to intense fury and rage, with concomitant activation or arousal of the autonomic nervous system” (p. 302). This type of anger fluctuates over time depending on the provoking situations and its intensity varies as a function of perceived injustice, being attacked or treated unfairly by others, or frustration resulting from barriers to goal-directed behavior (Spielberger, 1999). Trait anger is defined as individual differences in the disposition to perceive a wide range of situations as annoying or frustrating and by the tendency to respond to such situations with elevations in state anger” (Spielberger, 1999, p. 1). Persons with high trait anger perceive a wider range of situations as anger provoking, annoying, irritating, or frustrating than persons low in trait anger and they experience more frequent and intense elevations of state anger. Anger expression is another component of anger that involves both the frequency of the experience of angry feelings (state anger), and the manner in which these feelings are expressed. As per Spielberger (1999), some persons express anger outwardly in

aggressive behavior (Anger-Out), while others hold in or suppress angry feelings (Anger-In). Spielberger's conceptualization of state anger was used in this study.

Beck (1999) viewed anger as a subjective feeling which varies from mild irritation to rage. Anger is expressed somatically in facial expressions, tightening of muscles, and racing pulse as part of the fight or flight reaction. It is a stimulus to alert a person to a threat and mobilizes a person to retaliate against an offender who is perceived to have unjustly committed a wrong.

Hareli and Weiner (2002) defined anger as an emotion and a value judgment or accusation based on the idea that "another person should have or could have done otherwise." (p. 188). It is therefore perceived cognitively and expressed as a moral judgment due to a sense of responsibility inferred upon the recipient of the anger.

Digiuseppe and Tafrate (2007) defined anger as "a subjectively experienced emotional state with high sympathetic autonomic arousal" (p. 21) elicited by perceived threats to the person. Anger has attributional, informational, and evaluative cognitions to motivate antagonism to thwart off or retaliate against the source of threat. State anger is assessed via facial or postural gestures, vocal inflections, aversive verbalizations, and aggressive behavior which vary according to learned history, social roles, and environmental contingencies.

In summary, anger has been consistently conceptualized as an emotional state of arousal producing cognitive and behavioral manifestations (Beck, 1999; Digiuseppe & Tafrate, 2007; Novaco, 1975; Spielberger, 1999). Anger has been recognized as both a state and a trait condition (Digiuseppe & Tafrate, 2007; Spielberger, 1999). Anger is an uncomfortable affective experience with the potential to arouse the central nervous system (Beck, 1999; Spielberger, 1999). Anger also has a cognitive moral component involving a value judgment that exists with the emotional state (Hareli & Wiener, 2002).

Explanatory Theories Self-Esteem and Anger

Fernando (1984) posited that the lowering of self-esteem results in symptoms of anger. In turn, Fernando (1984) further proposed that this release of emotions can ultimately lead to depression.

Tavris (1989) posited that women express anger principally due to threats to self-esteem. According to Tavris, women become angry about condescending treatment, injustice or insults, and attacks to self-esteem.

According to Lazarus (1991), perceived threats to a person's self-esteem arouse anger. When a person's ego-identity is assaulted or threatened the condition for anger is set. Anger therefore depends on a personal slight or demeaning offense to the ego.

Baumeister, Smart, and Boden (1996) proposed that threats to self-esteem elicit anger when a person refuses to internalize unflattering evaluations. As explained, discrepancies between favorable views of the self, which are unstable and uncertain, and negative evaluation by others, threaten the ego. When these negative appraisals by others are rejected, negative emotions toward the source of the threat cause anger.

Beck (1999) posited that threats to self-esteem can result in anger. According to Beck, a change in self-esteem triggers an emotional response such as anger. Events that devalue our personal domain make us feel angry due to the vital importance of our self-esteem. When traits or personality characteristics that we deem important to us are devalued (e.g. strength, competence, social competence), our self-esteem is affected and produces more anger.

According to Clark (2002), threats to self-worth are a prime source of anger. Individuals respond with anger when they think that others are attempting to lower their self-worth or self-esteem.

In summary, explanatory theories suggest that threats to self-esteem result in

anger as an emotional reaction (Baumeister et al., 1996; Beck, 1999; Lazarus, 1991).

Anger results when one perceives negative evaluations, attacks to self-worth or insults regarding the self, or maltreatment from others (Beck, 1999; Clark, 2002; Tavris, 1989).

Thus lowering of self-esteem leads to anger (Fernando, 1984).

Empirical Studies Linking Self-Esteem and Anger

Menzel (1998) examined the relationship between self-esteem and anger in a small sample of 48 adult patients, aged 18 to 80. These patients responded to the RSES and 12 items measuring anger from the Emotion Scale. Results revealed that self-esteem was negatively associated with anger ($B = -.37, p < .01$).

Furman and Thompson (2002) examined the relationship between self-esteem and anger in a sample of 144 female undergraduate students, aged 17 to 55. These students responded to the RSES and a Visual Analogue Scale measuring state anger. Self-esteem was negatively associated with state anger in this sample ($B = -.18, p < .05$).

Lutenbacher (2002) examined the relationship between self-esteem and anger in a small sample of 53 low-income single mothers, aged 16 to 41. These mothers responded to the RSES and the Spielberger State-Trait Anger Expression Inventor (STAXI). Self-esteem was negatively correlated with expressions of anger ($r = -.40, p < .001$).

Fornells-Ambrojo and Garety (2006) examined the relationship between self-esteem and anger in a small sample of 20 adults with psychiatric disorders. These adults responded to the RSES scale and the Novaco Anger Scale. Results revealed that self-esteem was negatively correlated with arousal anger ($r = -.51, p < 0.001$).

In summary, the empirical evidence shows that self-esteem is negatively associated with anger in adult clinical (Fornells-Ambrojo & Garety, 2006; Menzel, 1988) and nonclinical (Furman & Thompson, 2002; Lutenbacher, 2002) samples. The

correlation coefficients are significant lending support for the theoretical links; however, the sample sizes are small. This relationship needs to be examined in larger sample sizes, as was done in this study.

Explanatory Theories of Anger and Depression

According to Tavris (1989) depression may be the sequel to anger. As Tavris explained, when anger is not successful at averting danger or removing obstacles and does not restore a sense of control, a person can become apathetic leading to depression. If goals are never reached, one may feel depressed.

According to Greenberg and Paivio (1997), chronic anger can cause major psychological problems including depression. When primary anger is not expressed effectively one can collapse into depression. Therefore, chronic anger can generate feelings of depression.

According to Robbins (2000), anger and disappointment with oneself often plays a part in bringing on depressed feelings. As Robbins explained, anger often occurs within the context of other emotions and when a person becomes angry with himself or herself for whatever cause, there is an increased risk for feelings of depression.

In summary, these theories suggest that chronic anger and anger inappropriately expressed can lead to depressive symptoms (Greenberg & Paivio, 1997; Tavris, 1989). In addition, anger at oneself can result in feelings of depression, and anger that does not achieve its intended purpose, leads to depressive symptoms (Robbins, 2000; Tavris, 1989).

Empirical Studies of Anger and Depression in Women

Lutenbacher (2002) examined the relationship between anger and depression in a small sample of 53 low income single mothers, aged 16 to 41. Participants responded to the STAXI and the CES-D scale. State anger was positively correlated with depressive

symptoms ($r = .21, p < .001$).

Bruehl, Burns, Chung, Ward, and Johnson (2002) examined the relationship between anger and depression in a small sample of 43 adults with chronic benign low back pain ($M = 38.2$ years) and 45 adults with no back pain ($M = 31.8$ years). Participants responded to The STAXI and the BDI. Results revealed that anger expression was positively associated with depressive symptoms in the entire sample ($r = .39, p < .001$).

Tan and Carfagnini (2008) examined the relationship between anger and depression in a small sample of 56 women ($M = 36.34$ years), seventeen of whom were being treated for depression. They responded to the BDI- II and the STAXI. Results revealed that anger out (anger-out) was positively associated with depressive symptoms ($r = .34, p < .01$).

Jackson and Emery (2011) examined the relationship between anger and depression in a small sample of 35 women ($M = 57$ years) with congestive heart failure. Participants responded to Spielberger's Anger Expression Scale and the CES-D scale. The results revealed that anger expression is positively associated with depressive symptoms in these women ($r = .61, p < .001$).

In summary, these studies show that anger is positively associated with depressive symptoms in women (Jackson & Emery, 2011; Lutenbacher, 2002; Tan & Carfagnini, 2008). These correlations are moderately strong in clinical (Bruehl et al., 2002; Jackson & Emery, 2011; Tan & Carfagnini, 2008) and non-clinical (Bruehl et al., 2002; Lutenbacher, 2002) samples, giving empirical support for the theory linking anger and depression.

Theories of Perceived Racism

According to McNeilly et al. (1996), racism is defined as “a belief or attitude that some races are superior to others and discrimination based on such a belief...attitudinal and behavioral manifestations of the belief in the inherent inferiority of individuals of certain ethnicities” (p. 155). Perceiving racism is therefore a multidimensional experience which involves (a) perceiving racist events, (b) responding emotionally to the event, (c) responding behaviorally to that event, and (d) interpreting the event cognitively within the framework of one’s attributional belief system. One perceives racism in different domains including employment, academic, public, and statements by others.

Brondolo, Kelly et al. (2005) defined perceived racism as unfair treatment received because of one’s ethnicity (race or culture of origin). Perceived racism is conceptualized as a stressor and includes being threatened, harmed, shunned or excluded because of one’s ethnicity (groupings of individuals based on notion of race or culture of origin). Perceived racism is multi-dimensional and involves perceiving racist events and responding affectively and physiologically. This conceptualization of perceived racism was used in this study.

Landrine and Klonoff (1996) defined perceived racism (racist discrimination) as culturally specific negative life events (i.e., as culturally specific stressors) that happen to African Americans because they are African American. These events occur frequently or infrequently, and are acute (recent) or chronic (lifetime). Perceiving racial discrimination is a multidimensional experience which is perceived acutely (recently) and chronically (over a lifetime).

According to Dailey (2008), perceived racism is a subjective experience. Perceiving racism is a subjective interpretation that an event, situation, or experience is negative, unjust, or undignified and is occurring solely due to one’s racial background.

Perceiving racism is a stressful experience which can lead to adverse psychological health outcomes such as depression (Dailey, 2008). Self-esteem is thus a personal resource which mediates the relationship between perceived racism and psychological health outcomes such as depression.

In summary, perceiving racism is currently viewed as a multidimensional emotional, behavioral, and cognitive experience (Brondolo, Kelly et al., 2005; Dailey, 2008; Landrine & Klonoff, 1996; McNeilly et al., 1996). It is subjective and conceptualized as a stressor which can occur frequently in the present or chronically over one's lifetime (Brondolo, Kelly et al., 2005; Daily, 2008; Landrine & Klonoff, 1996).

Explanatory Theories Linking Perceived Racism and Self-Esteem

Several theorists have posited that perceiving racism is antecedent to low self-esteem. Fernando (1984) suggested that blows to self-esteem can arise from racism. Fernando (1984) further explained, "devaluation of person's culture is incorporated by the person to give low self-esteem" (p. 45). Additionally, in a racist society, the individuals are devalued including their skin color, mannerisms, and way of life. When these negative cultural values are perceived and incorporated, the individual may "hate" their ethnic identity and have low self-esteem. Therefore, perceptions of racist attacks, rejection, obstacles, and acceptance of racial stereotyping leads to low self-esteem which in turn contributes to depression (Fernando, 1984).

According to Wade (1987), Black racial stigma and "institutional racism have a profound effect on Blacks' abilities to achieve and sustain a true sense of self-worth" (p. 171). She further explained that racism, and the internalization of racist stereotypes, such as being lazy, inferior, incompetent, childish, oversexed, troublesome, and low-class, causes a sense of inherited worthlessness and a sense of devaluation (low self-esteem) in interactions with Whites.

Williams and Williams-Morris (2000) proposed a relationship between perceiving racism and self-esteem. They discussed internalized racism, which refers to the acceptance, by minority groups, of the negative societal beliefs regarding their inferiority and stereotypes about themselves which they perceive. In a racist society, Blacks' acceptance of negative cultural stereotypes and unfavorable evaluations of their culture can attack the self-worth and undermine the importance of the existence of their culture. According to Williams and Williams-Morris (2000), this "devaluation of blackness...can lead to the perception of self as worthless" (p.255), which is essentially low self-esteem.

In summary, theorists suggest that perceiving racism decreases self-esteem via internalization of negative stereotypes and expectations (Fernando, 1984; Wade, 1987; Williams & Williams-Morris, 2000) and devaluation of a person's identity and culture (Fernando, 1984; Wade, 1987; Williams & Williams-Morris, 2000). Perceiving and accepting racist stereotypes attacks the self-worth resulting in low evaluations of oneself and hatred of one's ethnic identity (Fernando, 1984; Wade, 1987).

Empirical Studies of Perceived Racism and Self-Esteem

Jones, Cross, and Defour (2007) examined the relationship between racism stress and self-esteem in a sample of 262 young adult college Black women ($M = 22.84$ years). The participants responded to the RSES and the Schedule of Racist Events. Racism stress appraisal was weakly and negatively correlated with self-esteem ($r = -.15, p < .05$) in these women.

Rusch, Lieb, Bohus, and Corrigan (2006) examined the relationship between perceived discrimination and self-esteem in a small sample of 60 women, aged 18 to 50, with borderline personality disorder. Subjects responded to Link's Perceived Stigma Questionnaire and the RSES. Results revealed that perceived discrimination was negatively associated with self-esteem in this sample ($B = -.19, p = .04$).

Bourguignon, Seron, Yzerbyt, and Herman (2006) examined the relationship between perceived racial discrimination and self-esteem in a sample of 269 African immigrants ($M = 33$ years). They responded to the RSES and a 4-item index of perceived group discrimination. Perceived personal discrimination was negatively related to self-esteem ($B = -.20, p < 0.01.$)

Liang and Fassinger (2008) examined the relationship between perceived racism stress and self-esteem in a sample of 134 Asian American college students, aged 17 to 28. They responded to the Asian American Racism Related Stress Index and to self-esteem problem scale of the College Adjustment Scale. Results revealed that perceived racism stress was positively related to self-esteem problems in this sample ($r = .28, p < .001$).

Seaton and Yip (2009) examined the relationship between perceived racial discrimination and self-esteem in 252 urban African American adolescents, aged 13 to 18. They responded to the Index of Race-Related Stress and the RSES. Perceptions of collective/Institutional racism was weakly and negatively related to self-esteem ($r = -.17, p < .05$).

In summary, the above studies provide some empirical support for the propositions linking perceived racism and low self-esteem. Perceiving racism is weakly and negatively related to self-esteem in minorities (Bourguignon et al., 2006; Liang et al., 2004;) and in women, including adult and adolescent Black females (Jones et al., 2007; Rusch et al., 2006; Seaton & Yip, 2009).

Explanatory Theory Linking Perceived Racism and Anger

Several theorists proposed that perceiving racism leads to anger. Clark, Anderson, Clark, and Williams (1999) viewed racism as a perceived stressor. Many psychological stress responses may follow the perception of racism including anger.

According to Krieger (1999), perceiving or anticipating racial discrimination

provokes anger which can be viewed as a socially-inflicted mental trauma. Harrell (2000) viewed anger as an emotional response to racism that occurs subsequent to the stressful experience.

According to Feagin and McKinney (2003), anger is an outcome of perceived racism. As Feagan and McKinney (2003) explained, “demoralization, depression, anxiety and anger over everyday discrimination are to be expected under circumstances faced by African Americans” (p. 54). Anger over everyday racism stems from social situations perceived as racist events and a lifetime exposure with such events. Anger over racial mistreatment is also fueled by racist incidents that happen to individuals, friends, family members, and Black Americans as a group, all of which multiply racially-related stress for the individuals. Negative societal images, stereotypes, and racist statements with derogatory references can trigger painful individual and collective memories for Blacks resulting in anger and rage. Paradies (2006) also proposed that anger is an affective emotional response to racism.

In summary, theory suggests that anger is an emotional response to perceiving racism (Clark et al., 1999; Paradies, 2006). Perceiving racism is a stressor that causes persons to react with either outward displays of anger or inhibition of anger depending on one’s method of emotional coping (Clark et al., 1999; Harrell, 2000). Perceiving or anticipating racism provokes anger because these perceptions are painful and mentally traumatizing (Feagin & McKinney, 2003; Krieger, 1999).

Empirical Studies of Perceived Racism and Anger

Steffen, McNeilly, Anderson, and Sherwood (2003) examined the relationship between perceived racism and anger in a sample of 69 African American adults, aged 25 to 44. They responded to the Perceived Racism Scale and the Multidimensional Anger Inventory. Perceived racism was positively correlated with anger expression (anger-in: r

= .29, $p < .05$).

Brondolo, Thompson et al. (2005) examined the relationship between perceived discrimination and anger expression in a sample of 420 Black and Latino adults. Participants responded to the Perceived Ethnic Discrimination Questionnaire (PEDQ) and the STAXI. The results revealed that perceived ethnic discrimination was positively correlated with anger expression (Anger Out: $r = .29$, $p < .0001$); Anger In: $r = .30$, $p < .001$).

Broudy et al. (2007) examined the relationship between perceived discrimination and anger in a sample of 113 multi-ethnic adults aged 18 to 60 ($M = 35.3$ years, $SD = 10.8$). They responded to the PEDQ and an ambulatory monitoring diary measuring moods and feelings. Results revealed that perceived discrimination was positively related to ratings of anger ($B = .39$, $p < 0.0001$).

Brondolo et al. (2008) examined the relationship between perceived racism and anger in a sample of 362 adult minorities, aged 24 to 65 ($M = 40$ years). They responded to the PEDQ Community Version and measured their subjective emotions with electronic diaries every 20 minutes. Hierarchical regression analysis showed that perceived racism was positively associated with daily anger ($B = .26$, $p < .001$).

In summary, empirical studies show that perceived racism is positively correlated with anger in African Americans (Steffen et al., 2003), Blacks (Brondolo, Thompson et al., 2005), and multi-ethnic (Brondolo et al., 2008; Broudy et al., 2007) adult samples. The correlations are relatively weak lending some support for the theoretical link between perceived racism and anger.

Descriptive Theories of Perceived Stress

Lazarus and Folkman (1984) defined psychological stress as “a relationship between the person and the environment that is appraised by the person as taxing or

exceeding his or her resources and endangering his or her well-being” (p. 21). Stress is subjectively perceived experience. The person-environment relationship is emphasized and a cognitive appraisal of an event is involved in determining the degree to which stress is perceived.

Based on a synthesis of ideas from stress theories, Cohen, Kamarck, and Mermelstein (1983) defined perceived stress as “the degree to which situations in one’s life are appraised as unpredictable, uncontrollable and overloading” (p. 385). This conceptualization of stress was used in this study.

Brown and Harris (1989) viewed stress as life events that cause disruption or promise of disruption on an individual’s activities. Stress is defined externally in terms of the behavioral reactions and internally in terms of the cognitive appraisal of the meaning of the particular event which can have effects perceived negatively or positively. Bodily changes such as neuro-endocrine changes, blood glucose levels, and increased heart rate are signs of stress occurring from these events.

McEwen (1998) defined stress as experiences and situations including major life events, trauma, abuse, public speaking and experiences related to the environment in the home, workplace, and neighborhood. As per McEwen (1998), these stressful experiences and situations, if perceived as threatening, produce specific psychological and physiologic responses, such as flight or fight, cowering, heart palpitations, and elevated cortisol levels in order to achieve stability.

McEwen (2006) later defined stress as events, situations, or challenges which, when interpreted by the brain as threatening, result in physiologic and behavioral responses. It is essentially a subjective condition of mind-body interaction.

In summary, theorists have conceptualized stress as a relationship between the person and his environment in the social world appraised as stressful (Lazarus &

Folkman, 1984). Other theorists view situations, events or experiences as stressful (Brown & Harris, 1989; Cohen et al., 1988; McEwen, 1998, 2006). Despite objective physiological and psychological indicators of stress, stress is perceived subjectively as situations are appraised and evaluated to determine their degree of unpredictability, uncontrollability, and load as uniquely perceived by each individual (Lazarus & Folkman, 1984; McEwen, 2006).

Explanatory Theories Linking Stress and Depression

According to Beck (1967), “depression often seems to arise from a series of stressful situations that impinge on the specific vulnerability rather than a single situation” (p. 280). Depressive symptoms are activated by specific stressors in the presence of vulnerability factors (i.e., negative attitudes about self, world and future) developed in childhood and adolescence. These vulnerability factors sensitize a person to certain types of traumatic life situations that are triggered by specific stressors that activate depressive symptoms.

Brown and Harris (1989) posited that stressful life events lead to depression. They further explained, in response to a loss, general feelings of hopelessness may occur resulting in the central feature of the depressive disorder. Therefore, stressful life events may trigger depression.

Post (1992) proposed that the first episodes of depressive disorders are associated with major psychosocial stressors. Hammen (2000) also proposed that stress leads to depression. When faced with a stressor, especially loss or failure, individuals with vulnerability factors interpret stressful events as evidence of unworthiness which precipitates depression.

Monroe and Harkness (2005) posited that both major and minor stressful events lead to depression. They stated that major stressful events are essential for the initial and

early episodes of depression. McEwen (2006) stated that common stressors occurring over a long period of time causes behavioral responses, one of which is depression. Being “stressed out” may cause depression.

In summary, explanatory theories suggest that life stressors have the potential to precipitate depressive symptoms (Beck, 1967; Brown & Harris, 1989; McEwen, 2006; Monroe & Harkness, 2005). Individual vulnerabilities impacting cognitive evaluation, appraisal and interpretation (Beck, 1967) of stressful situations are subjective and determine the onset, course, and duration of depression (Hammen, 2000; Monroe & Harkness, 2005; Post, 1992).

Empirical Studies of Stress and Depression in Women

Peden et al. (2004) examined the relationship between perceived stress and depression in a sample of 205 low income single mothers. Participants responded to the CES-D scale and the Everyday Stressors Index (ESI). Chronic everyday stress was positively associated with depressive symptoms ($r = .69, p < .0001$).

Artinian, Washington, Flack, Hockman, and Jen (2006) examined the relationship between perceived stress and depression in a sample of 245 hypertensive African American women. They responded to the Perceived Stress Scale and the CES-D scale. Stress was positively correlated with depressive symptoms ($r = .69, p < .001$).

Hatcher (2008) examined predictors of depression in a sample of 98 African American low income single mothers via secondary analyses of existing survey data. Subjects responded to the ESI and the BDI. The results revealed that chronic stressors were positively associated with depressive symptoms ($r = .74, p < .001$).

Odom and Vernon-Feagans (2010) examined the relationship between stressful negative life events and depression in a sample of 414 low income African American mothers, aged 17 to 66. They responded to the CES-D scale and the Negative Life

Events Checklist which measures stressful events. Negative life events were positively correlated with depressive symptoms after 15 months ($r = .49, p < .001$) and after 24 months ($r = .28, p < .001$).

In summary, studies of low-income single African American women indicated a significant relationship between perceived stress and depression (Hatcher, 2008; Odom & Vernon-Feagan, 2010; Peden et al., 2004). A relationship was also indicated in African American women with chronic disease (Artinian et al., 2006). These findings lend strong support to theories proposing a link between these variables.

Explanatory Theories Linking Stress and Self-Esteem

According to Beck (1967), a person responds to specific stressors such as being deprived, thwarted, or rejected with ideas of personal deficiency. These stressful situations tend to lower an individual's self-esteem, including the activation of cognitive schemas emphasizing negative ideas about the self, world and future.

Wills and Langner (1980) stated that stressful situations present a threat to self-esteem. This is because judgments of low self-esteem reflect the consequences of an individual's daily interactions with people in the larger society.

According to Mruk (1995), stress that is great and prolonged can challenge one's sense of worthiness. There are possibly negative effects of stress (or threat) on our perceptions of ourselves and the world. People with high self-esteem are protected from the effects of minor stresses. Persons with low self-esteem are more susceptible to disruption from even the mildest of life's challenges.

According to Beck (1999), when the impact of negative events is strong, our view of ourselves may shift to categorically negative self-appraisals resulting in a pronounced drop in self-esteem. These negative events can be physical or emotional.

According to Crocker and Wolfe (2001), unstable self-esteem can be caused by

experiencing or perceiving positive and negative events in domains contingent upon self-worth. Therefore, instability of self-esteem can result from life events. Drops in self-esteem can result from single large devastating negative events in a domain of contingency such as loss of a job or a spouse undesirably. Minor repeated drops in self-esteem can result from experienced negative events such as repeated rejections in relationships or job searches.

In summary, theorists suggest that stressors, such as stressful situations, present a threat to self-esteem since these situations have the potential to threaten one's sense of worthiness (Mruk, 1995; Wills & Langner, 1980). These stressful situations or negative events lead individuals to have negative ideas about themselves and their overall future resulting in low self-esteem (Beck, 1967, 1999; Crocker & Wolfe, 2001).

Empirical Studies of Stress and Self-Esteem in Women

Lutenbacher (2002) examined the relationship between perceived stress and self-esteem in a small sample of 53 low income adult single mothers, aged 16 to 41. They responded to the ESI and the RSES. The results showed that everyday stressors were negatively related to self-esteem ($r = -.35, p < .01$).

Lo (2002) examined the relationship between stress and self-esteem in a sample of 333 nursing students. The students responded to the General Health Questionnaire to measure chronic and transient stress and the RSES, whereby higher scores indicate negative self-esteem. Results revealed that chronic stressors were positively associated with negative self-esteem ($r = .49, p < .05$) and the same with transient stressors ($r = .41, p < .05$).

Peden et al. (2004) examined the relationship between stress and self-esteem in a sample of 205 low income adult single mothers. They responded to the ESI and the RSES. Results revealed a negative correlation between chronic everyday stress and self-

esteem ($r = -.58, p < .0001$).

In summary, empirical studies show that self-esteem is negatively associated with stress in adult women, including single mothers (Lo, 2002; Lutenbacher, 2002; Peden et al., 2004). These correlations were moderate to strong lending support to theories proposing a link between stress and self-esteem.

Explanatory Theories Linking Stress and Anger

According to Lazarus (1966), anger is one of the disturbed affects that represent significant categories of stress responses. Psychological stress results in negatively toned affective states like anger. As per Lazarus (1966), when stressful situations occur, a cognitive appraisal of the threat takes place and anger ensues.

According to Averill (1982), those who experience psychological stress may react in a violent rage and with anger. The pressure to abstain from aggressive acts as opposed to defending oneself aggressively when under threat, creates tension. The stress of provocation overwhelms these prohibitions against aggression resulting in anger and possibly violence.

Novaco (1985) proposed that anger is cognitively mediated by primary appraisal of the degree to which stressors are perceived as threatening. This appraisal of threat regarding stressful situations contributes to the occurrence of anger. Anger is therefore a stress reaction or an arousal state triggered in response to perceived environmental demand.

According to Berkowitz (1998), persons exposed to unpleasant stressful conditions may experience angry feelings. Berkowitz (1998) states that stressful conditions can “activate the affectively generated, fight-related syndrome” (p.51) and a

“connected network of angry feelings” (p. 51).

Berkowitz (2003) stated that unpleasant, social stresses can generate anger. In addition, Berkowitz and Harmon-Jones (2004) stated that aversive conditions generate intense negative affect activating components of the anger-affective aggressive syndrome.

In summary, theorists suggest that anger is a reaction to stressful events especially when they are perceived as threatening (Averill, 1982; Lazarus, 1966; Novaco, 1985). These feelings are generated when unpleasant stressful situations and events activate the neurological networks producing angry feelings (Berkowitz, 1998, 2003).

Empirical Studies of Stress and Anger

Broman and Johnson (1988) examined the relationship between stressful life events and anger in a nationally representative sample of 713 Black adults, aged 18 years or older. They responded to a survey with three questions measuring outward anger expression and a stress index containing questions measuring the frequency with which stressful life events were being experienced. Regression analysis revealed that stressful life events was positively related to anger expression in this sample ($B = .09, p < .01$.)

Lutenbacher (2002) examined the relationship between stress and anger in a small sample of 53 low income adult single mothers, aged 16 to 41. They responded to the ESI and The STAXI. Results showed that mothers with lower levels of everyday stressors had lower overall expression of anger ($r = .38, p < .001$).

Rodriquez and Richardson (2007) examined the relationship between stress and anger in a sample of 115 community dwelling parents of young children. They responded to the Parenting Stress Index and the STAXI. Results showed that parenting

stress was positively associated with anger expression ($r = .39, p < .001$).

Bodenmann, Meuwly, Bradbury, Gmelch, and Ledermann (2010) examined the relationship between stress and anger in a sample of 317 adult men and women. They responded to Bodenmann's General Level of Stress Scale and the Multidimensional Anger Inventory. Results showed that stress was positively associated with anger ($r = .44, p < .05$).

Sprague, Verona, Kalkhoff, and Kilmer (2011) examined the relationship between stress and anger in a small sample of 51 community members and another sample of 181 undergraduate college students. The community sample responded to the Social Readjustment Rating Scale to measure perceived stress and the college student sample responded to the Brief College Student Hassles Scale. Both samples responded to the Spielberger State Anger Scale. Results revealed that stress was positively related to state anger in the community ($r = .29, p < .05$) and college sample ($r = .43, p < .01$).

In summary, these empirical studies show that perceived stress is positively correlated with anger in adults, including Black adults (Broman et al., 1988), women (Lutenbacher, 2002), and adult parents of young children (Rodriguez & Richardson, 2007). Most of the correlations were moderate thereby lending support for the theories proposing links between these variables (Bodenmann et al., 2010; Sprague et al., 2011).

Theoretical Rationale

Depression is a clinical disorder recognized by its symptomatology (Radloff, 1977; Strauman, 2002). Depression is characterized by a depressed affect, lack of positive affect, somatic and retarded activities and interpersonal/social disturbances (Radloff, 1977). In African American women, symptoms of depression are also

expressed somatically, affectively, and interpersonally/socially as fear, shame, helplessness, fatigue, slowed reactions, sadness, guilt, social isolation and suicidality (Nicoladis et al., 2010; Waite & Killiam, 2007, 2009).

Self-esteem has been theorized to have a direct effect on depression. Self-esteem is a positive or negative attitude towards the self (Rosenberg, 1965). Theorists have postulated that self-esteem leads to depression when one develops a pattern of viewing oneself in a negative way (Beck, 1967), as unsuccessful and unworthy (Coopersmith, 1967), and that chronic low self-esteem is a direct source of depression (Epstein, 2006). Empirical studies have provided support for the theorized relationship between self-esteem and depression in low-income single mothers (Lutenbacher, 2002; Peden et al., 2004), including Black low-income mothers (Hatcher, 2008; 2009). Based on theory and previous research, low self-esteem is hypothesized to be negatively related to depressive symptoms in Black single mothers.

Self-esteem has been theorized to have a direct effect on anger. Anger is a subjectively experienced state (Diguiuseppe & Tafrate, 2007; Spielberger & Sydeman, 1988), which is a response to provocation (Novaco, 1979), elicited by perceived threats to a person (Diguiuseppe & Tafrate, 2007). Theorists have linked self-esteem with anger, suggesting that threats to an individual's self-esteem can arouse anger as an emotional response (Baumeister et al., 1996; Beck, 1999; Lazarus, 1991) and that, in women, anger is expressed due to insults or attacks on self-esteem (Tavris, 1989). Empirical studies have supported a negative association between self-esteem and anger in adults, including single mothers (Fornells-Ambrojo & Garety, 2006; Fuman & Thompson, 2002; Lutenbacher, 2002; Menzel, 1998). Based on theory and previous research, low self-esteem is hypothesized to be negatively related to anger in Black single mothers.

Anger has been theorized to have a direct effect on depression. When anger is prolonged and not expressed effectively feelings of depression are generated (Greenberg & Paivio, 1997; Tavis, 1989). Several studies have found positive associations between anger expression and depression in women (Bruehl et al., 2002; Jackson & Emery, 2011; Tan & Carfagnini, 2008), including associations between state anger and depression in single mothers (Lutenbacher, 2002). Based on theory and previous research, anger is hypothesized to be positively related to depression in Black single mothers. Further, because self-esteem has a direct effect on anger and because anger has a direct effect on depression, self-esteem has an indirect effect on depression through anger.

Perceived racism has been theorized to have a direct effect on self-esteem. Perceived racism is a culturally specific stressor (Landrine & Klonoff, 1996), and a subjective, multidimensional experience involving the perception of negative life events and unfair treatment received because of one's ethnicity (race or culture of origin) (Brondolo, Kelly et al., 2005; Landrine & Klonoff, 1996). Theorists have postulated that perceiving racism may cause emotional, cognitive, and behavioral reactions (Williams & Williams-Morris, 2000), causing a sense of devaluation (Fernando, 1984), which results in the lowering of an individual's self-worth (Wade, 1987). Empirical studies have found negative associations between perceived racism and self-esteem in adult women including Black adult and adolescent women (Bourguignon et al., 2006; Liang & Fassinger, 2008; Rusch et al., 2006). Based on theory and previous research, perceived racism is hypothesized to be negatively related to self-esteem in Black single mothers.

Perceiving racism has been theorized to have a direct effect on anger (Clark et al., 1999). Theorists have postulated that anger is an outcome of perceived racism (Feagin &

McKinney, 2003), because when one perceives or anticipates racial discrimination or unfair evaluations due to one's race, anger as an emotional response results (Harrell, 2000; Krieger, 1999; Paradies, 2006). Empirical studies have provided support for the theorized relationship between perceived racism and anger since several studies have found positive associations between perceived racism and anger expression in Black adults (Brondolo, Thompson et al., 2005; Brondolo et al., 2008; Broudy et al., 2007). Based on theory and empirical findings, it is hypothesized that perceived racism will be positively related to anger in Black single mothers. Further, perceived racism has a direct effect on self-esteem and on anger. Self-esteem and anger each have a direct effect on depression. Therefore, perceived racism has an indirect effect on depression through self-esteem, through anger, and through the relationship between self-esteem and anger.

Stress has been theorized to have a direct effect on depression. Stress is the degree to which situations in one's life are perceived as unpredictable, uncontrollable, and overloading (Cohen et al., 1988). Theorists have explained that stress leads to depression (Monroe & Harkness, 2005), suggesting that depression arises from chronic or acute situations and events appraised as psychologically stressful (Beck, 1967; Brown & Harris, 1989; McEwen, 2006), and resulting in depression as a reaction (Post, 1992). Empirical findings have supported the theorized relationship between stress and depression since positive associations between stress and depression have been found in low-income adult single mothers (Peden et al., 2004), including African American women and single mothers (Artinian et al., 2006; Hatcher, 2008; Odom & Vernon-Feagans, 2010). Based on theory and empirical findings, it is hypothesized that stress will be positively associated with depression in Black single mothers.

Stress has been theorized to have a direct effect on self-esteem. Theorists have

postulated that prolonged stressful situations lowers self-esteem (Mruk, 1995), and specific stressful positive or negative life events can challenge or threaten one's sense of worthiness, thus lowering self-esteem (Beck, 1967; Crocker & Wolfe, 2001; Wills & Langer, 1980). Empirical findings have supported the theorized relationship between stress and self-esteem since several studies have found negative associations between stress and self-esteem in adult women (Lo, 2002), including low-income single mothers (Lutenbacher, 2002; Peden et al., 2004). Based on theory and empirical findings, it is hypothesized that Black single mothers who experience higher levels of perceived stress, will have lower levels of self-esteem.

Stress has been theorized to have a direct effect on anger. Theorists have explained that social stresses can generate anger as an emotional reaction to unpleasant psychologically stressful situations (Berkowitz, 1998, 2003; Berkowitz & Harmon-Jones, 2004), and negative stressful life events perceived as threatening (Berkowitz, 1998, 2003; Berkowitz & Harmon-Jones, 2004; Novaco, 1985). Empirical findings have supported the theorized relationship between stress and anger since studies have found positive relationships between stress and anger in adults, including Black adults and parents (Bodenmann et al., 2010; Broman & Johnson, 1988; Rodriguez & Richardson, 2007), and low-income single mothers (Lutenbacher, 2002). Based on theory and previous research, it is hypothesized that perceived stress will be positively related to anger in Black single mothers.

Perceived stress, self-esteem and anger each have a direct effect on depression. Perceived stress has a direct effect on self-esteem and a direct effect on anger. Therefore, perceived stress has an indirect effect on depression through self-esteem, through anger,

and through the relationship between self-esteem and anger.

Figure 1 presents the over-identified, recursive model of depression in Black single mothers. Based on the predicted pattern of relationships in the over-identified model, there should be no statistically significant differences between the over-all model and the data. Further, there should be a good fit of the model with the data.

Hypotheses

In Black single mothers:

1. There is no statistically significant difference between the model and the data; and there is a good fit of the model with the data
2. Self-Esteem has a negative and direct effect on depression
3. Self-Esteem has a negative and direct effect on anger
4. Anger has a positive and direct effect on depression
5. Perceived racism has a negative and direct effect on self-esteem
6. Perceived racism has a positive and direct effect on anger
7. Perceived stress has a positive and direct effect on depression
8. Perceived stress has a negative and direct effect on self-esteem
9. Perceived stress has a positive and direct effect on anger
10. Perceived racism has an indirect effect on depression through self-esteem and anger and relationship between self-esteem and anger.
11. Perceived stress has an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger

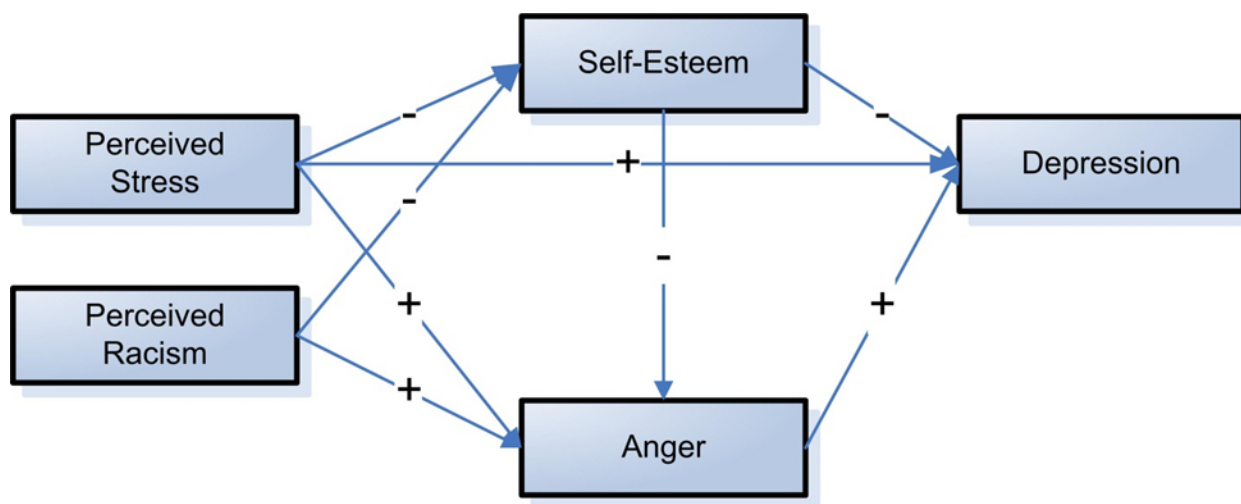


Figure 1. Apriori Over-Identified Recursive Model of Depression

Chapter III Methods

This chapter presents the research design of this study that examined the theoretical model proposing direct effects of anger and self-esteem on depression, the direct effects of perceived racism and perceived stress on anger and self-esteem, the direct effects of perceived stress on depression, and the direct effects of self-esteem on anger. The indirect effects of perceived racism and perceived stress on depression via self-esteem and anger and the indirect effects of self-esteem on depression via anger were also examined. The materials presented in this chapter include the discussion of the (a) research setting, (b) sample, (c) instruments, and (d) data collection methods.

Research Settings

Recruitment took place in two urban cities in central New Jersey. The first city has a population of approximately 85,000 persons and an ethnic/racial composition consisting of about 52.0% Blacks, 33.7% Hispanic/Latino, 13.5% Whites, and the rest reported being of other races (US Census, 2010). The second city has a population of a little over 77,000 persons and an ethnic/racial composition consisting of about 48.1% African American, 47.0% Hispanic/Latino, 4.9% White and the rest reported being of other races (US Census, 2010).

A total of ten recruitment sites were used. The recruitment sites included three private pediatric practices, three social service agencies, and four community sites. The three pediatric practices serviced mostly single mothers of low-income and were located in some of the poorest neighborhoods in the city. Three social service agencies included a shelter for homeless women and their children, a charitable organization which provides meals and social services to the population's neediest men, women, and children, and a social service office offering public assistance to the poor. Four

community sites included two daycare centers which service mostly low to middle income single mothers, a dance school which provides artistic instruction to over 100 inner city children, and a family cleaning center.

Sample

The study participants consisted of a non-probability sample of convenience of 208 Black single mothers who met the delimitations of the study as specified in Chapter 2. During data collection, 312 women were approached and asked to participate. Of the 312 women who were initially approached, 226 women agreed to fill out the surveys. Eighteen surveys were discarded because upon careful review of the demographic information reported, the women did not meet the inclusion/exclusion criteria as originally determined by the researcher in the interview. Of the 226 participants, 208 single mothers were included in the final sample who “self-identified” with the Black race. Of the 208, five (5) women who self-identified as Black documented that they were Black and another race, such as Hispanic, Native American, or White. These women were technically bi-racial ($N=5$; 2.5%), but were included in data analysis since they self-identified with the Black race.

Relative to inclusion criteria, the single mothers were between the ages of 18 and 45 and self-identified as Black. Black single mothers met the following inclusion criteria (a) never-married, widowed, divorced or separated, and (b) have one or more children living with them. Single was defined as never married or separated, widowed or divorced. These mothers were physically and mentally able to participate in the study and able to read and comprehend the English language. The sample excluded mothers who were currently receiving psychiatric care or counseling, taking antidepressant medication, pregnant, or had children less than one year of age. Sample characteristics are outlined in Table 1.

Sample size for testing the proposed model was based on the guidelines from Cohen (1988), Kline (2005), and Tabachnick and Fidell (2001). The calculation of the targeted sample size took into account small to medium effects based on previously reported empirical findings of the relationships in the model, an alpha of .05, and a power of .80 (Cohen, 1988; Tabachnick & Fidell, 2001). According to Kline (2005), a sample size of 200 subjects was needed at minimum. An ideal sample size-to-parameters ratio would be 20:1; and subjects- to-number of free parameters should be at least be 10:1 to ensure trustworthiness for structural equation models (Kline, 2005). Based on the aforementioned criteria, 14 parameters and 14 subjects per parameter will give a ratio of 14:14, yielding a necessary sample size of at least 196 subjects.

In the present study, most of the 208 women were young adults with ages ranging from 18 to 45 years ($M = 30.55$, $SD = 7.08$). The majority of women (87.5%) reported that they were single having never been married, 6.7% were divorced 5.3% were separated, and .5% were widowed. The majority of the women reported being head of household (88.9%). Most women also reported having between 1-2 children (61.1%), while 34.1% had 3-4 children, 3.8% had 5-6 children and 1.0% had 7 or more children. A large portion of the women had preschool aged children (46.6%) while the rest did not (53.4%). Most of the women (61.4%) had completed high school, 17.9% completed a technical school, 13.0% had a two-year college degree, 3.9% had completed eighth grade, 1.9% completed a four year college, and 1.9% completed a master's degree. The majority of the women reported being unemployed 41.9%, while 37.9% worked full-time, 15.3% worked part-time, 4.4% reported being disabled, and .5% reported working temporarily.

Employment position was categorized based on the Hollingshead (1975) four factor index of social status's nine categories of occupational factors. When reporting employment position, though some women reported being currently unemployed, they

nevertheless chose to report their prior employment position. When answering this question, 30.2% of women reporting employment position indicated performing semiskilled work, 23.0% reported that they were technicians or semiprofessionals, 17.4% of women reported performing clerical or sales work, 10.3% of women performed unskilled work, 8.7% of women reported being a manager or minor professional, 4.0% of women reported being an administrator or lesser professional, 3.2% reported being menial service workers while only .8% reported being a major professional. In addition, a large majority (43.6%) had earnings less than \$5,000 a year, 28.2% earned between 5,000 and 20,000 dollars a year, 12.8% earned between 21,000 and 30,000 thousand dollars a year, 7.4% had earnings between 31,000 and 40,000 dollars a year and only about 8% earned more than 40, 000 dollars a year. The demographic characteristics of the sample are summarized in Table 1.

Table 1.
Frequency Distribution of Selected Demographic Variables

Characteristic	N	Percentage
Ages		
18-19	7	3.4%
20-29	93	44.9%
30-39	77	37.2%
40-45	30	14.5%
MD ^a	1	
Race		
Black/African American	203	97.6%
Black and another race	5	2.4%

(continued)

Characteristic	N	Percentage
Marital Status		
Single/Never Married	182	87.5%
Separated	11	5.3%
Divorced	14	6.7%
Widowed	1	0.5%
Head of Household		
Yes	185	88.9%
No	23	11.1%
Number of Children		
1-2 children	127	61.1%
3-4 children	71	34.1%
5-6 children	8	3.8%
7 or more children	2	1.0%
Mother's Children's Ages		
Some Preschool Age	97	46.6%
No Preschool Age	111	53.4%
Education		
Eighth Grade	8	3.9%
High School	127	61.4%
Technical School	37	17.9%
Two Year College	27	13.0%

(continued)

Characteristic	N	Percentage
Education		
Four Year College	4	1.9%
Master's Program	4	1.9%
MD ^a	1	
Employment		
Full-Time	77	37.9%
Part-Time	31	15.3%
Unemployed	84	41.9%
Disabled	8	4.4%
Temporary Worker	1	0.5%
MD ^a	7	
Employment Positions		
Menial Service Worker	4	3.2%
Unskilled Workers	13	10.3%
Semiskilled	38	30.2%
Skilled Manual Worker	3	2.4%
Clerical/Sales Worker	22	17.4%
Semiprofessionals/Technicians	29	23.0%
Manager/ Minor Professionals	11	8.7%
Administrator/Lesser Professionals	5	4.0%
Major Professionals/Higher Executives	1	0.8%
MD ^a	82	

(continued)

Characteristic	N	Percentage
Income		
Less than \$5000	88	43.6%
\$5,000 and \$ 20,000	57	28.2%
\$21,000 and \$30,000	26	12.8%
\$31,000 and \$40,000	15	7.4%
\$41,000 and \$50,000	9	4.5%
\$51,000 and \$60,000	4	2.0%
\$61,000 and \$70,000	1	0.5%
Greater than \$70,000	2	1.0%
MD ^a	6	

MD^a = Missing Data

Instruments

The Centers for Epidemiological Studies Depression (CES-D) Scale²

The Centers for Epidemiologic Studies Depression (CES-D) Scale is a 20-item self-report instrument designed to assess current levels of depressive symptoms (within the past week) in the general population (Radloff, 1977; see Appendix A). Respondents indicate the frequency and duration of times which they have experienced certain situations or feelings on a 4-point summated rating scale (0 = *situation occurred rarely or none of the time* and 3 = *most or all of the time or 5-7 days*). A total score is obtained after reversing the scores on items 4, 8, 12 and 16. The possible range of scores is from 0 to 60 with higher scores indicating more depressive symptomatology.

Relative to content validity, items for this tool were selected by Radloff (1977) from previously validated depression scales, and components of depressive symptoms

were identified from both the clinical literature and factor analysis studies. Four items were worded positively to offset a response set and to assess the presence or absence of positive affect.

Relative to construct validity, principle component factor analysis with Varimax rotation resulted in a four factor model which explained 48% of the variance in three different samples of adults from a suburban community ($N = 4,996$; Radloff, 1977). The four factors included (a) Depressed Affect, (b) Lack of Positive Affect, (c) Somatic and Retarded Activity, and (d) Interpersonal. Evidence of known-groups validity was provided when psychiatric inpatients had higher scores on the CES-D scale than a general population sample. Convergent validity was shown when the CES-D scale correlated strongly and positively with scales measuring symptoms of depression, such as the Bradburn Negative Affect ($r = .60, p < .05$), the Lubin Adjective Checklist ($r = .51, p < .05$), and the Bradburn Balance ($r = .61, p < .05$) in a sample of healthy adults and psychiatric inpatients. Evidence of concurrent validity was shown when the CES-D scale correlated negatively with the Bradburn Positive Affect scale ($r = -.21, p < .05$; Radloff, 1977).

Relative to reliability, Radloff (1977) reported coefficient alphas ranging from .84 to .85 for three samples of healthy adults from the community ($N = 2,514, N = 1,060, N = 1,422$) and a coefficient alpha of .90 for a sample of 70 psychiatric inpatients. Test-retest correlations for this sample ranged from .51 to .67 for the psychiatric inpatients at 2 to 8 week intervals, and .31 to .54 for community dwelling adults at 3 to 12 week intervals.

Carpenter et al. (1998) found a four-factor structure for the CES-D scale via principle component factor analysis in two samples comprised of (a) 225 low income

single mothers, and (b) 196 mothers of young children 5 and 6 years of age. Williams et al. (2007) found a four- factor structure for the CES-D scale via confirmatory factor analysis in a sample of 40,433 African American women aged 21-69 participating in a Black Women's Health Study. Makambi, Williams, Taylor, Rosenberg, and Adams-Campbell (2009) also reported a four-factor structure of the CES-D scale via confirmatory factor analysis in a sub-sample of 1,380 healthy U.S. Black women taken from the prior study by Makambi et al. (2009) and were the same four factors found by Radloff (1977).

Hann, Winter, and Jacobsen (1999) provided evidence of concurrent criterion-related validity when the CES-D scale correlated positively with measures of fatigue ($r = .66, p < .001$), anxiety ($r = .77, p < .001$), and mental health functioning ($r = -.65, p < .001$) in a sample of 117 adult women with cancer. Evidence of construct validity via contrasted group comparisons was additionally shown when cancer patients ($N = 117$) reported more depressive symptoms than a healthy comparison group of women ($N = 62$).

Schroevers, Sanderman, van Sonderen, and Ranchor (2000) provided evidence of concurrent criterion-related validity when scores on a subscale of the CES-D scale, depressive affect, correlated with other measures of distress such as state anxiety ($r = .64, p < .001$), psychological distress ($r = .77, p < .001$), neuroticism ($r = .62, p < .001$), and social distress ($r = .60, p < .001$) in a sample of 475 adult cancer patients. Scores on the depressed affect subscale of the CES-D were also inversely related to measures of self-esteem ($r = -.41, p < .001$), quality of life ($r = -.44, p < .001$), and life satisfaction ($r = -.50, p < .001$) in this sample.

Gitlin, Hauck, Dennis, and Schulz (2007) provided evidence of concurrent criterion-related validity via correlations of the CES-D scale scores with a measure of functional difficulty ($r = .43, p = .001$) in a sample of 129 African American adults over the age of 70. Carracciolo and Giaquinto (2002) provided evidence of concurrent criterion-related validity when the CES-D scale was able to predict current major depressive disorder based on clinical interviews using the Structured Clinical Interview for the DSM-IV (SCID-I: 19) in 151 adult patients in rehabilitation.

Wiessman, Sholomskas, Pottenger, Prusoff, and Locke (1977) provided evidence of convergent validity when the CES-D scale correlated with scales of clinicians ratings of depression such as the Hamilton Rating Scale ($r = .49, p < .001$), the Raskin Depression Scale ($r = .28, p < .001$), and the Symptoms Checklist ($r = .72, p < .001$), in a sample of 148 acutely depressed psychiatric inpatients.

Carracciolo and Giaquinto (2002) provided evidence of convergent validity when the CES-D scale was highly and positively correlated with the Hamilton for Depression Scale ($r = .66, p = .0001$) in 151 adult patients in rehabilitation. Wilcox, Field, Prodormidis, and Scafidi (1998) gave evidence of convergent validity when the CES-D scale correlated strongly with the BDI ($r = .58, p < .01$), and moderately with the DISC diagnoses of Major Depression ($r = .38, p < .01$), and Dysthymia ($r = .41, p < .01$) in a sample of 155 low income African American and Hispanic adolescent mothers aged 13 to 21.

An adequate coefficients alpha reliability of .85 was been reported in a sample of 414 adult African American rural mothers (Odom & Vernon-Feagans, 2010). A

coefficient alpha of .85 was found in a sample of 824 adult African American inner-city mothers (Siefert, Williams, Finlayson, Delva, & Ismail, 2007), and a coefficient alpha of .83 was found in a sample of 173 African American mothers of young preschool age children (Coiro, 2001). A coefficient alpha of .86 was found in a sample of 225 low-income single mothers 59% of whom were African American (Carpenter et al., 1998). A coefficient alpha of .91 was found in a sample of 53 low-income single mothers, 57% of whom were African American (Lutenbacher, 2002). A coefficient alpha of .91 was also found in a sample of 205 low-income single mothers 48% of whom were African American (Peden et al., 2004).

In addition to mothers, adequate coefficient alphas have also been found in Black women in general. Adequate coefficient alphas have been found in a sample of 40,403 African American women participating in a national survey (coefficient alpha = .74; Williams et al., 2007), a sample of 1,380 healthy Black women participating in a national health survey (coefficient alpha=.89; Makembi et al., 2009), a sample of African American women with high blood pressure (coefficient alpha = .93; Artinian, Washington, Flack, Hockman, & Jen, 2006), a sample of 252 Black female college students (coefficient alpha = .82; Jones, Cross, & Defour, 2007), a sample of 343 urban African American (coefficient alpha = .82; Schulz et al., 2006), and a sample of 375 Black pregnant women (coefficient alpha = .90; Canady, Stommel, & Holzman, 2009).

The Rosenberg Self-Esteem Scale (RSES)

The Rosenberg Self-Esteem Scale (RSES) is a self-report unidimensional measure of global self-esteem (Rosenberg, 1965; see Appendix B). This scale is comprised of 10 items, five negatively worded items and five positively worded items, containing a

continuum of self-worth statements indicating high or low self esteem. Each response is rated on a 4-point response scale (1= *strongly agree* and 4 = *strongly disagree*) and after reverse scoring five positively worded items, total scores can range from 10 to 40 with higher scores indicating higher self-esteem (Rosenberg, 1965).

Relative to content validity, the construction of items was guided by self-concept theories and were written for ease of administration, economy, unidimensionality, and face validity (Rosenberg, 1965). The items were pretested on 50 normal young adult volunteers in a nursing ward who were asked to fill out various questionnaires which contained the self-esteem scale. The scores of these participants were correlated with external opinions from nurses who filled out Leary scales (Rosenberg, 1965) which asked about their perception of apparent depressive affect among the volunteers. This validated the concurrent validity of the RSES. Based on a chi-square test, a significant association between the individual's self-esteem and the likelihood that the individual would appear depressed to the nurses was found ($p < .05$) (Rosenberg, 1965).

Relative to criterion-related validity, Rosenberg (1965) established concurrent validity in a sample of 50 young adult volunteers, when those with lower self-esteem were more likely to feel depressed and also reported more feelings of gloominess, unhappiness, psychosomatic symptoms, and discouragement. In addition, evidence of convergent validity was shown when a very strong and consistent relationship between the RSES and a Guttman scale of depressive affect was found in a sample of 50 adult volunteers. Only 4% of persons with the highest self-esteem scores, but 80% of persons with the lowest self-esteem scores were highly depressed as per this measure.

Relative to construct validity, known-groups validity was established in a sample

of 5, 024 high school juniors and seniors from randomly selected New York public high schools when adolescents of higher social class had higher levels of self-esteem than adolescents from lower social classes (Rosenberg, 1965). Relative to reliability, Rosenberg (1979) reported a coefficient of reproducibility of 92%.

Relative to construct validity, Schmitt and Allik (2005) found a unidimensional factor structure for the RSES via principal component factor analysis in a sample of 16,998 persons from college students and community samples from 53 different nations. Hatcher (2009) found that the RSES had a two-factor structure via principle component factor analysis with oblique rotation in a sample of 98 African American single mothers. These factors included positive and negative self-regard. Sinclair et al. (2010) also found a two-factor structure via principal component factor analysis in a sample of 503 U.S. adults, 56 of which were African American. Since these two factors, positive and negative regard, were highly correlated, a one component model supporting a unidimensional structure was concluded.

Hatcher (2009) established concurrent validity when the RSES correlated negatively with measures of depressive symptoms and negative thinking in a sample of 98 African American single mothers. Sinclair et al. (2010) provided evidence of concurrent validity when the RSES correlated significantly with measures of depression ($r = -.62, p < .001$), anxiety ($r = -.47, p < .001$), and stress ($r = -.52, p < .001$) in a sample of 503 multi-ethnic U.S. Adults.

Silber and Tippet (1965) reported test-retest reliability of .88 over a two-week period for a sample of college students. Rowley, Sellers, Chavous, and Smith (1998) reported a coefficient alpha reliability of .87 in a sample 176 African American college

students and .82 in a sample of 72 African American high school students. Wesley (2003) reported a coefficient alpha of .85 in a sample of 98 Black women, and Jones, Cross, and Defoour, (2007) reported a coefficient alpha of .83 in a sample of 252 Black women. Mathews, Owens, Edmundowicz, Lee, and Kuller (2006) reported a coefficient alpha of .85 in a sample of 155 healthy women. Hatcher (2009) reported a coefficient alpha of .83 in a sample of 98 African American single mothers. Sinclair et al. (2010) reported a coefficient alpha of .90 in a sample of 56 U.S. African Americans/Black adults. Hutto, Kim-Godwin, Pollard, and Kemppainen (2011) reported a coefficient alpha of .84 in a sample of 51 low-income mothers including 17 African American mothers.

State-Trait Anger Expression Inventory (STAXI-2)

The Spielberger State-Trait Anger Expression Inventory-2 (STAXI-2) is a self-report instrument designed to measure the experience (state-trait anger), expression (anger out, anger in), and control of anger (anger control-out and anger control-in) in normal and abnormal individuals (Spielberger, 1999; see Appendix C and D). The 15-item State-Anger scale was used in this analysis (see Appendix C). The trait-anger scale and the anger expression scales also were administered to participants (see Appendix D). These scales will be used for secondary data analysis and were placed after the demographic data sheet for data collection purposes.

This STAXI-2 is a 57-item inventory which is a revised version of the original 44-item STAXI (Spielberger & Sydeman, 1988). The STAXI-2 consists of six primary scales including: (a) state anger (15-items, 1-15, scores can range from 15 to 60), (b) trait anger (10-items, 16-25, scores can range from 10-40), (c) anger expression-out (8-items, 27, 31, 35, 39, 43, 47, 51, 55, scores can range from 8 to 32), (d) anger expression-in (8-

items, 29, 33, 37, 41, 45, 49, 53, 57, scores can range from 8 to 32), (e) anger control-out (8-items, 26, 30, 34, 38, 42, 46, 50, 54), and anger control-in (8-items, 28, 32, 36, 40, 44, 48, 52, 56). The State Anger Scale is comprised of three subscales which include (a) feeling angry, (b) expressing anger verbally, and (c) expressing anger physically. The Trait Anger scale is comprised of two subscales which include (a) Angry Temperament, and (b) Angry Reaction. On these scales respondents indicate on a 4-point scale (1 = *not at all or almost never* to 4 = *very much so or almost always*) the degree to which they agree with statements which ask about different components of anger. Total scores for each scale are obtained by summing responses with higher scores indicating a higher degree of the frequency and experience of anger or use of certain methods for the expression or control of anger as determined by the scale used (Spielberger & Sydeman, 1988).

Relative to content validity, items for the State and Trait Anger scales were originally selected based on the working definitions of anger obtained from the theoretical literature (Spielberger & Sydeman, 1988). A pool of items were assembled and pretested in men and women resulting in high coefficient alphas (Spielberger & Sydeman, 1988). Item revisions for the state anger scale of the STAXI-2 were based on reviews of the theoretical and empirical literature which made distinctions between angry feelings and the expression of anger verbally or physically. A 69-item preliminary version of the STAXI-2 underwent factor analysis and the items with the higher factor loadings and the best psychometric properties were retained resulting in the new 57-item STAXI-2 (Spielberger, 1999).

Relative to construct validity, principle components factor analysis with promax rotation revealed an 8-factor structure for the entire STAXI-2 and a 2-factor structure for the 15-item state-anger scale, in a sample of 1644 normal adults (Spielberger, 1999).

Spielberger and Sydeman (1988) factor analyzed the State Anger Scale resulting in a one factor structure for men and women. Fuqua et al. (1991) factor analyzed the STAXI and confirmed that a seven-factor structure corresponded to the seven subscales for this inventory in a sample of 455 college students.

Culhane and Morera (2010) provided evidence of convergent validity when the subscales of the STAXI-2 were correlated with the Novaco Anger Scale-Provocation Inventory and subscales of the Multidimensional Anger Inventory in a sample of 257 U.S. Hispanic undergraduate students and 246 non-Hispanic Whites.

Concurrent validity was shown when the State-Anger Scale correlated positively with measures of hostility ($r = .66$ to $.73$, $p < .001$), neuroticism ($r = .27$ to $.43$, $p < .001$), and anxiety ($r = .30$ to $.63$, $p < .001$) in a sample of 280 undergraduate college students and 270 Navy recruits (Spielberger & Sydeman, 1988). Martin and Dahlen (2007) provided evidence of concurrent validity when the STAXI-2's state anger scale was positively correlated with subscales of a measure of hostility ($r = .36$, $p < .01$), and measures of anger responses ($r = .15$, $.29$, $.25$, $p < .05$) in a sample of 205 undergraduate psychology students, 84 of whom were African Americans.

Relative to reliability, in samples of 270 Navy recruits and 280 undergraduate college students, Spielberger and Sydeman (1988) reported a coefficient alpha greater than .93 for the state-anger scale and alternate form correlations ranging from .95 to .99 between the 10- and 15- item versions of both scales. Webb, Beckstead, Meininger, and Robinson (2006) reported a coefficient alpha of .90 for the state-anger subscale for the STAXI-2 in a sample of 33 African American Women, and Lutenbacher (2002) reported coefficient alphas ranging from .82 to .89 for the overall scale STAXI and its subscales in a sample of 53 low-income single mothers, 30 of whom were African American. Martin and Dahlen (2007) reported a coefficient alpha of .96 in a sample of 205 undergraduate

psychology students, 84 of whom were African Americans. Webb and Carey (2008) reported a coefficient alpha of .93 for the State-Anger Scale a sample of 263 low-income Black women. A coefficient alpha of .94 for the state-anger scale was found for the STAXI-2 in a sample of 247 adult men and women (Patterson, Kerrin, Wileyto, & Lerman, 2008). Culhane and Morera (2010) reported coefficient alphas of .91 for the state-anger scale for the STAXI-2 and coefficient alphas of .80 to .86 for the state-anger subscales in a sample of 257 US Hispanic undergraduate students.

The Perceived Ethnic Discrimination Questionnaire Community Version Brief (PEDQ-CV-B)

The Perceived Ethnic Discrimination Questionnaire Community Version (PEDQ-CV) is a self-report instrument designed to assess perceived exposure to racial or ethnic discrimination in community dwelling adults and any other ethnic group (Brondolo, Kelly et al., 2005). This 70-item questionnaire measures multiple dimensions of everyday racism and assesses lifetime experiences of ethnic discrimination. The scale consists of several subscales, one of which includes a 34-item Lifetime Exposure Discrimination Scale and asks participants to indicate how often they had specific experiences of racism/discrimination during their lifetime. Each item is rated on a 5-point summated rating scale from (1 = *never* to 5 = *very often*).

A brief version (17-items) of the PEDQ-CV, termed The Perceived Ethnic Discrimination Questionnaire Community Version-Brief (PEDQ-CV-B), was created from the original 34-item Lifetime Exposure Scale during this study and was used in this analysis (Brondolo, Kelly et al., 2005; see Appendix E). This is also a 5-point summated rating scale (1 = *never* to 5 = *very often*). Scores can range from 17 to 85 with higher scores indicating more experiences of racism/discrimination.

Relative to content validity, items were taken from the original version of the

PEDQ-CV and revised by Black, Latino, and Caucasian research team members by reducing vocabulary level and adapting the items to the life settings and experiences of community dwelling adults (Brondolo, Kelly et al., 2005). Community input was sought via focus interviews with 29 Black, three Latino, and one mixed (Black & Latino) persons at a primary-care practice site (Brondolo, Kelly et al., 2005). These 33 community participants completed a preliminary version of the questionnaire providing feedback regarding meaning and acceptability of items resulting in a final version based on the participants' suggestions (Brondolo, Kelly et al., 2005). Four items with the highest factor loadings were taken from each of the four subscales created from the full-PEDQ-CV-B to make 16 of the PEDQ-CV-B's items. A final item which asks about exposure to discrimination from police was added to make this 17-item scale PEDQ-CV-B.

Relative to construct validity, Brondolo, Kelly et al. (2005) provided evidence of convergent validity when scores on the Brief version of the PEDQ-CV's lifetime discrimination scale were correlated positively with the Black version of the Perceived Racism Scale (PRS) in a sample of 70 Black students ($r = .61, p < .001$) and the Latino version of the PRS in a sample of 58 Latino students ($r = .57, p < .001$). Concurrent validity was also established when scores on the Brief PEDQ-CV-B correlated positively with primary appraisals of threat ($r = .43, p < .0001$), and harm ($r = .46, p < .001$). When discriminant validity was assessed, the scales were not appreciably correlated with primary appraisal of challenge ($r = .09, p > .22$) and weakly correlated with perception of benefit ($r = .18, p < .01$) in a sample of Black and Latino students. The scores on the Brief PEDQ-CV were positively correlated with trait anxiety ($r = .35, p < .001$), hostile attribution ($r = .39, p < .0002$), and cynicism ($r = .44, p < .0001$); and, scores were negatively correlated with defensiveness ($r = .30, p < .01$) in this same sample.

Relative to reliability, Brondolo, Kelly et al. (2005) reported coefficient alphas of .87 in a sample of 70 Blacks and .88 in a sample of 58 Latinos. Brondolo, Thompson et al., (2005) reported a coefficient alpha of .88 for the PEDQ-CV-B lifetime exposure discrimination total scale in a sample of 420 low-income Black and Latino adult patients, staff and community members recruited from a community health center. Ghaffari and Ciftci (2010) reported an alpha coefficient of .93 for the total PEDQ-CV-B in a sample of 225 Muslim immigrants.

The Perceived Stress Scale (PSS)

The Perceived Stress Scale (PSS) is a 14-item self-report unidimensional measure of perceived stress, defined as the extent to which situations in one's life are appraised as stressful because they are unpredictable, uncontrollable, and overloading (Cohen, Kamarck, & Mermelstein, 1983; see Appendix F). Items on this scale ask about feelings and thoughts during the last month indicating current levels of stress. Subjects respond on a 5-point summated rating scale (0 = *never* to 5 = *very often*) to questions which ask how often they felt a certain way. Scores can range from 0 to 56 with higher scores indicating higher perception of stress. Total scores are obtained by reversing responses to seven positively stated items and then summing across all scale items. The shortened 10-item version of this scale, the PSS-10 will be used in this analysis since it has higher internal consistency (coefficient alpha = .78) compared to the 14-item PSS's internal reliability (coefficient alpha = .75; Cohen et al., 1983; Cohen & Williamson, 1988). Scores for this 10-item version can range from 0 to 40 with higher scores indicating higher current levels of stress.

Relative to content validity, items on the original (14-items) PSS were developed based on the perspective of stress conceptualized by Lazarus (1966, 1977) and stress literature which focuses on cognitive appraisal and emotional responses as a measure of

the extent to which events are perceived as stressful (Cohen et al., 1983). Items were also developed for community samples with at least a junior high school education. The items were developed to be easy to understand, simple to answer and general enough to avoid content specific to any subpopulation or group (Cohen et al., 1983). The items were pretested on a sample of college students and a sample of community participants from a smoking cessation program. The 10-item PSS consists of 10 items with the highest factor loadings from the original 14-item PSS. Items 4, 5, 12, and 13, of the PSS-14 were omitted from the original 14 item scale to make the 10-item scale (Cohen & Williamson, 1988).

Relative to construct validity, principal component factor analysis revealed a one-factor structure for the PSS in a sample of 2,387 individuals from a US probability sample (Cohen & Williamson, 1988). Roberti, Harrington, and Storch (2006) found a two-factor structure via exploratory factor analysis for the PSS-10 in a sample of 285 undergraduate college students, the majority of whom were women ($N = 255$). Mitchell, Crane, and Kim (2008) found a unidimensional structure for the PSS-10 via exploratory factor analysis in a sample of 60 survivors of suicide.

Cohen and Williamson (1988) provided evidence of concurrent validity when scores on the PSS-10 were positively correlated with reports of current stress ($r = .39, p < .001$), negative life events ($r = -.27, p < .001$), and negatively correlated with numbers of hours per week worked ($r = -.11, p < .001$) in a probability sample of 2,387 U.S. adults. PSS-10 scores were also negatively correlated with perceived health status ($r = -.23, p < .0001$), frequency of exercise ($r = -.06, p < .003$), and positively correlated with health services utilization ($r = .21, p < .0001$), number of serious illnesses ($r = .15, p < .0001$), serious symptoms of illness ($r = .14, p < .0001$), life dissatisfaction ($r = .47, p < .0001$), amount of alcohol use ($r = .10, p < .0001$), and drug use ($r = .17, p < .001$). Roberti et al.

(2006) provided evidence of concurrent validity when scores on the PSS-10 correlated strongly with measures of anxiety ($r = .59, p < .001$), depression ($r = .72, < .001$), and locus of control ($r = .20, < .001$) in a sample of 285 undergraduate college students (225 women). Discriminant validity was shown when the PSS-10 did not appreciably correlate with measures of religious faith, sensation seeking, and aggression ($p > .05$). Mitchell et al. (2008) provided evidence of convergent validity when scores on the PSS-10 were moderately and positively correlated with other measures of stress ($r = .54, p < .01$), posttraumatic stress ($r = .69, p < .05$), and the PSS-14 ($r = .98, p < .05$) and PSS-4 ($r = .95, p < .05$), and negatively correlated with measures of mental health functioning ($r = -.70, p < .05$), and physical health ($r = -.21, p < .05$) in a sample of 60 adult survivors of suicide. Known-groups comparisons revealed that minorities scored significantly higher on the PSS-10 than those identified as White.

Relative to reliability, Cohen and Williamson (1988) reported a coefficient alpha of .78 for the PSS-10 in a probability sample of 2,387 US adults. Mathews et al. (2006) reported a coefficient alpha of .90 for the PSS-10 in a sample of 155 healthy women. Webb and Carey (2008) reported a coefficient alpha of .90 for the 10-item PSS in a sample of 263 low-income Black women. A coefficient alpha for the PSS-10 of .85 was found in samples of female college students ($N = 285$; Roberti et al., 2006), a coefficient alpha of .84 was found in Turkish university students ($N = 508$; Orucu & Demir, 2008), and a coefficient alpha of .91 was reported in older adult females ($N = 43$; Mitchell et al., 2008).

Demographic Data Sheet

A demographic data sheet (see Appendix G) was constructed to gather information about the characteristics of the participants such as age, education and income. The instrument packet was ordered as follows: the PSS-10, the PEDQ-CV-B,

the State Anger Scale, the RSES, and the CES-D scale, followed by the demographic data sheet and lastly the remaining scales of the STAXI-2 .

Procedure for Data Collection

Single mothers were recruited from three private pediatric practices, three social service agencies and four community sites. Approval to conduct this study was obtained from the Institutional Review Board (IRB) of Rutgers, The State University of New Jersey (see Appendix H). Permission to conduct the study was obtained in writing from all recruitment site administrators and directors and submitted to IRB. Data collection took place at these recruitment sites with the primary investigator present.

Data collection took place over a three month period. The primary investigator recruited subjects directly from the sites by approaching potential subjects in the waiting areas before health and community visits or in the exam rooms after health visits were completed. Potential subjects were pre-screened for delimitations and were explained details of the study and the rights of human subjects before participation. All women who volunteered and met the inclusion and exclusion criteria were directed to a quiet well-lit area or room free from distraction where the data packets were completed.

After informed consent was obtained in writing (See Appendix I), the participants responded to self-report questionnaires, a demographic data sheet and a SGIC. In the three private pediatric practices visited weekly, subjects were directed to well-lit areas or completed the questionnaires in an exam room while sitting comfortably in a chair. At three social service agencies visited on one or two occasions, subjects completed questionnaires in a quiet room designated by the site administrators/directors of each facility. At four community sites visited on one or two occasions, subjects completed questionnaires in a quiet area designated by the managers of each site. While questionnaires were being completed, dependent children present were kept occupied

with age appropriate toys. The primary investigator was available to answer questions concerning the questionnaires as they arose which were few. The completion of questionnaires took between 20 minutes and an hour. Designated regular contact persons were present at each site to ensure that potential subjects were available who had not yet participated in the study. Data collection took place at the pediatric practices several times a week for three months while at the community sites and social service agencies data collection took place on one or two occasions for a specified time period.

After completing the instrument packets, participants were asked if they wish to participate in a possible follow-up study via the US mail. Those who agreed recorded their names and addresses on a separate sheet, independent of their responses to the instruments and the demographic data sheet. To maintain confidentiality, participants also completed a Subject Generated Identification Code (SGIC) (See Appendix J) so that responses from time 1 to time 2 can be linked.

After completing and returning the survey materials to the primary investigator, the participants were thanked for their participation and were given \$10.00 in cash. These mothers were also given phone numbers in writing to psychological support services in the event they experienced psychological distress after leaving the recruitment site which might be related to questionnaire completion (See Appendix K). All data collected are kept in a locked file cabinet. After three years, the data will be shredded, as specified by IRB.

Chapter IV

Analysis of the Data

The purpose of this study was to develop and test a theory of depression via causal modeling. The apriori over-identified causal model included the exogenous variables of perceived racism and perceived stress and the endogenous variables of self esteem, anger, and depression, placed in the model according to theory. In addition, this research tested the direct and indirect effects of the exogenous and endogenous variables according to the pattern of causation specified in the model. The data analyzed were collected from 208 participants who responded to the Centers for Epidemiological Studies Depression (CES-D) Scale, the Rosenberg Self-Esteem Scale (RSES), the Spielberger Anger Expression Inventory State Anger Scale (STAXIST), the Perceived Ethnic Discrimination Scale (PEDQ-CV-B), and the Perceived Stress Scale (PSS). This chapter presents the findings resulting from the analysis of the data.

Statistical Description of the Study Variables

The final sample consisted of 208 respondents, aged 18 to 45. For the CES-D scale, which measured depressive symptoms, participants' scores ranged from 0 to 57 ($M = 19.10$, $SD = 14.25$; see Table 2). For the RSES, which measured self-esteem, participants' scores ranged from 17 to 40 ($M = 33.09$, $SD = 5.42$). Participants' scores for the STAXST, which measured state anger, ranged from 15 to 60 ($M = 22.06$, $SD = 10.34$). Participants scores for the PEDQ-CV-B, which measured perceived racism, ranged from 17 to 73 ($M = 31.21$, $SD = 11.51$). Participants' scores for the PSS, which measured perceived stress, ranged from 0 to 36 ($M = 18.07$, $SD = 6.04$). On average, these mothers had relatively mild levels of depressive symptoms, fairly high levels of

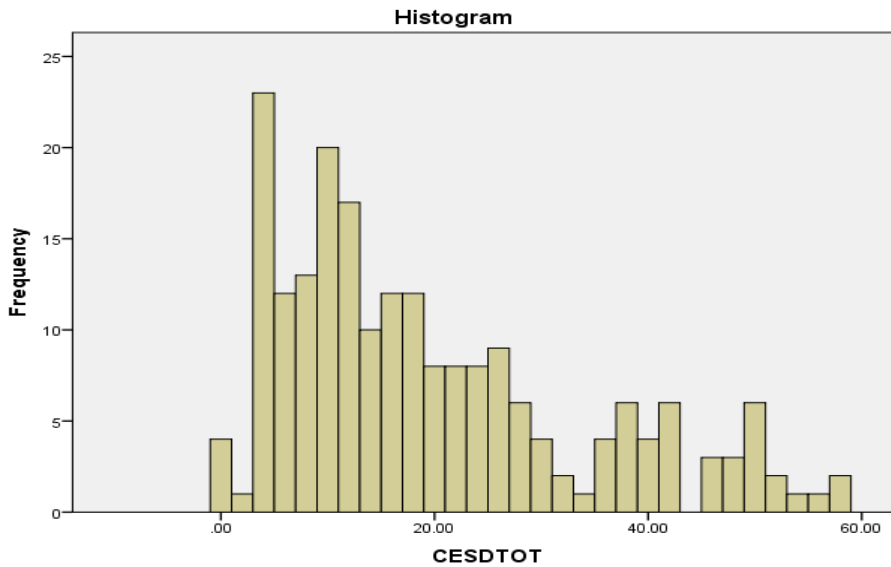
self-esteem and stress, and moderate levels of anger and perceived racism.

Table 2

Descriptive Statistics for Study Variables

Variables	Range	Median	M	SD
Depressive Symptoms	0-57	15.00	19.11	14.25
Self-Esteem	17-40	34.00	33.09	5.42
Perceived Anger	15-60	18.00	22.06	10.34
Perceived Racism	17-73	28.00	31.21	11.51
Perceived Stress	0-36	18.00	18.07	6.04

The main variable of interest in this study is depression. To illustrate the levels of depressive symptoms reported by the sample, a histogram was done on the frequency distribution of scores on the CESD. Based on scores from 30 to 57, about 20% of the participants reported moderately high to high depressive symptoms (see Figure 2).



Mean = 19.11
 Standard Deviation = 14.25
 N = 208

Figure 2. Frequency Distribution of CES-D Scores.

Psychometric Properties of the Instruments

All of the instruments used in the study demonstrated coefficient alphas above .80 for internal consistency reliability which exceeded the acceptable level of .70 (Nunnally & Bernstein, 1994). The coefficient alphas are reported in Table 3. The CES-D scale had a coefficient alpha of .92, which is similar to the values reported by Peden, Rayens, Hall, and Grant (2004), Williams et al. (2007), and Odom and Vernon-Feagans (2010) for African American mothers. The RSES had a coefficient alpha of .87, which is similar to the values reported by Wesley (2003), Hatcher (2009), and Hutto, Kim-Goodwin, Pollard, and Kamppainen (2011) for Black/African American women. The STAXST had

a coefficient alpha of .96, which is similar to the values reported by Lutenbacher (2002), Webb, Beckstead, Meininger, and Robinson (2006), and Martin and Dahlen (2007) for African American women. The PEDQ-CV-B had a coefficient alpha of .91, which is similar to those reported by Brondolo, Brady et al. (2005), Brondolo, Thompson et al. (2005) and Ghaffari and Cifitci (2010) for multi-ethnic minority samples. Finally, the PSS had a coefficient alpha of .84, which is similar to those reported by Mathews, Owens, Edmundowicz, Lee, and Kuller (2006), Roberti, Harrington, and Storch (2006), and Web and Carey (2008) in adult women. The coefficient alphas for each scale are presented in Table 3.

Table 3.
Coefficient Alpha Reliabilities for Study Variables

Instruments	Coefficient alphas
Centers for Epidemiological Studies Depression Scale	.92
Rosenberg Self-Esteem Scale	.87
Spielberger State Anger Scale	.96
Perceived Ethnic Discrimination Scale	.91
Perceived Stress Scale	.84

Data Analysis

Using an SPSS program, descriptive statistics were obtained to describe the study variables and the demographic characteristics of the sample. Pearson Product-Moment Correlation coefficients were assessed among the study variables. The intercorrelation matrix is presented in Table 4.

Table 4.
Intercorrelation Matrix for Study Variables

	CES-D	RSES	STAXST	PEDQ-CV-B	PSS
CES	1	-.36**	.39**	.27**	.39**
RSES		1	-.46**	-.44**	-.59**
STAXST			1	.54**	.51**
PEDQ-CV-B				1	.49**
PSS					1

**p < .01 (1-tailed), Centers for Epidemiological Studies Depression = CES-D, Rosenberg Self-Esteem Scale = RSES, State Anger Expression Scale = STAXST, Perceived Stress Scale = PSS, Perceived Ethnic Discrimination Questionnaire Community Version-Brief = PEDQ-CV-B

The over-identified recursive causal model was tested using the LISREL 9.1 computer program (Joreskog & Sorbom, 1993, 2006). This program presents all the information needed to test the hypotheses.

Relative to hypothesis 1, Maximum likelihood chi-square estimation was used to determine the overall fit of the model to the data. According to Pedhazur (1997), the larger the probability associated with the chi-square, the better the fit of the model with the data. The LISREL program also provided path coefficients and squared multiple correlations (Joreskog & Sorbom, 1993), along with direct effects to test hypotheses 2 and 9 and indirect effects to test hypothesis 10 to 11. The path coefficients are called Beta parameters when they are testing the relationship between two endogenous variables. The path coefficients are called Gamma parameters when they are testing the relationship between an exogenous variable and an endogenous variable (Joreskog & Sorbom, 1993). A summary of the standardized and unstandardized path coefficients along with tests of statistical significance are presented in Table 5. A summary of the direct and indirect effects among the variables are presented in Table 6.

Also in relation to hypothesis 1, the LISREL program provided a number of

indicators of the overall fit of the model to the data (Joreskog & Sorbom, 1993). They include the goodness-of-fit index (GFI), which measures the amount of variances and covariances in the sample that is predicted by the model (Joreskog & Sorbom, 1993). It essentially estimates how much better the researcher's model fits compared with no model at all (Kline, 2005). The adjusted goodness-of-fit index (AGFI) adjusts for the degrees of freedom of a model relative to the number of variables by correcting the GFI from the effects of multiple indicators for each variable (Joreskog & Sorbom, 1993). The GFI and AGFI range between 0 and 1, with a cutoff value of .9 which generally indicates an acceptable model fit (Joreskog & Sorbom, 1993). The comparative fit index (CFI) measures the relative improvement in the fit of the researcher's model over that of a baseline model or independence model; the model is acceptable if the CFI is .93 or greater (Bentler, 1990). The normed fit index (NFI) indicates the fit of the model relative to the null or independence model (Bentler & Bonett, 1980; Ullman, 2001). A value of .90 is acceptable and 1 is ideal (Bentler & Bonett, 1980; Ullman, 2001). The non-normed fit index (NNFI) prevents overestimation of fit due to the number of parameters and corrects for this issue. Values for these indicators range from 0 to 1.0 with .9 or greater indicating a good fit (Ullman, 2001).

Additional indicators are the standardized root mean residuals (SRMR) which is a measure of the mean absolute correlation residual, or the difference between the observed and predicted covariances (Kline, 2005). Values less than 0.1 are generally considered favorable. Finally, the root mean square error of approximation (RMSEA) is the measure of the degree of falseness of the null hypothesis or the degree of misspecification of the researcher's hypothesis so that higher numbers indicate a worse fit and values less than .05 indicate close approximate fit. However, values between .05 and .08 are still acceptable (Browne & Cudeck, 1993; Kline, 2005).

According to Joreskog and Sorbom (1989), standardized residuals are useful in assessment of model fit, and are fitted residuals divided by their asymptotic standard error. A standardized residual is considered “large” if it exceeds the value of 2.58 in absolute value, and suggests a specification error in the model. Modification indices are measures associated with fixed parameters in the model (Jorskog & Sorbom, 1989) that also suggests a specification error. The value of any given modification index represents the minimum amount of decrease in the chi-square statistic if the corresponding parameter is freed (Hox & Bechqer, 1998). Lei and Wu (2007) recommended that a large modification index (>3.84) be used to free the corresponding parameter, suggesting that “freeing a fixed parameter is less likely affected by chance if based on a large modification index as well as a large expected parameter change value” (p. 33).

Hypothesis 1

Hypothesis 1 stated that there would be no statistically significant difference between the model with the data, and that there would be a good fit of the model with the data. The results indicated that the chi-square was not statistically significant and that the probability was large $X^2(1, 208) = .05, p = .82$. The GFI was 1.00, the AGFI was .99, and the CFI was 1.00. The values of the NFI (1.00), NNFI (1.0), and RFI (.999) were also reported. The RMSEA was 0.0 and the SRMR was .00. Thus, there was no statistically significant difference between the model and the data. Based on the chi-square and probability level and the fit indices, there is an excellent fit of the model with the data. Standardized residuals ranged from -0.221 to 0.001; the largest modification index was 0.049. None of the standardized residuals exceeded the absolute value of 2.58, and none of the modification indices were large (>3.84). Hypothesis 1 was supported.

Hypothesis 2

Hypotheses 2 stated that self-esteem would have a negative and direct effect on

depression. The Beta testing this relationship was $-0.14, p > .05$ (see Table 5). Although the effect was in the predicted direction, the relationship was not statistically significant; therefore, self-esteem did not have a direct effect on depression in this model.

Hypothesis 2 was not supported.

Hypothesis 3

Hypothesis 3 stated that self-esteem will have a negative and direct effect on anger. The Beta testing this relationship was $-0.17, p < .05$ (see Table 5). Thus, the direct effect of self-esteem on anger was in the direction hypothesized and statistically significant. Hypothesis 3 was supported.

Hypothesis 4

Hypothesis 4 stated that anger would have a positive and direct effect on depression. The Beta testing this relationship was $0.23, p < .05$ (see Table 5). Thus, the direct effect of anger on depression was in the direction hypothesized and statistically significant. Hypothesis 4 was supported.

Hypothesis 5

Hypothesis 5 stated that perceived racism has a negative and direct effect on self-esteem. The Gamma testing this relationship was $-0.20, p < .05$ (see Table 5). Thus, the direct effect of perceived racism on self-esteem was in the direction hypothesized and statistically significant. Hypothesis 5 was supported.

Hypothesis 6

Hypothesis 6 stated that perceived racism has a positive and direct effect on anger. The Gamma testing this relationship was $0.34, p < .05$ (see Table 5). Thus, the direct effect of perceived racism on anger was in the direction hypothesized and statistically significant. Hypothesis 6 was supported.

Hypothesis 7

Hypothesis 7 stated that perceived stress has a positive and direct effect on depression. The Gamma testing this relationship was 0.20, $p < .05$ (see Table 5). Thus, the direct effect of perceived stress on depression was in the direction hypothesized and statistically significant. Hypothesis 7 was supported.

Hypothesis 8

Hypothesis 8 stated that perceived stress has a negative and direct effect on self-esteem. The Gamma testing this relationship was -0.49, $p < .05$ (see Table 5). Thus, the direct effect of perceived stress on self-esteem was in the direction hypothesized and statistically significant. Hypothesis 8 was supported.

Hypothesis 9

Hypothesis 9 stated that perceived stress has a positive and direct effect on anger. The Gamma testing this relationship was 0.24, $p < .05$ (see Table 5). Thus, the direct effect of perceived stress on anger was in the direction hypothesized and statistically significant. Hypothesis 9 was supported (see Table 5).

Table 5.
Standardized and Unstandardized Path Coefficients

Model Parameters	Unstandardized Estimate	Standard Error	Standardized Estimate	t-test statistic	P value
Self-Esteem to depression	-0.37	0.21	-0.14	-1.788	>.05
Self-Esteem to anger	-0.33	0.13	-0.17	-2.471	<.02
Anger to depression	0.31	0.10	0.23	3.059	<.005
Racism to self-esteem	-0.09	0.03	-0.20	-3.159	<.005
Racism to anger	0.31	0.06	0.34	5.293	<.0005
Stress to depression	0.47	0.19	0.20	2.412	<.01
Stress to self-esteem	-0.44	0.06	-0.49	-7.380	<.0005
Stress to anger	0.42	0.12	0.24	3.399	<.005
Racism to self-esteem to depression	0.14	0.04	0.11	3.356	<.0005
Racism to anger to depression	0.03	0.02	0.11	1.956	.05
Stress to self-esteem to depression	0.34	0.10	0.14		
Stress to anger to depression	0.34	0.06	0.14	3.236	<.005
Self-Esteem to anger to depression	-0.10	0.05	-0.04	-1.932	>.05

Hypothesis 10

As hypothesized, perceived racism had an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger (.11, $p < .05$; see Table 6). Thus, hypothesis 10 was supported.

Hypothesis 11

As hypothesized, perceived stress had an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger (.14, $p < .05$; see Table 6). Thus, hypothesis 11 was supported.

Table 6
Direct, Indirect, and Total Effects of Study Variables

Variable		Effect		
Dependent	Independent	Direct	Indirect	Total
Depression	Perceived Stress	.20**	.14*	.34*
	Perceived Racism	.00	.11*	.11*
	State Anger	.23**	.00	.23*
	Self-Esteem	-.14	-.04	-.18*
Self-Esteem	Perceived Stress	-.49**	.00	-.49*
	Perceived Racism	-.20**	.00	-.20*
State-Anger	Perceived Stress	-.24***	.08*	.33*
	Perceived Racism	.34***	.03*	.37*
	Self-Esteem	.17*	.00	-.17*

*p < .05, **p < .01, *** p < .001

Based on the sum of the direct and indirect effects, the total effect of perceived stress on depression was .34; the total effect of perceived racism on depression was .11, which is also the indirect effect; the total effect of self-esteem on depression was -.18; total effect of anger on depression was .23, which is also the direct effect. In addition, the variables in the model accounted for 22% of the variance in depressive symptoms model is presented in Figure 3.

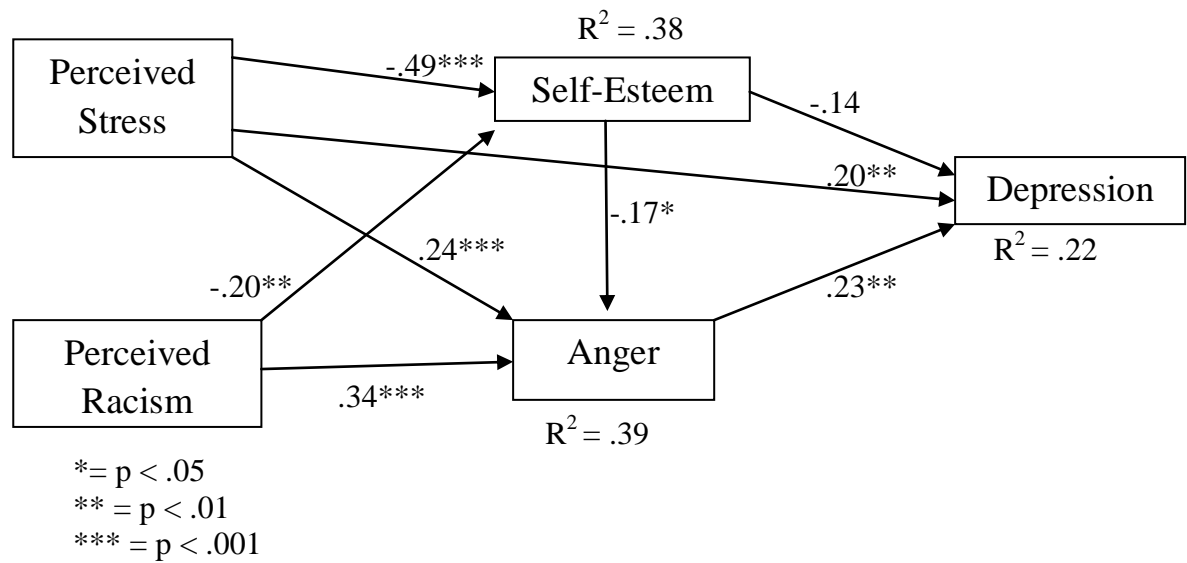


Figure 3. Empirical Results of Testing the Over-Identified Causal Model of Depression.

Additional Findings

Using Pearson correlations, relationships between demographic variables and depression were examined for additional findings. The correlation between depression and income level was statistically significant but weak ($r = -.16, p = .02$), such that the lower the income level the higher the levels of depression reported. There were no statistically significant correlations between depression and any other demographic variable. The correlation between age and depression was $r = .06, p = .43$. The correlation between number of children and depression was $r = -.06, p = .36$. The correlation between children's ages and depression was $r = .06, p = .40$. The correlation between educational level and depression was $r = -.09, p = .21$. The correlation between employment status and depression was $r = -.03, p = .65$.

Chapter V

Discussion of the Findings

The purpose of the study was to develop and test a theory of depression for Black single mothers via causal modeling. In addition, the research tested the direct effects of perceived stress on depression, anger, and self-esteem, the direct effects of perceived racism on anger and self-esteem and the direct effects of self-esteem on anger and depression, and the direct effect of anger on depression. The indirect effects of perceived stress and racism on depression through self-esteem and anger were also examined. This chapter interprets the findings of the hypotheses tested with references to the theories that generated the relationships. Additional findings are also discussed.

Model Fit

Hypothesis 1 stated that there would be no statistically significant difference between the model and the data and, that there would be a good fit of the model with the data. As suggested by Pedhazur (1997), this hypothesis was derived from a theoretical formulation about the pattern of causation among the variables being studied. The theory developed in this study generated an over-identified causal model of depression in Black single mothers. Based on all of the indicators used, the overall model had an excellent fit with the data, providing strong empirical support for the overall theory developed for Black single mothers. The causal relationships predicted in the model were specified correctly according to the standardized residuals and modification indices.

The path coefficients estimated in the model were based on correlation coefficients that were statistically significant and in the direction hypothesized; most were moderate to moderately strong. With the exception of the association between self-

esteem and depression, all of the hypothesized relationships in the model were statistically significant, but the path coefficients were not as strong as their associated correlations, as might be expected with structural equation modeling. Despite the strong empirical support for the overall fit of the model with the data, the direct effects of the hypothesized relationships were not especially powerful. Each hypothesis will be discussed separately.

Self-Esteem and Depression

Hypothesis 2 stated that self-esteem has a negative and direct effect on depression. The hypothesis was derived from theory that proposed that low self-esteem and feelings of unworthiness leads to and is a source of depression (Beck 1967; Crocker & Wolfe, 2001; Epstein, 2006). The theoretical literature is replete with propositions suggesting an inverse relationship between self-esteem and depression (Coopersmith, 1967; Harter, 1999; Smelser, 1989), and correlational studies have consistently supported the relationship between the two variable in low-income African American single mothers (Hatcher 2008, 2009; Lutenbacher, 2002; Peden, Rayens, Hall & Grant, 2004). Likewise, in this study, the correlation between self-esteem and depression was inverse and statistically significant, and moderately strong (see Table 4). However, this hypothesis was not supported when tested in the model; the path coefficient was not statistically significant ($Beta = .14, p > .05$)

One possible explanation for this finding is the use of the LISREL program to estimate the path coefficients in the causal model. With this program, each hypothesized relationship is estimated by controlling for the influence of other variables in the model (Joreskog & Sorbom, 1993). Thus, the moderately strong correlation found between self-esteem and depression in this study may be spurious, and possibly influenced by other variables in the model, specifically perceived stress and perceived racism. When these

variables were controlled for in the model, the relationship between self-esteem and depression was not supported.

Similar findings were reported by Yarcheski and Mahon (2000) who tested a causal model of depression in early adolescents. Despite a moderate and statistically significant inverse correlation found between self-esteem and depression, when estimated in the causal model using a LISREL program, the path coefficient was not statistically significant. The researchers attributed this finding to controlling for the influence of other variables in the model.

This explanation for the findings, if correct, has implications for theories proposing a relationship between self-esteem and depression, which appears to have no direct causal link. Future theoretical work concerning the association needs to consider antecedent and mediator variables that create and/or help to explain the relationship between self-esteem and depression. The resultant theory will likely be more complex and better account for the association between self-esteem and depression.

Self-Esteem and Anger

Hypothesis 3 stated that self-esteem has a negative and direct effect on anger. The hypothesis was derived from theory that proposed that anger is an outcome of low self-esteem (Beck 1999; Clark, 2002; Fernando, 1984). The hypothesis and underlying theory were supported when testing Hypothesis 3 in this study, but the path coefficient ($Beta = -0.17, p < .05$) was the weakest in the model. Although Beck (1999) proposed that threats to self-esteem can result in anger as an emotional response to feeling devalued, and Clark (2002) explained that individuals respond with anger when they feel a lowering of self-esteem, the results of testing this relationship in the model suggest that the theory is weak, as applied to Black single mothers. Thus, cultural reasons may account, in part, for why the theory was weakly supported in this study.

Anger and Depression

Hypothesis 4 stated that anger has a positive and direct effect on depression. The hypothesis was derived from theory that proposed that anger can lead to or increase the risk of feelings of depression (Robbins, 2000; Tavris, 1989). This hypothesis and underlying theory were supported when testing Hypothesis 4 in this study. Hypothesis testing demonstrated that anger had a small positive effect on depression ($Beta = 0.23, p < .05$) in Black single mothers. Additional theoretical propositions suggest a positive relationship between anger and depression (Greenberg & Paivio, 1997; Robbins, 2000).

Though small, the direct effect of anger on depression was the most powerful path coefficient in the model, suggesting that anger is the most significant pathway to depression in Black single mothers. The present finding provides support to theoretical propositions and extends empirical findings to a sample of Black single mothers of varying income levels. The small effect size in Black single mothers, in part, may be due to cultural reasons.

Perceived Racism and Self-Esteem

Hypothesis 5 stated that perceived racism has a negative and direct effect on self-esteem. The hypothesis was derived from theory that proposed that perceived racism is an antecedent to low self-esteem and perception of racist attacks cause blows to self-worth (Fernando, 1984; Wade 1987). This hypothesis and underlying theory were supported when testing Hypothesis 5 in this study. Williams and Williams-Morris (2000) explain that in a racist society, devaluation of a person's race and culture leads to the perception of the self as worthless. Hypothesis-testing demonstrated a weak negative path coefficient between perceived racism and self-esteem ($Gamma = -.20, p < .05$) in Black single mothers, confirming a direct causal link between the two variables. This

finding adds to the body of knowledge regarding this relationship between perceived racism and self-esteem.

Perceived Racism and Anger

Hypothesis 6 states that perceived racism has a positive and direct effect on anger. The hypothesis was derived from theory that proposed that perceived racism is antecedent to anger (Feagin & McKinney, 2003; Paradies, 2006). The hypothesis and underlying theory were supported when testing Hypothesis 6 in this study. Paradies (2006) posited that anger is an emotional response to racism. Feagin and McKinney (2003) proposed that anger is an outcome of perceived racism since anger over everyday racism stems from social situations perceived as racist events. Hypothesis-testing demonstrated a moderate positive path coefficient between perceived racism and anger in a sample of Black single mothers ($\text{Gamma} = .34, p < .05$). In the model, perceived racism had a stronger effect on anger than on self-esteem, which is consistent with theory that proposes that anger is a response to perceived injustice or unfair treatment as is inherent in perceiving racism (Spielberger, 1999). This is the first study to test the causal link between these two variables in solely Black single mothers and the findings suggests that the relationship between anger and perceived racism is fairly strong in this defined population. This finding therefore extends the theory and adds to the body of knowledge regarding the relationship between perceived racism and anger for Black single mothers.

Perceived Stress and Depression

Hypothesis 7 stated that perceived stress has a positive and direct effect on depression. This hypothesis was derived from theory that proposed that depression

results from stressful situations and events (Hammen, 2000; Monroe & Harkness, 2005). The hypothesis and underlying theory were supported when testing Hypothesis 7 in this study. Hammen (2000) argued that stressful life events lead to and precipitate depression. Monroe and Harkness (2005) also proposed that stressful events are essential for initial episodes of depression. Hypothesis-testing demonstrated a positive weak path coefficient between perceived stress and depression in Black single mothers in the present model ($\text{Gamma} = .20, p < .05$), providing evidence of a direct causal link between the two variables. The findings contribute to the body of literature on the relationship between perceived stress and depression in Black single mothers.

Perceived Stress and Self-Esteem

Hypothesis 8 stated that perceived stress has a direct and negative effect on self-esteem. The hypothesis was derived from theory that proposes that stressful situations and/or negative stressful events lower self-esteem by creating threats to individual feelings of self-worth (Beck 1967; Crocker & Wolfe, 2001; Mruk, 1995). Theory proposes that levels of stress are antecedent to levels of self-esteem (Beck, 1999; Mruk, 1995). This hypothesis and underlying theory were supported when testing Hypothesis 8. Hypothesis-testing demonstrated a negative and moderately strong direct effect between stress and self-esteem ($\text{Beta} = -.49, p < .05$) in the present model and the path coefficient was the most powerful one in the model. This moderately strong direct causal link between these two variables suggests that stress levels significantly influenced and diminished self-esteem in this sample of Black single mothers.

Perceived Stress and Anger

Hypothesis 9 stated that stress has a positive and direct effect on anger. The hypothesis was derived from theory that proposed that anger is an outcome of unpleasant stress (Berkowitz, 2003; Novaco, 1985). The hypothesis and underlying theory were supported when testing Hypothesis 9 in this study. Berkowitz (2003) posited that unpleasant social stresses generate anger. Novaco (1985) proposed that stressful situations contribute to the occurrence of anger as a reaction. Hypothesis-testing demonstrated a positive weak path coefficient between perceived stress and anger in Black single mothers ($\text{Gamma} = .24, p < .05$). This study extends the theory above regarding the relationship between stress and anger to Black single mothers, since a direct causal link between these two variable was found.

Perceived Racism, Self-Esteem, Anger, and Depression

Hypothesis 10 stated that perceived stress would have an indirect effect on depression through both self-esteem and anger and the relationship between self-esteem and anger. The hypothesis was derived from a series of theoretical propositions that suggest a relationship between perceived racism and self-esteem (Williams & Williams-Morris, 2000; Wolfe, 1987), between perceived racism and anger (Feagin & McKinney, 2003; Paradies, 2006), between self-esteem and depression (Crocker & Wolfe, 2001; Epstein, 2006), between self-esteem and anger (Beck, 1999; Clark, 2002) and between anger and depression (Greenberg & Paivio, 1997; Robbins, 2000). Fernando (1984) explained that perceiving racism leads to depression via blows to self-esteem and that the lowering of self-esteem results in symptoms of anger. Since the relationships between perceived racism and self-esteem, between self-esteem and anger, and between anger

and depression were supported in the model, Fernando's complex pathway to depression from perceived racism to self-esteem, to anger, and finally to depression was supported in the model. The hypothesis and underlying theory were weakly supported when testing Hypothesis 10 in this study. LISREL analysis revealed a statistically significant small indirect effect of perceived racism on depression through self-esteem and anger (.11, $p < .01$). The weak indirect support is due to the complex and extensive relationships leading from perceived racism to depression.

Perceived Stress, Self-Esteem, Anger, and Depression

Hypothesis 11 stated that perceived stress would have an indirect effect on depression through both self-esteem and anger and the relationship between self-esteem and anger. The hypothesis was derived from a series of theoretical propositions that suggest a relationship between perceived stress and self-esteem (Beck, 1999; Crocker & Wolfe, 2001), between perceived stress and anger (Berkowitz, 2003; Novaco, 1985), between self-esteem and depression (Crocker & Wolfe, 2001; Epstein, 2006;), between self-esteem and anger (Beck, 1999; Clark, 2002) and between anger and depression (Greenberg & Paivio, 1997; Robbins, 2000). The hypothesis and underlying theory were weakly supported when testing hypothesis 11 in this study. LISREL analysis revealed a statistically significant small indirect effect of perceived stress on depression through self-esteem and anger and the relationship between self-esteem and anger (.14. $p < .01$). Considering the extensive pathway described above, the weak indirect effect of perceived stress on depression is not surprising.

Additional Findings

Income level.

There was a statistically significant inverse correlation between income and depression level ($r = -.16, p = .02$). This finding is consistent with prior research examining depression in mothers. Smith-McKeever, Towe, & Gao (2012) found a negative relationship between mothers' income and depression in a sample containing 1053 Black mothers ($B = -.15, p < .0001$). Hilton and Kopera-Frye (2006) found a negative correlation between income and depression in a sample of 627 White and African American mothers ($r = -.16, p < .01$). Jackson, Bentler, and Franke (2008) found a negative correlation ($r = -.22, p < .01$) between income and depressive symptoms in a sample of 178 low-income Black single mothers. The present finding, in light of these accrued findings, suggests that mothers with less income are more apt to report symptoms of depression. However, the relationship is very weak across studies.

Mother's age.

The correlation between mother's age and depressive symptoms was not statistically significant, which is consistent with findings in several other studies in Black single mothers (Coiro, 2001; Gyamfi, Brooks-Gunn, & Jackson, 2001; Hatcher 2008; Kub et al., 2009). However, in studies of samples containing Black and White mothers combined (Horwitz et al., 2007; Smith-McKeever et al., 2012), and Black women in general (McKnight-Eily et al., 2009), younger mothers were found to be more depressed than older mothers. These mixed results suggest that more theory and research is needed to clarify the relationship between mother's age and depressive symptoms in Black single mothers.

Number of children.

There was no statistically significant correlation between the number of children in the household and depressive symptoms. This finding is consistent with findings in similar samples of low-income Black mothers (Coiro, 2001; Gyamfi et al., 2001; Jackson et al., 2008; Odom & Vernon-Feagins, 2010) and suggests that levels of depression are not related to the number of children reported by Black single mothers.

Ages of children.

Interestingly, the correlation between the childrens' ages and mothers' depression level was not significant. In similar samples, Horwitz et al. (2007) and Odom and Vernon-Feagins (2010) found that mothers with younger children (preschool-age) were more depressed ($r = .10, p < .05$), while Lara-Cinisomo and Griffin (2008) found higher depression in mothers with only adolescents. More theory is needed to explain the relationship between children's ages and depression in Black single mothers.

Education.

In this study, the correlation between education and depression in Black single mothers was not statistically significant, which is consistent with findings in several other studies of similar samples (Gyamfi et al., 2001; $r = -.09, p > .05$ (employed mothers); Hatcher, 2008). However, most other studies reported statistically significant negative correlations between education and depression in Black single mothers (Gyamfi et al., 2001; $r = -.21, p < .05$ (non-employed mothers); Jackson et al., 2008; $r = -.22, p < .01$; Odom & Vernon-Feagans, 2010; $r = -.17, p < .001$; Smith-McKeever et al., 2012; $B = -.28, p < .0001$), but the correlations were very weak. Theories are needed that explain the relationship between education and depression.

Employment Status.

The relationship between employment status and depressive symptoms was not statistically significant. This finding is consistent with several studies that did not find this relationship to be statistically significant in Black single mothers (Coiro, 2001; Gyamfi et al., 2001; Odom & Vernon-Feagans, 2010). However, negative relationships between depressive symptoms and employment status (Jackson et al., 2008, $r = -.19$, $p < .05$; Samuels-Dennis, 2007; $B = -.619$, $p < .001$) have also been found in other samples of Black single mothers. In addition, several other studies have found that employed mothers reported statistically significant less depressive symptoms ($p < .05$) than non-employed mothers in samples containing low-income Black mothers (Hatcher, 2008; Kub et al., 2009; Peden et al., 2004). These mixed results suggest that more theory and research is needed to explain the association of employment status to depressive symptoms in Black single mothers.

Chapter VI

Summary, Conclusions, Implications, and Recommendations

Summary

This study developed and tested a theory to gain a better understanding of depression in a sample of Black single mothers. The study empirically tested the fit of a theoretically derived model of depression with the data. This study also tested the direct effects between perceived stress and (a) depression, (b) self-esteem, and (c) anger, the direct effects between perceived racism and (a) self-esteem and (b) anger, the direct effects of self-esteem on (a) anger and (b) depression, and the direct effect of anger on depression. In addition, the indirect effects of perceived racism and perceived stress on depression via self-esteem and anger were also tested.

Depression is a feeling or symptom (Beck, 1967) and a clinical disorder recognized by its symptomatology (Radloff, 1977). Theorists suggest that depression is multi-dimensional since its symptoms are expressed affectively, somatically, interpersonally, and cognitively as experienced by those who suffer from this phenomenon (Bonime, 1960; Bibring, 1953). Depression is characterized by guilt, withdrawal, irritability, gloom, self-hatred, psychomotor retardation, confusion, helplessness and hopelessness. In African American women, symptoms of depression are expressed somatically, affectively, and interpersonally/socially as fear, shame, helplessness, fatigue, slowed reactions, sadness, guilt, social isolation, and suicidality (Nicolaidis et al., 2010; Waite & Killiam, 2007, 2009).

Self-esteem is a positive or negative attitude toward a the self and a feeling that one is competent and worthy of living (Mruk, 1995; Rosenberg, 1965; Tafarodi & Milne,

2002). Self-esteem is dynamic existing on a continuum from high to low as one's competence and worthiness is continuously evaluated positively or negatively (Coopersmith, 1967; Tafori & Milne, 2002). Theorists (Epstein, 2006) have proposed a direct negative effect of self-esteem on depression. It has been proposed that low self-esteem and negative views of the self are direct sources and precipitator of depression (Beck, 1967), since depression is a consequence of feeling unsuccessful and unworthy (Coopersmith, 1967). Therefore, this study tested the theory that self-esteem has a direct negative effect on depression. Researchers have found a strong negative relationship between self-esteem and depression in low-income single mothers (Lutenbacher, 2002; Peden, Rayens, Hall, & Grant, & Peden 2004), including Black low-income mothers (Hatcher, 2008, 2009).

Anger is a subjectively experienced state (Diguseppe & Tafrate, 2007; Spielberger & Sydeman, 1988), which is a response to provocation (Novaco, 1975), elicited by perceived threats to a person (Diguseppe & Tafrate, 2007). Theorists (Baumeister, Boden, & Smart, 1996; Beck, 1999) have proposed a direct negative effect of self-esteem on anger. They suggested that anger is an outcome of low self-esteem, since threats to self-esteem can arouse anger and therefore anger is an emotional response or consequence of low self-esteem. Therefore, this study tested the theory that self-esteem has a direct negative effect on anger. Researchers have found a strong negative relationship between self-esteem and anger in adults (Fornells-Ambrojo & Garety, 2009; Furman & Thompson, 2002; Menzel, 1998) and single mothers (Lutenbacher, 2002).

Theorists (Greenberg & Paivio, 1997; Tavis, 1989) have proposed a direct positive effect of anger on depression. They suggested that depression is a consequence

of anger. Therefore, this study tested the theory that anger has a direct positive effect on depression. Researchers have found positive associations between anger and depression in single mothers (Lutenbacher, 2002) and in women (Bruehl, Burns, Chung, Ward, & Johnson, 2002; Jackson & Emery, 2011; Tan & Carfagnini, 2008).

Perceived racism is unfair treatment sensed because of one's ethnicity or culture of origin (Brondolo, Kelly et al., 2005). Perceived racism also involves sensing a belief or attitude of superiority or inferiority due to one's ethnicity (McNeilly et al., 1996). It is a multi-dimensional experience which involves sensing a racist event, responding emotionally and behaviorally, and interpreting the event cognitively within one's belief system (McNeilly et al., 1996). Perceiving racism is stressful since it involves a feeling that one is being threatened or harmed while experiencing a culturally-specific stressor (Brondolo, Kelly et al., 2005; Landrine & Klonoff, 1996). Theorists have proposed a direct inverse effect of perceived racism on self-esteem. They suggested that perceived racism causes low self-esteem (Fernando, 1984; Wade, 1987), and therefore that low self-esteem is a consequence of perceiving racism. Therefore this study tested the theory that perceived racism has a direct negative effect on self-esteem. Researchers have found negative associations between perceived racism and self-esteem in adult women including Black adult and adolescent women (Bourguignon, Seron, Yzerbyt, & Herman, 2006; Liang & Fassinger, 2008; Rusch, Lieb, Bohus, & Corrigan, 2006).

Theorists have proposed a direct positive effect of perceived racism on anger. They suggested that anger is an outcome of perceiving racism (Feagin & McKinney, 2003) as an emotional consequence of unfair evaluations. Therefore, this study tested the theory that perceived racism has a direct positive effect on anger. Researchers have

found positive associations between perceived racism and anger in Black adults (Brondolo et al, 2008; Broudy et al., 2007; Steffen, McNeilly, Anderson, & Sherwood, 2003).

Theorists have proposed that perceived racism has a direct effect on self-esteem and anger (Feagin & McKinney, 2003; Fernando, 1984; Wade, 1987). Theorists have also proposed that self-esteem and anger have a direct effect on depression (Epstein, 2006; Monroe & Harkness, 2005; Greenberg & Paivio, 1997). In addition, theorists suggest that self-esteem has a direct effect on anger (Digiuseppe & Tafrate, 2007; Spielberger & Sydeman, 1988). Fernando (1984) also postulated that perceived racism indirectly affects depression through self-esteem and anger. Therefore, this study tested the theory that perceived racism has an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger.

Perceived stress is defined as the degree to which situations in one's life are appraised as unpredictable, uncontrollable and overloading (Cohen, Kamarck, & Mermelstein, 1988). Perceived stress is multi-dimensional and subjectively experienced as major life events or situations perceived as threatening with resultant psychological and physiological responses to these experiences (Brown & Harris, 1998; McEwin, 2006). Theorists have proposed a direct positive effect of perceived stress on depression (Monroe & Harkness, 2005). They suggested that perceived stress is antecedent to depression, since it leads to depression as an emotional reaction (McEwin, 2006; Post, 1992;). Therefore, this study tested the theory that perceived stress has a direct positive effect on depression. Researchers have found positive associations between stress and depression in low-income single mothers (Artinian, Washington, Flack, Hockman, & Jen,

2006; Hatcher, 2008).

Theorists have proposed a direct negative effect of perceived stress on self-esteem. It has been suggested that low self-esteem is an outcome of perceiving stress, since stress threatens one's sense of worthiness (Crocker & Wolfe, 2001; Wills & Langer, 1980). Therefore, this study tested the theory that stress has a direct negative effect on self-esteem. Researchers have found negative associations between stress and self-esteem in adult women (Lo, 2002) and low-income single mothers (Lutenbacher, 2002; Peden et al, 2004).

Theorists have proposed a direct positive effect of perceived stress on anger. These theorists suggested that anger is generated as an emotional reaction to stresses deemed unpleasant (Berkowitz, 2003; Berkowitz & Harmon-Jones, 2004). Therefore, this study tested the theory that perceived stress has a direct positive effect on anger. Researchers have found positive relationships between stress and anger in adults, including Black adults and parents (Bodenmann, Meuwly, Bradbury, Gmelch, & Ledermann, 2010; Broman & Johnson, 1988; Rodriguez & Richardson, 2007).

Theorists have proposed that perceived stress (Monroe & Harkness, 2005), self-esteem (Epstein, 2006), and anger (Greenberg & Paivio, 1997) have a direct effect on depression. In addition, theorists suggest that perceived stress has a direct effect on self-esteem (Crocker & Wolfe, 2001) and anger (Berkowitz, 2003, Berkowitz & Harmon-Jones, 2004). Theorists have also suggested that self-esteem has a direct effect on anger (Digiuseppe & Tafrate, 2007; Spielberger & Sydeman, 1988). Researchers have found significant correlations between each relationship examined above. Therefore this study tested the theory that perceived stress has an indirect effect on depression through self-

esteem and anger and through the relationship between self-esteem and anger.

The following hypotheses were formulated from the theory and tested in this study:

1. There is no statistically significant difference between the model and the data; and, there is a good fit of the model with the data.
2. Self-Esteem has a negative and direct effect on depression.
3. Self-Esteem has a negative and direct effect on anger.
4. Anger has a positive and direct effect on depression.
5. Perceived racism has a negative and direct effect on self-esteem.
6. Perceived racism has a positive and direct effect on anger.
7. Perceived stress has a positive and direct effect on depression.
8. Perceived stress has a negative and direct effect on self-esteem.
9. Perceived stress has a positive and direct effect on anger.
10. Perceived racism has an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger.
11. Perceived stress has an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger.

The final sample included 208 Black single mothers between the ages of 18 and 45. The majority of the women were older than 30 years of age (51.7%), while 44.9% fell between the ages of 20 and 29. Most of the women had between 1 and 2 children (61.1%), and nearly half the sample (46.6%) had preschool aged children aged 3 to 5 years. The sample was recruited from ten different sites in two inner cities in northern New Jersey. Of the 208 respondents who self-identified as Black, five were technically bi-racial. The majority of these single mothers had never been married (87.5%), 5.3%

were separated, 6.7% were divorced and .5% were widowed. The majority (61.4%) had completed high school, 17.9% completed a technical school, 13% had a two-year college degree, 3.9% had only completed eighth grade while 1.9% completed a four- year college degree and a master's degree. The majority of these women worked either full or part-time (53.2%), while 46.8% reported that they were either unemployed, disabled, or working temporarily. These women were mostly low-income. Even though a majority were employed (53.2%), a large minority had earnings less than \$5,000 dollars a year (43.6%), while 28.2% earned between \$5,000 and \$20,000 dollars a year, and 20.3% earned between \$20,000 and \$40,000 dollars a year. Only 8% earned more than \$40,000 dollars a year. Most of the full-time working mothers earned between \$21,000 and \$40,000 dollars a year, while the part-time working mothers earned between \$5,000 and \$20,000 dollars a year.

Approximately 30.2% of women reporting employment position indicated performing semi-skilled work, 23% reported that they were technicians or semiprofessionals, 17.4% reported performing clerical or sales work, 10.3% performed unskilled work, 8.7% reported being a manager or minor professional, 4.0% reported being an administrator or lesser professional, 3.2% reported being menial service workers, while only .8% reported being a major professional. The 208 respondents completed the Centers for Epidemiological Studies Depression (CES-D) Scale, the Rosenberg Self-Esteem Scale (RSES), The Spielberger State Anger Scale (STAXST), the Perceived Stress Scale (PSS), the Perceived Ethnic Discrimination Questionnaire Community Version Brief (PEDQ-CV-B) and a demographic data sheet. All of these instruments demonstrated good reliability for internal consistency (coefficient

alphas ranged from .84 to .96.).

The structural equation model was examined using the Lisrel 9.1 software program (Joreskog & Sorbom, 1993, 2006). Hypothesis 1, which states that there would be no statistically significant difference between the model and the data and that there would be a good fit of the model with the data in Black single mothers was supported ($X^2(1, 208) = .05, p = .82$). All of the fit indices were good indicating an excellent fit of the model with the data. No specification errors were present in the model. Hypothesis 2 which states that self-esteem would have a negative effect on depression in Black single mothers was not supported ($Beta = -.14, p > .05$). Hypothesis 3 which states that self-esteem will have a direct negative effect on anger in Black single mothers was supported ($Beta = -.17, p < .05$). Hypothesis 4 which states that anger has a direct positive effect on depression in Black single mothers was supported ($Beta = .23, p < .01$). Hypothesis 5 which states that perceived racism has a direct negative effect on self-esteem in Black single mothers was supported ($Gamma = -.20, p < .01$). Hypothesis 6 which states that perceived racism has a direct positive effect on anger in Black single mothers was supported ($Gamma = .34, p < .001$). Hypothesis 7 which states that perceived stress has a direct positive effect on depression in Black single mothers was supported ($Gamma = .20, p < .01$). Hypothesis 8 which states that perceived stress has a direct negative effect on self-esteem in Black single mothers was supported ($Gamma = -.49, p < .001$). Hypothesis 9 which states that perceived stress has a direct positive effect on anger in Black single mothers was supported ($Gamma = .24, p < .05$). Hypothesis 10 which states that perceived racism has an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger in Black single mothers was

supported (.11, $p < .05$). Hypothesis 11 which states that perceived stress has an indirect effect on depression through self-esteem and anger and the relationship between the latter in Black single mothers was supported (.14, $p < .05$). The total effect of perceived stress on depression was .34 and the total effect of perceived racism on depression was .11. The total effect of self-esteem on depression was -.18. The total effect of anger on depression was .23.

Conclusions

The overall fit of the theory of depression with the data was strongly supported empirically and there were no specification errors in the model. As stated by Pedhazur (1982), “one would have to conclude that the theory has survived the test in that it has not been disconfirmed” (p. 579).

All of the eleven hypotheses in the current study were derived from theory and all but one was supported empirically. The path coefficient between self-esteem and depression was not statistically significant. It was concluded that there is no direct causal link between the two variables and suggested that the theory linking self-esteem to depression might be more complex than explained in the literature. Based on the empirical support for each hypotheses in the theoretical model, it can be concluded that the relationships of perceived stress, perceived racism, self-esteem, and anger to depression, according to the pattern of causation specified in the model, provide an excellent explanation of depression in Black single mothers. It can be concluded that perceived racism has a direct effect on self-esteem and anger and an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger. It can be concluded that self-esteem has a direct effect on anger and that anger has

a direct effect on depression. It can also be concluded that perceived stress has a direct effect on depression, self-esteem and anger, and an indirect effect on depression through self-esteem and anger and the relationship between self-esteem and anger.

In conclusion, based on the fit of the model with the data, the theory of depression in Black single mothers, tested via causal modeling was not disconfirmed. As suggested by Pedhazur (1982), alternate models derived from sound theoretical formulations of depression deserve to be tested. However, Pedhazur (1982) cautions that this suggestion “should not be construed as an endorsement of the proliferation of overidentified models in search of the one that best fits the data” (p. 618). The role of theory is critical to testing alternate causal models of depression in Black single mothers.

Implications for Nursing

Although, on average, the Black single mothers in this study reported mild levels of depression, associated measures of variability suggested that a good number of participants experienced moderate to high levels of depression. According to the histogram performed, approximately 20% of the mothers reported moderately high or high levels of depression. Yet, these mothers were not diagnosed and treated for depression. As a first step, nurses working with Black single mothers in the community need to practice outreach by asking them to express their negative feelings and emotions. As a second step, when depression is suspected, nurses need to explore the perceived barriers Black single mothers have to health-seeking behaviors, counseling, and treatment for depression. Once these issues are resolved, the theory of depression supported in this study can be applied by nurses as a non-invasive intervention when working with depressed Black single mothers.

In the present model, anger had the most powerful direct effect on depression and perceived racism had the most powerful direct relationship on anger. Spielberger (1999) explained that anger is a response to unfair treatment and perceived injustice. Krieger (1999), postulated that perceiving or anticipating racial discrimination provokes anger which can be viewed as a socially-inflicted mental trauma. Greenberg and Paivio (1997) postulated that chronic anger can cause major psychological problems including depression. When anger is not expressed effectively, one can collapse into depression. Therefore, chronic anger when not managed properly can generate feelings of depression. Nurses can assist Black single mothers in managing anger and in developing more effective ways to cope and respond to the stress of perceiving racism so that depressive symptoms can be modified or minimized.

In the present model, perceived stress was significantly associated with anger and self-esteem and had the most powerful indirect effect on depression than any of the other variables in the model. On average, the mothers in this study reported high levels of perceived stress which have the potential to lower self-esteem, increase anger, and subsequently increase depressive symptoms. Since stressful life events and situations are often unavoidable, and are subjectively perceived, nurses can help single Black mothers identify the stressors in their lives with the goal of developing effective stress management techniques to manage negative emotions and feelings they experience with stress. The knowledge gained in this study can help nurses better understand the influence of stress on self-esteem, anger, and depression in this population and intervene accordingly.

The relationship between self-esteem and depression diminished when the

hypothesized path was estimated in the model. However, the results of this study provide a pathway from self-esteem to depression through anger. Therefore, nursing interventions that help these mothers feel good about themselves will decrease their anger and, in turn, decrease their reporting of depressive symptoms.

Recommendations

The theoretical and empirical findings of this study provide the direction for future research. Recommendations for subsequent studies include the following:

1. The theory of depression tested in this study needs to be replicated in a sample of middle to high income Black single mothers using Structural Equation Modeling (SEM). This model needs to be extended to determine if the theory is confirmed in women with more financial resources.
2. In this study, predictors of depression were examined. In order to better understand the impact of depression on the lives of Black single mothers and their children, theoretical outcomes of depression, such as positive health practices, should be examined in future research.
3. Mediation models need to be examined using theoretically relevant variables to help explain the relationship between self-esteem and depression.
4. Anger was the most powerful direct pathway to depression and perceived racism had the most powerful direct effect on anger in this model. Future studies should describe the prevalence of anger as a response to perceiving racism, and the specific coping mechanisms used to manage anger that potentially lessen depression in Black single mothers.
5. Alternative theories of depression for Black single mothers need to be developed

and tested using SEM to determine which model is most useful for practice.

6. If reciprocal theoretical propositions exist for depression, then non-recursive models using longitudinal designs need to be tested with SEM.

References

- American Psychiatric Association (APA) (2000). *Diagnostic and Statistical Manual of Mental Disorders*. Arlington VA: Author.
- American Psychological Association (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.
- Artinian, N. T., Washington, G. M. O., Flack, J. M., Hockman, E. M., & Jen, K. C. (2006). Depression, stress, and blood pressure in urban African American women. *Progress in Cardiovascular Nursing, 21*, 68-75.
- Averill, J. R. (1982). *Anger and aggression: An essay on emotion*. New York: Springer-Verlag.
- Baker, F. M. (2001). Diagnosing depression in African Americans. *Community Mental Health Journal, 37*, 31-38.
- Baumister, R. F., Smart, S. L., & Boden, J. M. (1996). Relation of threatened egotism to violence and aggression: The dark side of high self-esteem. *Psychological Review, 103*, 5-33.
- Beauboeuf-Lafontant, T. (2007). "You have to show strength" An exploration of gender, race, and depression. *Gender & Society, 21*, 28-51.
- Beck, A. T. (1967). *Depression clinical, experimental, and theoretical aspects*. New York: Harper & Row.
- Beck, A. T. (1999). *Prisoners of hate: The cognitive bases of anger, hostility, and violence*. New York: Harper Collins.
- Beevers, C. G. (2005). Cognitive vulnerability to depression: A dual process model. *Clinical Psychology Review, 25*, 975-1002.

- Bentler, P. M., & Bonett, D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588-606.
- Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin*, 107, 238-246.
- Berkowitz, L. (1998). Affective aggression: The role of stress, pain, and negative affect. In R. G. Geen & E. Donnerstein (Eds.), *Human aggression: Theories, research, and implications for social policy* (pp. 49-72). London: Academic Press.
- Berkowitz, L. (2003). Affect, aggression, and antisocial behavior. In R. K. Davidson, K. Scherer, & H. Goldsmith (Eds.), *Handbook of affective sciences* (pp.804-823). New York: Oxford University Press.
- Berkowitz, L., & Harmon-Jones, E. (2004). Toward an understanding of the determinants of anger. *Emotion*, 4,107–13
- Bibring, E. (1953). The mechanism of depression. In P. Greenacre (Ed.), *Affective disorders: Psychoanalytic contributions to their study*. New York: International University Press.
- Bodenmann, G., Meuwly, N., Bradbury, T. N., Gmelch, S., & Ledermann, T. (2010). Stress, anger, and verbal aggression in intimate relationships: Moderating effects of individual and dyadic coping. *Journal of Social and Personal Relationships*, 27, 408-424.
- Bollen, K. A. (1989). *Structural equations with latent variables*. New York: John Wiley.
- Bonime, W. (1960). Depression as a practice: Dynamic and therapeutic considerations. *Comprehensive Psychiatry*, 1, 194-198.
- Bonime, W. (1975). The psychodynamics of neurotic depression. *Journal of the American Academy of Psychoanalysis*, 4, 301-326.

- Bourguignon, D., Seron, E., Yzerbyt, V., & Herman, G. (2006). Perceived group and personal discrimination: Differential effects on personal self-esteem. *European Journal of Social Psychology, 36*, 773-789.
- Branden, N. (1969). *The psychology of self-esteem*. New York: Bantam.
- Broman, C. L., & Johnson, E. H. (1988). Anger expression and life stress among Blacks: Their role in physical health. *Journal of The National Medical Association, 80*, 1329-1334.
- Brondolo, E., Thompson, S., Brady, N., Appel, R., Cassells, A., Tobin, J. N., & Sweeney, M. (2005). The relationship of racism to appraisals and coping in a community sample. *Ethnicity & Disease, 15*, S5-14-5-19.
- Brondolo, E., Kelly, K. P., Coakley, V., Gordon, T., Thompson, S., Levy, E.,...& Tobin, J. N. R. (2005). The Perceived Ethnic Discrimination Questionnaire: Development and preliminary validation of a community version. *Journal of Applied Social Psychology, 35*, 335-365.
- Brondolo, E., Brady, N., Thompson, S., Contrada, R. J., Cassells, A., Tobin, J. N., & Sweeney, M. (2008). Perceived racism and negative affect: Analysis of trait and state measures of affect in a community sample. *Journal of Social and Clinical Psychology, 27*, 150-173.
- Broudy, R., Brondolo, E., Coakley, V., Brady, N., Cassells, A., Tobin, J. N., & Sweeny, M. (2007). Perceived ethnic discrimination in relation to daily moods and negative social interactions. *Journal of Behavioral Medicine, 30*, 31-43.
- Brown, G. W., & Harris, T. O. (1989). *Life events and illness*. New York: The Guilford Press.
- Browne, M. W. & Cudeck, R. (1993). Alternative ways of assessing model fit. In K.A. Bollen & J.S. Long (Eds). *Multivariate Behavioral Research, 24*, 445-455.

- Bruehl, S., Burns, J. W., Chung, O. Y., Ward, P., & Johnson, B. (2002). Anger and pain sensitivity in chronic low back pain patients and pain-free controls: The role of endogenous opioids. *Pain, 99*, 223-233.
- Cairney, J., Boyle, M., Offord, D. A., & Racine Y. (2003). Stress, social support and depression in single and married mothers. *Social Psychiatry and Psychiatric Epidemiology, 38*, 442-449.
- Cairney, J., Boyle, M., Lipman, E. L., & Racine, Y. (2004). Single mothers and the use of professionals for mental health care reasons. *Social Science Medicine, 59*, 2535-2546.
- Canady, R. B., Stommel, M., & Holzman, C. (2009). Measurement properties of the Centers for Epidemiological Studies Depression Scale (CES-D) in a sample of African American and non-Hispanic White pregnant women. *Journal of Nursing Measurement, 17*, 91-104.
- Caracciolo, B., & Giaquinto, S. (2002). Criterion validity of the Center for Epidemiological Studies Depression (CES-D) Scale in a sample of rehabilitation inpatients. *Journal of Rehabilitation Medicine, 34*, 221-225.
- Carpenter, J. S., Andrykowski, M. A., Wilson, J., Hall, L. A., Rayens, M. K., Sachs, B., & Cunningham, L. L. C. (1998). Psychometrics for two short forms of the Center for Epidemiologic Studies-Depression Scale. *Issues in Mental Health Nursing, 19*, 481-494.
- Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist, 54*, 805-816.
- Clark, L. (2002). SOS Help for emotions: Managing anxiety, anger & depression. Bowling Green, Kentucky: SOS Programs & Parents Press.

- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, S., Kamarck, T., & Mermelstein, R. (1988). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 385-396.
- Cohen, S., & Williamson, G. M. (1988). Perceived stress in a probability sample in the United States. In S. Spacapan & S. Okamp (Eds.), *The social psychology of health* (pp. 31-67). Newbury Park, CA: Sage.
- Coiro, M. J. (2001). Depressive symptoms among women receiving welfare. *Women & Health*, 32, 1-11.
- Combs, D. R., Penn, D. L., Cassisi, J., Michael, C., Wood, T., Wanner, J., & Adams, S. (2006). Perceived racism as a predictor of paranoia among African Americans. *Journal of Black Psychology*, 32, 87-104.
- Conner, K. O., Copeland, C. V., Grote, N. K., Rosen, D., Albert, S., McMurray, M. L., Reynolds, C. F., ... & Brown, C. (2010). Barriers to treatment and culturally endorsed coping strategies among depressed African-American older adults. *Aging & Mental Health*, 14, 971-983.
- Coopersmith, S. (1967). *The antecedents of self-esteem*. San Francisco: W.H. Freeman.
- Copeland, D., & Harbaugh, L. B. (2010). Psychosocial differences related to parenting infants among single and married mothers. *Issues in Comprehensive Pediatric Nursing*, 33, 129-148.
- Crocker, J., & Wolfe, C. T. (2001). Contingencies of self-worth. *Psychological Review*, 108, 593-623.
- Cruz, M., Pincus, H. A., Harman, J. S., Reynolds, C. F., & Post, E. P. (2008). Barriers to care-seeking for depressed African Americans. *International Journal of Psychiatry in Medicine*, 38, 71-80.

- Culhane, S. E., & Morera, O. F. (2010). Reliability and validity of the Novaco Anger Scale and Provocation Inventory and State-Trait Anger Expression Inventory-2 in Hispanic and non-Hispanic White student samples. *Hispanic Journal of Behavioral Sciences, 32*, 586-606.
- Daily, D. E. (2008). Conceptualizing perceived racism and its effect on the health of African-Americans: Implications for practice and research. *The Journal of the National Black Nurses Association, 19*, 73-80.
- Dibble, S. L., & Swanson, J. M. (2000). Gender differences for the predictors of depression in young adults with genital herpes. *Public Health Nursing, 17*, 187-194.
- Digiuseppe, R., & Tafrate, R. C. (2007). Understanding anger disorders. Oxford: University Press.
- Epstein, S. (2006). Conscious and unconscious self-esteem from the perspective of cognitive-experiential self-theory. In M. H. Kernis (Ed.), *Self-Esteem: Issues and answers* (pp. 69-85). New York: Psychology Press.
- Eun-OK, K. (2012). Theory and research. [Editorial]. *Nursing Research, 61*, 77.
- Feagin, J. R., & McKinney, K. D. (2003). *The many costs of racism*. New York: Rowman & Littlefield.
- Fernando, S. (1984). Racism as a cause of depression. *International Journal of Psychiatry, 30*, 41-49.
- Fornells-Ambrojo, M., & Garety, P. A. (2009). Understanding attributional biases, emotions and self-esteem in "poor me" paranoia: Findings from an early psychosis sample. *British Journal of Clinical Psychology, 48*, 141-162.

- Fuqua, D. R., Leonard, E., Masters, M. A., Smith, R. J., Campbell, J. L., & Fischer, P. C. (1991). A structural analysis of the State-Trait Anger Expression Inventory (STAXI). *Educational and Psychological Measurement, 51*, 439-446.
- Furman, K., & Thompson, K. J. (2002). Body image, teasing, and mood alterations: An experimental study of exposure to negative verbal commentary. *International Journal of Eating Disorders, 32*, 449-457.
- Gitlin, L. N., Hauck, W. W., Dennis, M. P., & Schulz, R. (2007). Depressive symptoms in older African-American and White Adults with functional difficulties: The role of control strategies. *Journal of the American Geriatric Society, 55*, 1023-1030.
- Greenberg, L. S., & Paivio, S. C. (1997). *Working with emotions in psychotherapy*. New York: The Guilford Press.
- Gyamfi, P., Brooks-Gunn, J., Jackson, A. P. (2001). Associations between employment and financial and parental stress in low-income single Black mothers. *Women Health, 32*, 119-135.
- Hammen, C. (2000). Interpersonal factors in an emerging developmental model of depression. In S. L. Johnson, A. M. Hayes, T. M. Field, N. Schneiderman, & P. M. McCabe (Eds.). *Stress, coping, and depression* (pp. 71-88). Mahwah, NJ: Lawrence Erlbaum.
- Hann, D., Winter, K., & Jacobsen, P. (1999). Measurement of depressive symptoms in cancer patients: Evaluation of the Center for Epidemiological Studies Depression Scale (CES-D). *Journal of Psychosomatic Research, 46*, 437-443.
- Hareli, S., & Weiner, B. (2002). Social emotions and personality inferences: A scaffold for a new direction in the study of achievement motivation. *Educational Psychologist, 37*, 183-193.

- Harrell, J. P. (2000). A multidimensional conceptualization of racism-related stress: Implications for the well-being of people of color. *American Journal of Orthopsychiatry*, 70, 42-57.
- Harter, S. (1999). *The construction of the self: A developmental perspective*. New York: The Guilford Press.
- Hatcher, J. (2008). Predictors of depression for low-income African American single mothers. *Journal of Health Disparities Research and Practice*, 2, 89-110.
- Hatcher, J. (2009). Psychometric properties of the Rosenberg Self-Esteem Scale in African American single mothers. *Mental Health Nursing*, 30, 70-77.
- Healthy People (2020) About healthy people. [Website]. Retrieved from <http://www.healthypeople.gov/>
- Hilton, J. M., & Kopera-Frye, K. (2006). Loss and depression in cohabiting and noncohabiting custodial single parents. *The Family Journal: Counseling and Therapy For Couples and Families*, 14, 28-35.
- Hollingshead, B. (1975). *Four Factor Index of Social Status*. New Haven, CT: Yale University.
- Horwitz, S. M., Briggs-Gowan, M. J., Storfer-Isser, A., & Carter, A. S. (2007). Prevalence, correlates, and persistence of maternal depression. *Journal of Women's Health*, 16, 678-691.
- Hox, J. J., & Bechger, T.M. (1998). An introduction to structural equation modeling. *Family Science Review*, 11, 354-373.
- Hutto, H., Kim-Goodwin, Y., Pollard, D., & Kemppainen, J. (2011). Postpartum depression among White, African American, and Hispanic low-income mothers in rural southeastern North Carolina. *Journal of Community Health Nursing*, 28, 41-53.

- Jackson, A. P., Bentler, P. M., & Franke, T. M. (2008). Low-wage maternal employment and parenting style. *Social Work, 53*, 267-278.
- Jackson, J. L., & Emery C. F. (2011). Illness knowledge moderates the influence of coping style on quality of life among women with congestive heart failure. *Heart & Lung, 40*, 122-129.
- Jones, H. L., Cross, W. E., & Defour, C. D. (2007). Race-related stress, racial identity attitudes, and mental health among Black women. *Journal of Black Psychology, 33*, 208-231.
- Joreskog, K. G., & Sorbom, D. (1989). *LISREL 7: A guide to the program and applications* (2nd ed.). Chicago, IL: SPSS.
- Joreskog, K., & Sorbom, D. (1993). *Lisrel 8: Structural Equation Modeling with the Simplis Command Language*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Joreskog, K. G., & Sorbom, D. (2006). *LISREL 8.80 for windows* [Complex Software]. Lincolnwood, IL: Scientific Software International.
- Kessler, R. C., Chiu, W. T., Denler, O., Merikangas, K. R., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication. *Archives of General Psychiatry, 62*, 617-627.
- Kline, R. B. (2005). *Principles and practice of Structural Equation Modeling*. New York: The Guilford Press.
- Kneipp, S. M., Welch, D. P., Wood, C. E., Yucha, C. B., & Yarandi, H. (2007). Psychosocial and physiological stress among women leaving welfare. *Western Journal of Nursing Research, 29*, 864-883.

- Krieger, N. (1999). Embodying inequality: A review of concepts, measures, and methods for studying health consequences of discrimination. *Social Inequalities and Health, 29*, 295-352.
- Krieger, N., Kosheleva, A., Waterman, P. D., Chen, J. T., & Koenen, K. (2011). Racial discrimination, psychological distress, and self-rated health among US-Born and foreign-born Black Americans. *Research and Practice, 101*, 1704-1713.
- Kub, J., Jennings, J. M., Donithan, M., Walker, J. M., Land, C. L., & Butz, A. (2009). Life events, chronic stressors, and depressive symptoms in low-income urban mothers with asthmatic children. *Public Health Nursing, 26*, 297-306.
- Landrine, H., & Klonoff, E. A. (1996). The Schedule of Racist Events: A measure of racial discrimination and a study of its negative physical and mental health consequences. *Journal of Black Psychology, 22*, 144-168.
- Lara-Cinisomo, S., & Ann Griffin, B. (2007). Factors associated with major depression among mothers in Los Angeles. *Women's Health Issues, 17*, 316-324.
- Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- Lazarus, R. S. (1977). Psychological stress and coping in adaptation and illness. In Z. J. Lipowski, D. R. Lipsitt, & P.C. Whybrow (Eds.), *Psychosomatic medicine: Current trends*(pp. 14-26). New York: Oxford University Press.
- Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Springer.
- Lazarus, R. S. (1991). *Emotion and adaptation*. New York: Oxford University Press.
- Lei, P., & Wu, Q. (2007). Introduction to structural equation modeling: Issues and practical considerations. *Educational Measurement: Issues and Practice, 26*, 33-43.

- Liang, C. T. H., & Frassinger, R. E. (2008). The role of collective self-esteem for Asian Americans experiencing racism-related stress: A test of moderator and mediator hypothesis. *Cultural Diversity and Ethnic Minority Psychology, 14*, 19-28.
- Lo, R. (2002). A longitudinal study of perceived level of stress, coping and self-esteem of undergraduate nursing students: An Australian case study. *Journal of Advanced Nursing, 39*, 119-126.
- Lutenbacher, M. (2002). Relationship between psychosocial factors and abusive parenting attitudes in low-income single mothers. *Nursing Research, 5*, 158-167.
- Luutonen, S. (2007). Anger and depression: Theoretical and clinical considerations. *Nordic Journal of Psychiatry, 61*, 246-251.
- Lyon, D. E., & Munro, C. (2001). Disease severity and symptoms of depression in Black Americans infected with HIV. *Applied Nursing Research, 14*, 3-10.
- Martin, C. H., & Dahlen, E. R. (2007). Anger response styles and reaction to provocation. *Personality and Individual Differences, 43*, 2083-2094.
- Makambi, K. H., Williams, C. D., Taylor, T. R., Rosenberg, L., & Adams-Campbell, L. (2009). An assessment of the CES-D scale factor structure in Black women: The Black women's health study. *Psychiatry Research, 168*, 163-170.
- Mathews, K. A., Owens, J. F., Edmundowicz, D., Lee, L., & Kuller, L. H. (2006). Positive and negative attributes and risk for coronary and aortic calcification in healthy women. *Psychosomatic Medicine, 68*, 355-361.
- McEwen, B. S. (1998). Protective and damaging effects of stress mediators. *The New England Journal of Medicine, 338*, 171-179.
- McEwen, B. S. (2006). Protective and damaging effects of stress mediators: Central role of the brain. *Dialogue in Clinical Neuroscience, 8*, 367-381.

- McKnight-Eily, L. R., Presley-Cantrell, L., Elam-Evans, L. D., Chapman, D. P., Kaslow, N. J., & Perry, G. S. (2009). Prevalence and correlates of current depressive symptomatology and lifetime diagnosis of depression in Black women. *Women's Health Issues, 19*, 243-251.
- McNeilly, M. D., Anderson, B. N., Armstead, C.A., Clark, R., Corbett, M., Robinson, E. L., Pieper, C. F.,... Lepisto, E. M. (1996). The Perceived Racism Scale: A multidimensional assessment of the experience of White racism among African Americans. *Health, Ethnicity, & Disease, 6*, 154-166.
- Menzel, L. K. I. (1998). Factors related to the emotional responses of intubated patients to being unable to speak. *The Journal of Acute and Critical Care, 27*, 245-252.
- Mitchell, A. M., Crane, P. A., & Kim, Y. (2008). Perceived stress in survivors of suicide: Psychometric properties of the Perceived Stress Scale. *Research in Nursing & Health, 31*, 576-585.
- Monroe, S. M., & Harkness, K. L. (2005). Life stress, the “kindling” hypothesis and the recurrence of depression: Considerations from a life stress perspective. *Psychological Review, 112*, 417-445.
- Mruk, C. (1995). *Self-esteem: Research, theory, and practice*. New York: Springer.
- National Institutes of Health (NIH) (2009a). [Website]. Health behavior change in people with mental disorders. Retrieved from National Institutes of Health Office of Extramural Research <http://grants.nih.gov/grants/guide/pa-files/PA-08-089.htm>
- National Institutes of Mental Health (NIMH) (2009b). [Website] What is depression? Retrieved from National Institute of Mental Health: <http://www.nimh.nih.gov/health/topics/depression/index.shtml>

- National Institutes of Mental Health (NIMH). (2011). Major Depressive Disorder among adults. Retrieved from www.nimh.nih.gov/statistics/1MDD_ADULT.shtml
- Needlman, R., Walders, N., Kelly, S., Higgins, J., Sofranko, K., & Drotar, D. (1999). Impact of screening for maternal depression in a pediatric clinic: An exploratory study. *Ambulatory Child Health, 5*, 61-71.
- Nicolaidis, C., Timmons, V., Thomas, M. J., Waters, A. S., Wahab, S., Mejia, A. & Mitchell, S. R. (2010). You don't go tell white people nothing: African American women's perspectives on the influence of violence and race on depression and depression care. *American Journal of Public Health, 100*, 1470-1476.
- Novaco, R. W. (1975). *Anger control: The development and evaluation of an experimental treatment*. London: Lexington Books.
- Novaco, R. W. (1985). Anger and its therapeutic regulation. In M. A. Chesney & R. H. Rosenman (Eds.). *Anger and hostility in cardiovascular and behavioral disorders* (pp. 203-226). Washington, DC: Hemisphere.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory*. New York: McGraw-Hill
- Odom, E. C., & Vernon-Feagans, L. (2010). Buffers of racial discrimination: Links with depression among rural African American mothers. *Journal of Marriage and Family, 72*, 346-359.
- Orucu, M. C., & Demir, A. (2008). Psychometric evaluation of Perceived Stress Scale for Turkish university students. *Stress and Health, 25*, 103-109.
- Paradies, Y. C. (2006). Defining, conceptualization and characterizing racism in health research. *Critical Public Health, 16*, 143-157.

- Patterson, F., Kerrin, K., Wileyto, P., & Lerman, C. (2008). Increase in ager symptoms after smoking cessation predicts relapse. *Drug and Alcohol Dependence*, 95, 173-176.
- Peden, A. R., Rayens, M. K., Hall, L. A., & Grant, E. (2004). Negative thinking and the mental health of low-income single mothers. *Journal of Nursing Scholarship*, 36, 337-344.
- Pedhazar, E. J. (1982). Path analysis. In E. J. Pedhazar (Ed). *Multiple regression in behavioral research: Explanation and prediction* (pp. 577-633). New York: Holt, Rinehart and Winston.
- Pedhazur, E. J. (1997). *Multiple regression in behavioral research: Explanation and prediction*. Philadelphia: Harcourt Brace College.
- Post, R. M. (1992). Transduction of psychosocial stress into the neurobiology of recurrent affective disorder. *The American Journal of Psychiatry*, 149, 999-1010.
- Radloff, L. S. (1977). The CES-D scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385-401.
- Robbins, P. R. (1993). *Understanding depression*: London: McFarland.
- Robbins, P. R. (2000). Anger, aggression and violence. Jefferson, NC: McFarland.
- Roberti, J. W., Harrington, L. N., & Storch, E. A. (2006). Further psychometric support for the 10-item version of the Perceived Stress Scale. *Journal of College Counseling*, 9, 135-147.
- Rodriguez, C. M., & Richardson, M. J. (2007). Stress and anger as contextual factors and preexisting cognitive schemas: Predicting parental child maltreatment risk. *Child Maltreatment*, 12, 325-337.

- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Rosenberg, M. (1979). *Conceiving the self*. New York: Basic Books.
- Rowley, S. J., Sellers, R. M., Chavous, T. M., & Smith, M. A. (1998). The relationship between racial identity and self-esteem in African American college and high school students. *Journal of Personality and Social Psychology*, 74, 715-724.
- Rusch, N., Lieb, K., A Bohus, M., & Corrigan, P. W. (2006). Self-stigma, empowerment, and perceived legitimacy of discrimination among women with mental illness. *Psychiatric Services*, 57, 399-402.
- Samuels-Dennis, J. (2007). Relationship among employment status, stressful life events, and depression in single mothers. *CJNR*, 38, 58-80.
- Schmitt, D. P., & Allik, J. (2005). Simultaneous administration of the Rosenberg Self-Esteem Scale in 53 nations: Exploring the universal and culture-specific features of global self-esteem. *Journal of Personality and Social Psychology*, 89, 623-642.
- Schreiber, R., Noerager, P., Stern, N. P., & Wilson, C. (1998). The contexts for managing depression and its stigma among Black West Indian Canadian women. *Journal of Advanced Nursing*, 27, 510-517.
- Schroevers, M. J., Sanderman, R. A., van Sonderen, E., & Ranchor, A. V. (2000). The evaluation of the Center for Epidemiologic Studies Depression (CES-D) scale: Depressed and positive affect in cancer patients and healthy reference subjects. *Quality of Life Research*, 9, 1015-1029.

- Schulz, A. J., Gravlee, C. C., Williams, D. R., Israel, B. A., Mentz, G., & Rowe, Z. (2006). Discrimination, symptoms of depression, and self-rated health among African American women in Detroit: Results from a longitudinal analysis. *American Journal of Public Health, 96*, 1265-1270.
- Seaton, E. K., & Yip, T. (2009). School and neighborhood contexts, perceptions of racial discrimination and psychological well-being among African American adolescents. *Journal of Youth & Adolescence, 38*, 153-163.
- Seaton, E. K. (2009). Perceived racial discrimination and racial identity profiles among African American adolescents. *Cultural Diversity and Ethnic Minority Psychology, 15*, 137-144.
- Seaton, E. K. (2010). The influence of cognitive development and perceived racial discrimination on the psychological well-being of African American youth. *Journal of Youth Adolescence, 39*, 694-703.
- Siefert, K., Williams, D. R., Finlayson, T. L., Delve, J., & Ismail, A. I. (2007). Modifiable risk and protective factors for depressive symptoms in low-income African American mothers. *American Journal of Orthopsychiatry, 1*, 113-123.
- Silber, E., & Tippet, J. S. (1965). Self-esteem: Clinical assessment and measurement validation. *Psychological Reports, 16*, 1017-1071.
- Sinclair, S. J., Blais, M. A., Gansler, D. A., Sandberg, E., Bistis, K., & Locicero, A. (2010). Psychometric properties of the Rosenberg Self-Esteem Scale: Overall and across demographic groups living within the United States. *Evaluation & the Health Profession, 33*, 56-80.

- Smelser, N. J. (1989). Self-esteem and social problems: An introduction. In A. M. Mecca, N.J. Smelser, & J. Vasconcellos (Eds.). *The social importance of self-esteem* (pp. 294-326) Los Angeles: University of California Press.
- Smith-McKeever, T. C., Rowe, M. D., Gao, W. (2012). Socioeconomic and other factors influencing depression: A comparison of Black and White mothers. *Journal of Ethnic & Cultural Diversity in Social Work, 21*, 1-19.
- Spielberger, C. D., & Sydeman, S. J. (1988). State-Trait Anxiety Inventory and State-Trait Anger Expression Inventory. In C.D. Spielberger (Ed.). *Manual for the State-Trait Anger Expression Inventory (STAXI)* (pp. 292-321) Odessa, FL: Psychological Assessment Resources.
- Spielberger, C. D. (1999). STAXI-2: State Ttrait Anger Expression Iinventory-2. Lutz, FL: Professional Resources Assessments.
- Sprague, J., Verona, A. E., Kalkhoff, W., & Kilmer, A. (2011). Moderators and mediators of the stress-aggression relationship: executive function and state anger. *Emotion, 11*, 61-73.
- Steffen, P. R., McNeilly, M., Anderson, N., & Sherwood, A. (2003). Effects of perceived racism and anger inhibition on ambulatory blood pressure in African Americans. *Psychosomatic Medicine, 65*, 746-750.
- Strauman, T. J. (2002). Self-regulation and depression. *Self and Identity, 1*, 151-157.
- Tabachnick, B. G., & Fidell, L. S. (2001). *Using multivariate analysis*. Boston: Allyn & Bacon.
- Tafarodi, R. S., & Milne, A. B. (2002). Decomposing global self-esteem. *Journal of Personality, 70*, 443-483.

- Tan, J., & Carfagnini, B. (2008). Self-silencing, anger and depressive symptoms in women: Implications for prevention and intervention. *Journal of Prevention & Intervention in the Community*, 35, 5-18.
- Tavris, C. (1989). *Anger: The misunderstood emotion*. New York: Simon & Schuster.
- Thomas, S. A., & Gonzalez-Prendes, A. A. (2009). Powerlessness, anger, and stress in African American women: Implications for physical and emotional health. *Health Care for Women International*, 30, 93-113.
- Ullman, J. B. (2001). Structural equation modeling. In B. G. Tabachnick & L. S. Fidell (2001). *Using multivariate statistics* (4th ed., pp. 653- 771). Needham Heights, MA: Allyn & Bacon.
- US Census (2010). US Census Bureau Quick Facts. Retrieved from U.S. Department of commerce: <http://quickfacts.census.gov/qfd/states/34/3474000.html>
- US Department of Health and Senior Services, Office of Minority Health (USDHSS OMH) (2011). Retrieved from US department of health and senior services: <http://minorityhealth.hhs.gov/templates/browse.aspx?lvl=1&lvlID=7>
- Wade, J. E. (1987). Race and raceness: A theoretical perspective of the Black American experience. In D. P. Aldridge & E. L. James (Eds.), *Africana studies* (pp. 163-175). Pullman, WA: Washington State University Press.
- Waite, R., & Killian, P. (2007). Exploring depression among a cohort of African American women. *Journal of the American Psychiatric Nurses Association*, 13, 161-169.
- Waite, R., & Killian, P. (2009). Perspectives about depression: Explanatory models among African American women. *Archives of Psychiatric Nursing*, 23, 323-333.

- Webb, M., Beckstead, J., Meininger, J., & Robinson, S. (2006). Stress management for African American women with elevated blood pressure: A pilot study. *Biological Research for Nursing*, 7, 187-196.
- Webb, M. S., & Carey, M. P. (2008). Tobacco smoking among low-income Black women: Demographic and psychosocial correlates in a community sample. *Nicotine & Tobacco Research*, 10, 219-229.
- Weissman, M. M., Sholomskas, D., Pottenger, M., Prusoff, B. A., & Locke, B. Z. (1977). *American Journal of Epidemiology*, 106, 203-214.
- Wesley, Y. (2003). Desire for children among Black women with and without HIV infection. *Journal of Nursing Scholarship*, 35, 37-43.
- West, L.M. Donovan, R. A., & Roemer, L. (2010). Coping with racism: What works and doesn't work for Black women? *Journal of Black Psychology*, 36, 331-349.
- Wilcox, H., Field, T., Prodromidis, M., & Scafidi, F. (1998). Correlations between the BDI and CES-D in a sample of adolescent mothers. *Adolescence*, 33, 565-577.
- Williams, D. R., & Williams-Morris, R. (2000). Racism and mental health: The African American experience. *Ethnicity & Health*, 5, 243-267.
- Williams, M. A. (1989). Nursing and minority research. [Editorial]. *Research in Nursing & Health*, 12, iii-iv.
- Williams, C. D., Taylor, T. R., Makambi, K., Harrell, A. J., Palmer, J. R., Rosenberg, L., & Adams-Campbell, L. L. (2007). CES-D four-factor structure is confirmed, but no invariant, in a large cohort of African American women. *Psychiatry Research*, 150, 173-180.
- Williams, D. R., Haile, R., Mohammed, S. A., Herman, A., Sonnega, J., Jackson, J. S., & Stein, D. J. (2012). Perceived discrimination and psychological well-being in the USA and South Africa. *Ethnicity & Health*, 17, 1355-7858.

- Wills, T. A., & Langner, T. S. (1980). Socioeconomic status and stress. In I. L. Ikutash & L. B. Schlesinger (Eds.), *Handbook on stress and anxiety* (pp.159-173). San Francisco, CA: Jossey-Bass.
- Wong, C. A., Eccles, J. S., & Sameroff, A. (2003). The influence of ethnic discrimination and ethnic identification on African American adolescents school and socio-emotional adjustment. *Journal of Personality, 71*, 1197-232.
- World Health Organization (2011). Mental health: depression. Retrieved from world health organization:
www.who.int/mental_health/management/depression/definision/en/
- Yarcheski, A., & Mahon, N. E. (2000). A causal model of depression in early adolescents. *Western Journal of Nursing Research, 22*, 879-894.

Appendix A

Centers for Epidemiological Studies Depression (CES-D) Scale

Directions: After reading each statement, please put a check (✓) on the line to indicate how often you have felt this way during the last week

DURING THE LAST WEEK:	<u>Less than 1 Day</u>	<u>1-2 Days</u>	<u>3-4 Days</u>	<u>5-7 Days</u>
1. I was bothered by things that usually don't bother me.	_____	_____	_____	_____
2. I did not feel like eating: my appetite was poor.	_____	_____	_____	_____
3. I felt that I could not shake off the blues even with help from my friends or family.	_____	_____	_____	_____
4. I felt that I was just as good as other people.	_____	_____	_____	_____
5. I had trouble keeping my mind on what I was doing.	_____	_____	_____	_____
6. I felt depressed.	_____	_____	_____	_____
7. I felt that everything I did was an effort.	_____	_____	_____	_____
8. I felt hopeful about the future.	_____	_____	_____	_____
9. I thought my life had been a failure.	_____	_____	_____	_____
10. I felt fearful.	_____	_____	_____	_____
11. My sleep was restless.	_____	_____	_____	_____
12. I was happy.	_____	_____	_____	_____

Continued on the next page

CES-D Scale

	<u>Less than 1 Day</u>	<u>1-2 Days</u>	<u>3-4 Days</u>	<u>5-7 Days</u>
13. I talked less than usual	_____	_____	_____	_____
14. I felt lonely.	_____	_____	_____	_____
15. People were unfriendly.	_____	_____	_____	_____
16. I enjoy life.	_____	_____	_____	_____
17. I had crying spells.	_____	_____	_____	_____
18. I felt sad.	_____	_____	_____	_____
19. I felt that people dislike me.	_____	_____	_____	_____
20. I could not get “going.”	_____	_____	_____	_____

Appendix B
Rosenberg Self-Esteem Scale

Directions: For each of the following statements, **circle** the number which best describes how you feel about yourself.

	<u>Strongly Agree</u>	<u>Agree</u>	<u>Disagree</u>	<u>Strongly Disagree</u>
1. On the whole, I am satisfied with myself.	1	2	3	4
2. At times, I think I am no good at all.	1	2	3	4
3. I feel that I have a number of good qualities.	1	2	3	4
4. I am able to do things as well as most other people.	1	2	3	4
5. I feel I do not have much to be proud of.	1	2	3	4
6. I certainly feel useless at times.	1	2	3	4
7. I feel that I am a person of worth, at least on an equal plane with others.	1	2	3	4
8. I wish I could have more respect for myself.	1	2	3	4
9. All in all, I am inclined to feel that I am a failure.	1	2	3	4
10. I take a positive attitude toward myself.	1	2	3	4

Appendix C
Part 1: STAXI-STATE

Directions: A number of statements that people use to describe themselves are given below. Read each statement and **circle** the number which indicates how you feel *right now*. There are no right or wrong answers. Do not spend too much time on any one statement. Mark the answer that best describes your present feelings.

HOW I FEEL RIGHT NOW

	<u>Not at all</u>	<u>Somewhat</u>	<u>Moderately So</u>	<u>Very Much So</u>
1. I am furious.	1	2	3	4
2. I feel irritated.	1	2	3	4
3. I feel angry.	1	2	3	4
4. I feel like yelling at someone.	1	2	3	4
5. I feel like breaking things.	1	2	3	4
6. I am mad.	1	2	3	4
7. I feel like banging on the table.	1	2	3	4
8. I feel like hitting someone.	1	2	3	4
9. I feel like swearing.	1	2	3	4
10. I feel annoyed.	1	2	3	4

Continued on next page

STAXI-State

HOW I FEEL RIGHT NOW

	<u>Not at all</u>	<u>Somewhat</u>	<u>Moderately So</u>	<u>Very Much So</u>
11. I feel like kicking somebody.	1	2	3	4
12. I feel like cursing out loud.	1	2	3	4
13. I feel like screaming.	1	2	3	4
14. I feel like pounding somebody.	1	2	3	4
15. I feel like shouting out loud.	1	2	3	4

Appendix D

Part 2: STAXI-Trait

Directions: Read each of the following statements that people have used to describe themselves, and then **circle** the appropriate number to indicate how you *generally* feel or react. There are no right or wrong answers. Do not spend too much time on any one statement.

Circle the answer that *best* describes how you *generally* feel or react.

	<u>Almost Never</u>	<u>Sometimes</u>	<u>Often</u>	<u>Almost Always</u>
16. I am quick tempered.	1	2	3	4
17. I have a fiery temper.	1	2	3	4
18. I am a hotheaded person.	1	2	3	4
19. I get angry when I'm slowed down by others.	1	2	3	4
20. I feel annoyed when I am not given recognition for doing good work.	1	2	3	4
21. I fly off the handle.	1	2	3	4
22. When I get mad, I say nasty things.	1	2	3	4
23. It makes me furious when I am criticized in front of others.	1	2	3	4
24. When I get frustrated I feel like hitting someone.	1	2	3	4
25. I feel infuriated when I do a good job and get a poor evaluation.	1	2	3	4

Part 3: STAXI-Expression

Directions: Everyone feels angry or furious from time to time, but people differ in the ways that they react when they are angry. A number of statements are listed below which people use to describe their reactions when they feel *angry* or *furious*. Read each statement and then **circle** the appropriate number to indicate how *often* you *generally* react or behave in the manner described when you are feeling angry or furious. There are no right or wrong answers. Do not spend too much time on any one statement.

How I Generally React or Behave When Angry or Furious.....

	<u>Almost Never</u>	<u>Sometimes</u>	<u>Often</u>	<u>Almost Always</u>
26. I control my temper.	1	2	3	4
27. I express my anger.	1	2	3	4
28. I take a deep breath and relax.	1	2	3	4
29. I keep things in.	1	2	3	4
30. I am patient with others.	1	2	3	4
31. If someone annoys me I'm apt to tell him or her how I feel.	1	2	3	4
32. I try to calm myself as soon as possible.	1	2	3	4
33. I pout or sulk.	1	2	3	4
34. I control my urge to express my angry feelings.	1	2	3	4
35. I lose my temper.	1	2	3	4
36. I try to simmer down.	1	2	3	4
37. I withdraw from people.	1	2	3	4

Continued on next page

STAXI-Expression

How I Generally React or Behave When Angry or Furious.....

	<u>Almost Never</u>	<u>Sometimes</u>	<u>Often</u>	<u>Almost Always</u>
38. I keep my cool.	1	2	3	4
39. I make sarcastic remarks to others.	1	2	3	4
40. I try to soothe my angry feelings.	1	2	3	4
41. I boil inside, but I don't show it.	1	2	3	4
42. I control my behavior.	1	2	3	4
43. I do things like slam doors.	1	2	3	4
44. I endeavor to become calm again.	1	2	3	4
45. I tend to harbor grudges that don't tell anyone about.	1	2	3	4
46. I can stop myself from losing my temper.	1	2	3	4
47. I argue with others.	1	2	3	4
48. I reduce my anger as soon possible.	1	2	3	4
49. I am secretly quite critical of others.	1	2	3	4
50. I try to be tolerant and understanding.	1	2	3	4

Continued on next page

STAXI-Expression

How I Generally React or Behave When Angry or Furious.....

	<u>Almost Never</u>	<u>Sometimes</u>	<u>Often</u>	<u>Almost Always</u>
51. I strike out at whatever infuriates me.	1	2	3	4
52. I do something relaxing to calm down.	1	2	3	4
53. I am angrier than I am willing to admit.	1	2	3	4
54. I control my angry feelings.	1	2	3	4
55. I say nasty things.	1	2	3	4
56. I try to relax.	1	2	3	4
57. I'm irritated a great deal more than people are aware of.	1	2	3	4

Appendix E
Brief PEDQ- Community Version

Think about your **ethnicity/race**. What **group** do you belong to? **Do you think of yourself as:** Asian? Black? Latino? White? Native American? American? Caribbean? Irish? Italian? Korean? Another group?

YOUR ETHNICITY/RACE: _____

How often have any of the things listed below happened to you, **because of your ethnicity?**

BECAUSE OF YOUR ETHNICITY/RACE ...

<i>Circle How often...</i>	<u>Never</u>		<u>Very Sometimes</u>		<u>Often</u>
1. How often have you been treated unfairly by teachers, principals, or other staff at school?	1	2	3	4	5
2. Have others thought you couldn't do things or handle a job?	1	2	3	4	5
3. Have others threatened to hurt you? (ex: said they would hit you)	1	2	3	4	5
4. Have others actually hurt you or tried to hurt you? (ex: kicked or hit you)	1	2	3	4	5
5. Have policemen or security officers been unfair to you?	1	2	3	4	5
6. Have others threatened to damage your property?	1	2	3	4	5
7. Have others actually damaged your property?	1	2	3	4	5
8. Have others made you feel like an outsider who doesn't fit in because of your dress, speech, or other characteristics related to your ethnicity?	1	2	3	4	5

Continued on next page

PEDQ-CV-B**BECAUSE OF YOUR ETHNICITY/RACE ...**

<i>Circle How often...</i>	<u>Never</u>		<u>Sometimes</u>		<u>Often</u>
9. Have you been treated unfairly by Co-workers or classmates?	1	2	3	4	5
10. Have others hinted that you are dishonest or can't be trusted?	1	2	3	4	5
11. Have people been nice to you to your face, but said bad things about you behind your back?	1	2	3	4	5
12. Have people who speak a different language made you feel like an outsider?	1	2	3	4	5
13. Have others ignored you or not paid attention to you?	1	2	3	4	5
14. Has your boss or supervisor been unfair to you?	1	2	3	4	5
15. Have others hinted that you must not be clean?	1	2	3	4	5
16. Have people not trusted you?	1	2	3	4	5
17. Has it been hinted that you must be lazy?	1	2	3	4	5

Appendix F
Perceived Stress Scale

Directions: These questions ask you about your feelings, thoughts and activities. **Circle** the number which indicates how often you have felt in the last month including today.

In the last month how often have you:

	<u>Never</u>	<u>Almost Never</u>	<u>Sometimes</u>	<u>Often</u>	<u>Fairly Often</u>
1. Been upset because of something that happened unexpectedly?	0	1	2	3	4
2. Felt that you were unable to control important things in your life?	0	1	2	3	4
3. Felt nervous and “stressed”?	0	1	2	3	4
4. Felt confident about your ability to handle your personal problems?	0	1	2	3	4
5. Felt that things were going your way?	0	1	2	3	4
6. Found that you could not cope with all the things you had to do.	0	1	2	3	4
7. Been able to control irritations in your life?	0	1	2	3	4
8. Felt that you were on top of things?	0	1	2	3	4
9. Been angered because of things that happened that were out of your control?	0	1	2	3	4
10. Felt difficulties were piling up so high that you could not overcome them?	0	1	2	3	4

Appendix G
Demographic Data Sheet

Directions: Please check (✓) or write the response that best answers the question.

1. Sex
 - 1.1 ☐ Male
 - 1.2 ☐ Female
2. Age _____
3. Marital Status
 - 3.1 ☐ Married
 - 3.2 ☐ Single Never Married
 - 3.3 ☐ Separated
 - 3.4 ☐ Divorced
 - 3.5 ☐ Widowed
4. Are you head of household? Yes _____ No _____
5. How many children do you have? | _____
6. Ages of the children _____, _____, _____, _____, _____, _____,
7. Race
 - 7.1 ☐ White
 - 7.2 ☐ Black
 - 7.3 ☐ Hispanic
 - 7.4 ☐ Asian
 - 7.5 ☐ Biracial
 - 7.5 ☐ Other (Specify) _____
8. Graduated (Highest Level Graduated):
 - 8.1 ☐ Eighth Grade
 - 8.2 ☐ High School
 - 8.3 ☐ Technical School
 - 8.4 ☐ Two-Year College
 - 8.5 ☐ Four-Year College
 - 8.6 ☐ Master's Program
 - 8.7 ☐ Doctoral Program

9. Employment
- 9.1 _____ Full-Time
- 9.2 _____ Part-Time
- 9.3 _____ Currently Unemployed
- 9.4 _____ Other (Specify) _____

10. Employment Position

Please specify type of work you do _____

11. Health Status: Are you presently (check answer)
- a. Receiving psychiatric care/counseling? Yes_____ No_____
- b. Taking antidepressant medications? Yes_____ No_____

12. What are two reasons that you get “down in the dumps.?”

- a. _____
- b. _____

13. Describe how you feel when you are “down in the dumps.”

- a. _____
- b. _____

14. State two things you do to help you feel better when you are “down in the dumps.”

1. _____
2. _____

15. Income

- 15.1 _____ Less than \$5000 a year
- 15.2 _____ Between \$5000 and \$20,000 a year
- 15.3 _____ Between \$20,000 and \$30,000 a year
- 15.4 _____ Between \$30,000 and \$40,000 a year
- 15.5 _____ Between \$40,000 and \$50,000 a year
- 15.6 _____ Between \$50,000 and \$60,000 a year
- 15.7 _____ Between \$60,000 and \$70,000 a year
- 15.8 _____ Greater than \$70,000 a year

Appendix H

RUTGERS UNIVERSITY
Office of Research and Sponsored Programs
ASB III, 3 Rutgers Plaza, Cook Campus
New Brunswick, NJ 08901

June 19, 2012

P.I. Name: Atkins
Protocol #: 12-719M

Rahshida Atkins
 5 Blossom Drive
 Ewing NJ 08638

Dear Rahshida Atkins: ✓

(Initial / Amendment / Continuation / Continuation w/ Amendment)

Protocol Title: "A Study About Depression in Black Single Mothers' Nature and Purpose of the Study"

This is to advise you that the above-referenced study has been presented to the Institutional Review Board for the Protection of Human Subjects in Research, and the following action was taken subject to the conditions and explanations provided below:

Approval Date:	5/24/2012	Expiration Date:	5/23/2013
Expedited Category:	7	Approved # of Subject(s):	208

This approval is based on the assumption that the materials you submitted to the Office of Research and Sponsored Programs (ORSP) contain a complete and accurate description of the ways in which human subjects are involved in your research. The following conditions apply:

- **This Approval**-The research will be conducted according to the most recent version of the protocol that was submitted. **This approval is valid ONLY for the dates listed above;**
- **Reporting**-ORSP must be immediately informed of any injuries to subjects that occur and/or problems that arise, in the course of your research;
- **Modifications**-Any proposed changes **MUST** be submitted to the IRB as an amendment for review and approval prior to implementation;
- **Consent Form(s)**-Each person who signs a consent document will be given a copy of that document, if you are using such documents in your research. The Principal Investigator must retain all signed documents for at least three years after the conclusion of the research;
- **Continuing Review**-You should receive a courtesy e-mail renewal notice for a Request for Continuing Review before the expiration of this project's approval. However, it is your responsibility to ensure that an application for continuing review has been submitted to the IRB for review and approval prior to the expiration date to extend the approval period;

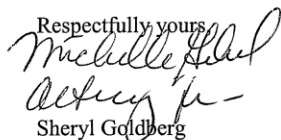
Additional Condition: Authorization from all participating research sites must be forwarded to the IRB prior to commencement of study procedures at these sites.

Additional Notes: Expedited Approval per 45 CFR 46.110

Failure to comply with these conditions will result in withdrawal of this approval.

Please note that the IRB has the authority to observe, or have a third party observe, the consent process or the research itself. The Federal-wide Assurance (FWA) number for the Rutgers University IRB is FWA00003913; this number may be requested on funding applications or by collaborators.

Respectfully yours,



Sheryl Goldberg
 Director of Office of Research and Sponsored Programs
 gibel@grants.rutgers.edu

cc: Adela Yarcheski

Appendix I Informed Consent Form

Nature and Purpose of the Study

You are invited to participate in a research study that is being conducted by Rahshida Atkins, MS, APN, in the Nursing Department at Rutgers, the State University of New Jersey. The purpose of this research is to develop a theory about Black single mothers. Approximately 208 Black single mothers between the ages of 18 and 45 years old will participate in the study, and each individual's participation will last about 60 minutes or less.

Description of the Study

The study procedures include filling out 5 questionnaires and a demographic data sheet. After you agree to participate and you meet requirements for this study, you will be taken to a quiet area, located in your healthcare or social service agency, to fill out 5 questionnaires pertaining to feelings and emotions along with a demographic data sheet. After you are finished filling out the forms, you will be given \$10.00 for your time.

Risks, Inconvenience, Discomforts

There are no foreseeable physical risks to participation in this study. Some questions on the survey deal with challenging issues, such as negative emotions, feelings and reactions to these emotions and feelings. Anyone who feels upset by questions on the survey will have the opportunity to discuss these concerns with the Principal Investigator. If you become upset, there are referrals available to The Family Guidance Center Counseling services at 946 Edgewood Avenue, Trenton

New Jersey at (609) 393-1626. In addition, you may choose not to answer any questions with which you are not comfortable. Other places for counseling referrals is listed on a referral list which you will received.

Benefits to Study Participant

The benefits of taking part in this study may include the satisfaction of knowing that you are contributing to the development of nursing science and satisfaction about having time to reflect on your feelings and actions. However, you may receive no direct benefit from taking part in this study.

Confidentiality of Participant's Information

This research is confidential. The research records will include some information about you and this information will be stored in such a manner that some linkage between your identity and the response in the research exists. Some of the information collected about you includes your age, income, work status, marital status and any other information listed on the demographic data sheet. If you wish to participate in a follow-up study, your name, address and telephone number will also be collected on a separate sheet of paper, which will be kept separate from your instrument packet and your personal information cannot be linked to the data you provide on the questionnaires and demographic data sheet. Please note that we will keep this information confidential by limiting individual's access to the research data and keeping it in a locked secure location. If and when necessary, encryption will be used to prevent unauthorized access to personal data. In addition, a secure internet network with antivirus and firewall protection will always be maintained and only the

primary investigator will have access to security passwords in order to prevent unauthorized access.

Consent

Participation in this study is voluntary. You may choose not to participate and you may withdraw at any time during the study procedures without any penalty to you. In addition, you may choose not to answer any questions with which you are not comfortable. All study data will be kept for 3 years in a locked file cabinet under double locks, at which time it will be shredded. All information on CD's flash-drives and hard-drives will be deleted.

If you have any questions about the study or study procedures, you may contact Rahshida Atkins, the principal investigator, at 5 Blossom Drive, Ewing, NJ 08638, by telephone at 609-672-1150 or by email at Rahshida.atkins@rutgers.edu

Or you can contact my research advisor Adela Yarcheski, PhD, FAAN at Rutgers, The State University of New Jersey, College of Nursing, Ackerson Hall, Room 360, 180 University Avenue, Newark, NJ 07102 or by telephone at 973-353-3842.

If you have any questions about your rights as a research subject, you may contact the Institutional Review Board for Protection of Human Subjects administrator at Rutgers, the State University of New Jersey, Office of Research and Sponsored Programs at Rutgers Plaza, New Brunswick, NJ 08901-8559, by telephone at 848-932-0150 or by Email: humansubjects@orsp.rutgers.edu

You will be given a copy of this consent form for your records.

Please sign below if you agree to participate in this research study:

Subject's Name (Print) _____
 Subject's Signature _____ Date _____
 Principal Investigator Signature _____ Date _____

Appendix J SGIC

Please **do not** put your name on the following questionnaires. However, please **carefully** complete the information requested below. It will serve as your identification number which will protect your anonymity.

1. Please CIRCLE the letter below that represents the first letter of your mother's first name.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

2. Please CIRCLE the letter below that represents the first letter of your father's first name.

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

3. How many older brothers do you have? _____

4. How many older sisters do you have? _____

5. Does your own first name begin with a letter in the:

FIRST half of the alphabet (i.e., A through M)? _____ (Please check)

SECOND half of the alphabet (i.e., N through Z)? _____ (Please check)

6. Please CIRCLE the month in which you were born.

January	February	March	April	May	June
July	August	September	October	November	December

7. Were you born in an even-numbered year?

Yes _____ No _____

8. Please CIRCLE the letter below that represents your own middle initial. (If you have no middle initial, Circle the letter N).

A	B	C	D	E	F	G	H	I	J	K	L	M
N	O	P	Q	R	S	T	U	V	W	X	Y	Z

Appendix K

Counseling/Psychological Support Services

1. Family Guidance Center
2300 Hamilton Avenue
Hamilton NJ, 08619
(609) 587-6641
2. Family Guidance Center
Trenton Center
946 Edgewood Ave.
Trenton, NJ 08618
609-393-1626
3. The Children's Home Society
of New Jersey
635 South Clinton Avenue
Trenton, NJ 08611
(609) 695-6274
4. Kasternakis Amy LCSW Cas
3564 Quakerbridge Rd
Trenton, New Jersey 08619-1206
Counseling & Mental Health
Community & Government Social Services
1 (609) 586-2880
5. Atlanticare Behavioral Health
120 White Horse Ave
Trenton, New Jersey 08610-2624
Counseling & Mental Health
1 (866) 604-5506
6. Fire Information Center
1823 Liberty St Trenton, New Jersey
08629-2207
Counseling & Mental Health
1 (609) 394-9555
7. The Counseling Center At Hamilton
2667 Nottingham Way Ste 3
Trenton, New Jersey · 08619-4116
Counseling & Mental Health
1 (609) 890-9998
8. Alexander William B PH D

2999 Princeton Pike
Trenton, New Jersey · 08648-3261
Counseling & Mental Health
1 (609) 406-1754

9. Serv Behavioral Health
6 Lohli Drive
Trenton, New Jersey 08690-2412
Counseling & Mental Health
1 (609) 588-0840
10. Rothman Doris Ed D
1687 Lawrenceville Rd
Trenton, New Jersey 08648-2901
Counseling & Mental Health
1 (609) 882-6815
11. Pfeffer Counseling Associates PA
3564 Quakerbridge Rd
Trenton, New Jersey 08619-1206
Counseling & Mental Health Doctor
1 (609) 890-1660
12. Serv Behavioral Health
138 Darrah Ln
Trenton, New Jersey 08648-3110
Counseling & Mental Health
1 (609) 671-0083
13. Perlin Linda MSW LCSW
2737 Princeton Pike
Trenton, New Jersey 08648-3220
Counseling & Mental Health
1 (609) 883-2577

Vita

Rahshida L Atkins

1975	Born August 30 in Rahway, New Jersey
1993	Graduated from Central High School, Newark, New Jersey
1997	B. S., Nursing, Rutgers College of Nursing, Newark, NJ
1997-2001	Employed by Park Manor Nursing Home, Bloomfield, NJ, Charge Nurse
1998-2004	Employed by Rutgers College of Nursing EOF Program, Nursing Clinical Instructor/Lecturer
1998- 2001	Employed by St. Barnabas Healthcare System, Newark, NJ Critical Care Nursing (CCN)
2001	M.S., Nursing, Rutgers Graduate School-Newark, NJ
2001-2004	Employed by Capital Health Systems, Trenton, NJ, CCN
2002	Employed by Mercer County Community College, West Windsor NJ, Nursing Clinical Instructor
2003-2004	Employed by Drexel University, Nursing, Philadelphia, PA, Adjunct Clinical Instructor
2009	NJ Nursing Initiative, Robert Wood Johnson Foundation Scholar
2010	Self-efficacy and the promotion of health for depressed single mothers, <i>Mental Health in Family Medicine</i> , 7, 155-168
2010	Kirby Award for Academic Excellence
2011	Dorothy J. DeMaio Award for Academic Excellence
2004-2012	Employed by Mercer County Children's Medical Daycare, Mercerville, NJ, Family Nurse Practitioner (FNP)
2006-Present	Employed by Minute Clinic Diagnostics, Woonsocket, RI, FNP
2013	Ph.D, Nursing, Rutgers Graduate School Newark, NJ
2013	Sigma Theta Tau, Alpha Tau Chapter, Research Funding Award

