

CHRONIC STRESS AND HEALTH DISPARITIES:
INVESTIGATING THE ROLES OF RACE AND CLASS DISCRIMINATION

by

HOLLY AVEY

(Under the direction of David DeJoy)

ABSTRACT

Racial and socioeconomic groups exposed to institutionalized mechanisms of discrimination have disproportionately higher rates of many stress-related illnesses. This study used a biopsychosocial model to investigate the a priori theory that exposure to the persistent social stress of institutionalized discrimination affects the psychological appraisal process to create the perception of stress, resulting in a biological stress reaction that creates or exacerbates stress-related illness. A mixed-methods design utilizing surveys, focus groups, and photovoice methods was used to answer the following research questions: 1) how much of the variance in stress scores is accounted for by race and SES, 2) how much of the variance in stress-related illness is accounted for by exposure to stressors and perceived stress, and 3) how are mechanisms of discrimination in our society (forced migration, social closure, and relative deprivation) perceived to contribute to chronic stress (through differential exposures, perceived lack of control, engagement in tasks, and perceived inadequate resources) for different racial and socioeconomic groups? A convenience sample of low-SES Blacks, low-SES Whites, middle-SES Blacks, and middle-SES Whites was recruited from doctor's offices in a large metropolitan area of the Southeast. Findings revealed that race (as a proxy for institutionalized racial

discrimination) was not found to have an influence on general stress exposure checklists, global perceived stress, the stress appraisal process for important stressors, or stress-related illnesses previously known to display racial disparities for this group. Low-socioeconomic status was associated with higher exposure to traumatic events, higher total stress exposures, and higher levels of perceived stress. Higher perceived stress was further found to be associated with higher stress-related illness burden, especially as it relates to hypertension, depression, and anxiety. Qualitative data suggest that these differential exposures and stress appraisals are a result of structural class discrimination which limits social and financial safety net resources for housing, transportation, medical care, legal issues, and drug and alcohol rehabilitation for low-SES populations through mechanisms such as social closure and relative deprivation. Additional research is needed to further explore the relationship between stress, discrimination, and illness, utilizing a greater sample size and more sensitive survey instruments.

INDEX WORDS: Stress, Race, SES, Socioeconomic status, Class, Discrimination, Health disparities, Biopsychosocial, Mixed-methods, Survey, Focus group, Photovoice, Relative deprivation, Social closure, Perceived stress, Stress exposure, Hypertension, Depression, Anxiety

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DEDICATION

This dissertation is dedicated to my parents, Jo and Jim Avey, for their never-ending love, support, and encouragement.

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CHAPTER 1

INTRODUCTION

Defining Stress

In their book *Measuring Stress: A Guide for Health and Social Scientists* (1995) authors Cohen, Kessler, and Gordon define stress as “the process in which environmental demands tax or exceed the adaptive capacity of an organism, resulting in psychological and biological changes that may place persons at risk for disease” (p. 3). The authors go on to delineate four different temporal characteristics of stress:

- (1) *acute time-limited events* (e.g., awaiting surgery);
- (2) *stressful event sequences* – when one event initiates a series of different events that occur over an extended period of time (e.g., bereavement or being fired from a job);
- (3) *chronic intermittent stressful events* – events that occur periodically (once a week, once a month, or once a year; e.g., sexual difficulties or conflicts with neighbors); and
- (4) *chronic stress conditions* – situations that may or may not be initiated by a discrete event (e.g., being disabled, chronic job stress) (p. 15).

Researchers have documented an association between stress and illness using stress measurement scales inspired by each of these temporal definitions of stress.

In addition to temporal characteristics, the authors further distinguish different parts of the stress process. Environmental demands or events are defined as stressors, subjective evaluations are defined as appraisals or perceptions of stress, and behavioral or biological responses to stressors or appraisals are defined as stress responses or distress (Cohen et al., 1995).

Significance

Stress is an underlying factor for a wide variety of healthcare provider visits (Cummings & Van den Bos, 1981; Kroenke & Mangelsdorff, 1989). Studies conducted over the past fifteen years have established an association between stress and:

- hypertension and cardiovascular disease (Franke, Ramey, & Shelley, 2002; MacDonald, Laing, Wilson, & Wilson, 1999; Carels, Blumenthal, & Sherwood, 2000; Orth-Gomer et al., 2000; Siegrist, Peter, Motz, & Strauer, 1992);
 - visceral obesity and metabolic syndrome (Peeke & Chrousos, 1995);
 - low birth weight (when pregnant mothers experience stress) (Rondo et al., 2003; Lobel, Dunkel-Schetter, & Scrimshaw, 1992);
 - the development and poor control of diabetes (Gaskill, Williams, Stern, & Hazuda, 2000; Moody-Ayers, Mutran, & Inouye, 1999);
 - respiratory illness (Sandberg et al., 2000; Kang & Fox, 2001; Wright et al., 2004);
- and

- immune response, including progression from HIV to AIDS (Burns, Drayson, Ring, & Carroll, 2002; Lacey et al., 2000; Leserman et al., 2000);

as well as many other diseases and conditions.

Despite the fact that the definition of stress, the temporal characteristics of the stressors, and the scales used to measure the stressors varied greatly for the studies cited above, findings consistently showed a relationship between stress and illness. However, studies that focus more on chronic stress may capture a more complete picture of the relationship between stress and illness. Chronic stress, whether it is periodic or constant, is persistent over time. This persistence, perhaps through its cumulative effects, may produce more negative health outcomes than acute stress events, which are discrete and time-limited in nature (Lepore, 1997; Baum, Garofalo, & Yali, 1999). There may be at least two reasons for chronic stress to have a stronger impact on health. First, some evidence suggests that the human body does not always habituate to chronic stressors. Second, chronic stressors may increase psychological vulnerability to acute stressors by depleting available resources (Lepore, 1997).

A potential source of chronic stress that could have widespread implications for stress-related illness is the persistent discrimination experienced by many persons of color and/or low socioeconomic status. Meyer (2003) explains that the sociological view of stress is a concept that is rooted in social structures. He argues that conceptualizing discrimination as a source of stress is consistent with this sociological view.

Other stress researchers have focused not on discrimination *per se*, but on the likelihood of stressors to disproportionately affect some social groups more than others. Aneshensel (1992) and Turner, Wheaton, and Lloyd (1995) differentiate between random and systemic stressors. Random stressors occur with equal probability across social groups that are known to differ in

health outcomes. For example, acute time-limited events such as “death of a spouse/mate” (Hobson et al., 1998) and chronic stress conditions such as “trouble making decisions” or “inability to express yourself” (Kanner, Coyne, Schaefer, & Lazarus, 1981) are likely to occur with equal probability across different racial and socioeconomic groups. By contrast, systemic stressors are embedded in social location and/or social group experience, reflecting both the individual and institutionalized discrimination many social groups face. For example, stressful event sequences such as “foreclosure on loan/mortgage” or “being a victim of crime” (Hobson et al., 1998) and chronic stress conditions such as “concerns about money for emergencies” or “neighborhood deterioration” are more likely to occur in some racial or socioeconomic groups than others. Systemic stressors may provide more insight into the relationship between social conditions and health status.

Williams et al. (2003) state, “perceptions of discrimination are stressors that can adversely affect physical and mental health” (p. 726). Racial and socioeconomic groups exposed to persistent systemic discrimination have disproportionately higher rates of many illnesses when compared to the more privileged groups of our society. Often these illnesses are the same illnesses that have been proven to have an association with stress. For example, the U.S. Department of Health and Human Services document *Healthy People 2010* (2000) reports that African Americans have an infant death rate that is more than double that of European Americans. African Americans are also 40% more likely to die from heart disease and 7% more likely to die from HIV/AIDS than European Americans. Population groups with low levels of education and income (i.e., low socioeconomic status groups) are more likely to become ill

and/or die from heart disease, diabetes, obesity, and low birth weight when compared to groups with higher levels of education and income (U.S. Department of Health and Human Services, 2000).

Problem

Current stress research is limited in its ability to explain how the chronic stress of discrimination could negatively and disproportionately affect the health of certain racial and socioeconomic groups. Sociological, psychological, and biomedical research have all contributed greatly to our understanding of stress, but the resulting findings are fractured by the limited lens of disciplinary inquiry. The following is a discussion of the relevant findings from each of these fields, the limitations in their potential to explore the relationship between discrimination, chronic stress, and disproportionate stress-related illness, and the opportunities a combined model provides.

Sociological research has documented that positions in the social hierarchy influence exposure to and chronicity of stressors through discriminatory mechanisms (Lennon, 1989; Aneshensel, 1992; Turner et al., 1995; Massey & Eggers, 1990; Pearlin, 1989). Those whose race or socioeconomic status places them lower in the social hierarchy are more likely to be exposed to one or more of the following potentially chronically stressful social mechanisms:

- forced migration – migration by force for the purposes of slavery or to escape persecution (Lieberson, 2001);
- social closure – restricted access to or exclusion from opportunities and resources (Aneshensel, 1992); and

- relative deprivation – social comparisons that reveal inequalities (Panning, 1983).

Thus, research from the sociological discipline has established that discriminatory mechanisms could produce disproportionate exposure to stressful events for some racial and socioeconomic population groups. However, sociological research is limited in its ability to explain how exposure to these stressful events might be perceived or interpreted by individuals as personally stressful. It is also limited in its ability to explain how such disproportionate exposures could translate into stress-related illness.

A considerable amount of psychological research on stress has focused on the role of cognitive appraisal. Lazarus and Folkman (1984) describe how the evaluative process of cognitive appraisal “determines why and to what extent a particular transaction or series of transactions between the person and the environment is stressful” (p. 19). The authors delineate several different components of cognitive appraisal. Primary appraisal relies on the individual’s perception to determine the relevance of the encounter. If the encounter is deemed relevant, the individual’s perception will then determine if the encounter is a source of current or future harm or loss, or a challenge with the potential for gain or growth. Secondary appraisal relies on the individual’s perception of the resources available to cope with the encounter. The individual must also perceive the effectiveness of these resources. Personal factors or characteristics that influence appraisal include the individual’s level of commitment to or engagement with the outcome of the encounter (i.e., its perceived importance) and the individual’s beliefs regarding his or her perceived control over the situation.

Perception is vital in the stress-to-illness process. In fact, perception has been proven to be so essential, it is more predictive of illness than “objective” reality. At least three of the

perceptions listed above have been identified as necessary for an individual to experience sufficient psychological stress to produce physiological consequences:

- high task engagement with, or commitment to, a stressor (Lazarus & Folkman, 1984; Cohen et al., 2000),
- perceived lack of control over a stressor (Aneshensel, 1992), and
- perceived lack of sufficient coping resources (Kobasa, 1979).

Thus, research from the psychological discipline has identified the criteria to predict which individuals are most likely to perceive an event as stressful and become ill as a result, (i.e., those who perceive high engagement, low control, and a lack of resources with the events they encounter). However, perceptions and coping skills have been shown to vary among individuals who share the same racial or socioeconomic group (Aneshensel, 1992), therefore the psychological discipline is limited in its ability to predict the perceptions or cognitive processes that could produce more stress-related illness in specific racial or SES population groups.

Biomedical research has demonstrated a relationship between stress and illness by focusing on the body's physiological response to a stressor. Acute stressors produce a physiological "fight-or-flight" response, also known as the General Adaptation Syndrome (Selye, 1956). This affects the cardiovascular, endocrine, and immune systems of the body. Chronic stressors wear down the body's ability to adapt or adjust to fight-or-flight changes, resulting in a condition called allostatic load, which causes over-activity in some body systems and under-activity in others (McEwen, 1998). Thus, research from the biomedical discipline has established a physiological explanation for the correlation between chronic stress and each of the illnesses listed at the beginning of this chapter, but it is limited in its ability to help us understand the

nature of this relationship, specifically why some racial and socioeconomic population groups experience more stress-related illness than others.

The sociological, psychological, and biomedical research disciplines have each contributed very important insights into stress, such as: the relationship between mechanisms of discrimination and increased exposures to and chronicity of stressors for certain racial and socioeconomic groups, the relationship between cognitive appraisals and the perceptions of stress, and the relationship between stress (especially chronic stress) and the physiological reactions that could result in illness. But each discipline by itself addresses only a fragment of this overall relationship. A combined model of stress research – one that utilizes a biopsychosocial model – provides the opportunity to blend these findings into a comprehensive investigation of the complete relationship between discrimination, chronic stress, and disproportionate illness. Such a model is advocated by authors Clark, Anderson, Clark, and Williams (1999), who view it as an opportunity to investigate the interactions between biological, psychological, and social factors in stress research.

Suls and Rothman (2004), in their recent review of health psychologists' utilization of the biopsychosocial model, suggest that researchers who truly embrace this model should measure four classes of variables: "biological, psychological, social, and macro (cultural, socioeconomic status, and ethnicity)" (p. 121). In their investigation of all studies published in the journal *Health Psychology* within a 1-year period (November 2001 to September 2002), the authors conclude that "too often, even though indicators were assessed across multiple systems, the relations between those systems were not tested . . . more could be done to pursue the linkages among subsystems" (p. 121). A biopsychosocial investigation exploring the linkages between

social mechanisms of discrimination, perceptions of stress, and stress-related illness provides just such an opportunity.

A Priori Theory

By piecing together the different fragments of research on stress summarized above, an a priori theory was used for this study to explain how chronic stress could be related to health disparities. People who experience persistent race and/or class discrimination are more likely to be exposed to chronically stressful environments and events. When members of these groups perceive these events as stressful, the resulting chronic stress could then cause or exacerbate stress-related illness. Therefore, people who are members of disadvantaged racial and/or socioeconomic groups in our society may experience disproportionate levels of stress-related illness due to the chronic stress caused by mechanisms of institutionalized discrimination.

The specific process through which this might occur is as follows: a) discrimination is perpetrated through institutionalized mechanisms, b) these mechanisms of discrimination affect multiple stages of cognitive appraisal resulting in the perception of stress, c) the psychological stress then creates a biological reaction which, when repeated over time, creates and exacerbates illness. See Figure 1.1.

Research Questions and Hypotheses

This study explored the stress of discrimination for different racial and socioeconomic groups by employing a mixed-methods design. The first portion of the quantitative phase of the study was conducted to assess the extent to which the racial and socioeconomic statuses of the participants (used as proxies for discriminatory experiences based on race and class) accounted

for the variance in stress scores for four different stress scales (described below). This portion of the investigation was based on the a priori theory that sociological mechanisms of race and class discrimination contribute to chronic stress.

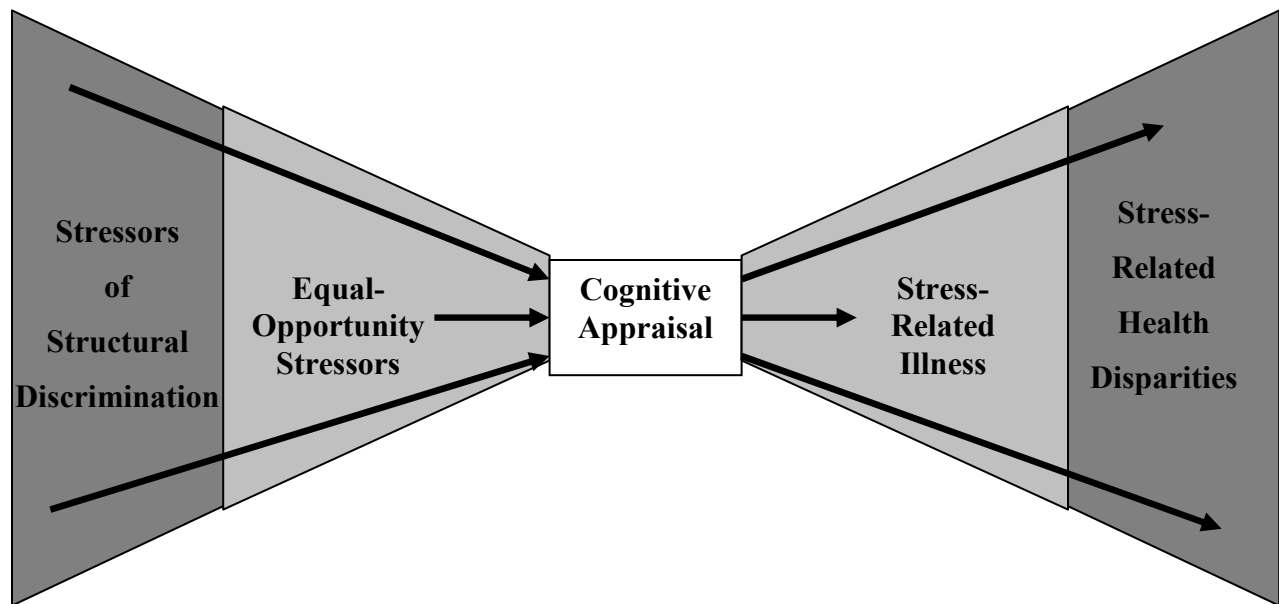


Figure 1.1. Discrimination, stress, and health disparities.

Note. The light gray sections of the figure represent the traditional stress-to-illness model which may be more accurate for privileged racial and/or SES groups. The dark gray sections of the model represent the additional discriminatory stressors experienced by disadvantaged groups, thereby amplifying their stress-related illnesses.

Research Question One

What percentage of the total variance in stress scores for the Social Readjustment Rating Scale Revised (SRRS-R), the Daily Hassles Scale (DHS), the traumatic events scale (TES), and the Perceived Stress Scale (PSS) is accounted for by race and SES?

Hypothesis 1a

Race will account for a statistically significant portion of the variance in total stress scores on the SRRS-R, the DHS, the TES, and the PSS.

Hypothesis 1b

SES will account for a statistically significant portion of the variance in total stress scores on the SRRS-R, the DHS, the TES, and the PSS.

The second portion of the quantitative phase assessed the extent to which exposures to stressors and perceived stress accounted for the variance in stress-related illness burden. This portion of the investigation is based on the a priori theory that disproportionate chronic stress contributes to disproportionate stress-related illness (i.e., health disparities).

Research Question Two

What percentage of the total variance in stress-related illness is accounted for by exposure to stressors and perceived stress?

Hypothesis Two

Stress scores will account for a statistically significant portion of the variance in stress-related illness.

These results were integrated with a qualitative design using photovoice and focus group techniques to further explore the structural context of stress for each group. The qualitative phase was based on the a priori theory that disadvantaged racial and SES groups experience more mechanisms of institutionalized discrimination in the context of their stress-related perceptions than do the more economically- and racially-privileged groups of our society.

Research Question Three

How are mechanisms of discrimination in our society (forced migration, social closure, and relative deprivation) perceived to contribute to chronic stress (through differential exposures, perceived lack of control, engagement in tasks, and perceived inadequate resources) for different racial and socioeconomic groups?

Overview of Methods

The Culture and Qualitative Interest Group of the National Institutes of Health (2000), suggests a sequential or integrative model of research methodologies when the goal of a study is both to understand the social actor's perspective within a specific context *and* to understand the strength of relationships and generalize to larger populations. Based on these recommendations, the mixed-methods design for this study was an appropriate choice.

Quantitative Phase

For the quantitative phase of the study, four stress scales were used: the Social Readjustment Rating Scale Revised (SRRS-R) (Hobson et al., 1998), the Daily Hassles Scale (DHS) (Kanner et al., 1981), the traumatic events scale (TES) (Turner & Lloyd, 1995) and the Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983). The original version of each of the scales was developed based on a different theory regarding the temporal characteristics or cognitive appraisals of stressors that might cause disease, and each scale has its own strengths and weaknesses.

The Social Readjustment Rating Scale (SRRS) (Holmes & Rahe, 1967) measures exposures to major life events (e.g., acute time-limited events and stressful event sequences) that have occurred within the previous 12 months. The Daily Hassles Scale (DHS) (Kanner et al., 1981) measures exposures to chronic strains and daily hassles (e.g., chronic intermittent stressful events and chronic stress conditions). The traumatic events scale (TES) measures exposures to major life events that occurred either in childhood or earlier in adulthood and were traumatic enough to potentially cause stressful event sequences. The PSS (Cohen et al., 1983) measures the degree to which these types of stressors are perceived as stressful. The SRRS has been revised (Hobson et al. 1998) to better capture culturally relevant differences in stress exposures, therefore only the revised version will be used for this study.

The scales were administered to 310 study participants distributed across four population groups: (a) low-SES African Americans, (b) low-SES European Americans, (c) middle-SES African Americans, and (d) middle-SES European Americans. Demographic variables of gender, age, and education were measured to assess comparability across population groups.

Stress-related illnesses for which there is a racial or SES-related health disparity were assessed by self-report. The participants were recruited from outpatient medical settings.

Once data collection was completed, five different multiple regression analyses were conducted to test the first research question. Age, gender, and education were entered as control variables. Race and SES were used as the independent variables, and the score for each of the four stress scales was used as the dependent variable for each analysis. An additional analysis was conducted using a composite score of stress exposures (combining the scores for the SRRS-R, the DHS, and the TES) as a dependent variable.

Two additional multiple regression analyses were conducted to test the second research question. Age, gender, education, race, and SES were entered as control variables. The composite score of stress exposures was used as an independent variable and a composite score of stress-related illness was used as a dependent variable. A second analysis included the perceived stress scale score in addition to the total stress exposures score for independent variables.

Qualitative Phase

A sub-set from each of the four population groups was selected for the qualitative phase of the study. Eligibility for the sub-sets was based on perceived stress scores and willingness to participate further in the study. Eligible participants had to have scores for the PSS of at least 1.50 out of a total possible of 4.00 in order to ensure salience for the discussion topic of stress. Participants also had to be willing and available to attend orientation and focus group meetings, take photographs, and discuss their stress with others.

The qualitative phase began with a photovoice technique. This consisted of participants receiving disposable cameras and taking pictures of the kinds of things that cause them stress. The resulting pictures, selected by the participants, were used as an impetus for discussion during the focus groups.

One focus group was conducted for each of the four population groups. The focus groups consisted of four to seven participants each. Participants were asked questions regarding their sources of stress (especially as illustrated in the photovoice pictures), the degree to which these stressors are important to them, the degree to which they feel they have control over the stressors, and the resources they feel they have to address the stressors. In addition, participants were asked how people from racial and economic groups different from themselves might have answered each of those questions.

The findings from the two phases of the study were integrated as illustrated in Figure 1.2. The administration of the scales helped to determine the sample selection for the qualitative methods by identifying participants with moderate-to-high levels of stress. The quantitative data tested the a priori theory that race and/or SES can serve as proxies for stress from racism and classism by determining if these two independent variables explained stress scores on the scales. In parallel fashion, the qualitative data helped to explore the context of the stress experience and illuminated the underlying mechanisms of discrimination which produce stress for the participants, including racism and classism. These two sources of data were then triangulated to assess how the findings were consistent with one another, and to explore their differences. In addition, the qualitative data was compared with the scale items themselves, to assess the potential for the scales to capture the context of the stress experience for these different racial and economic groups.

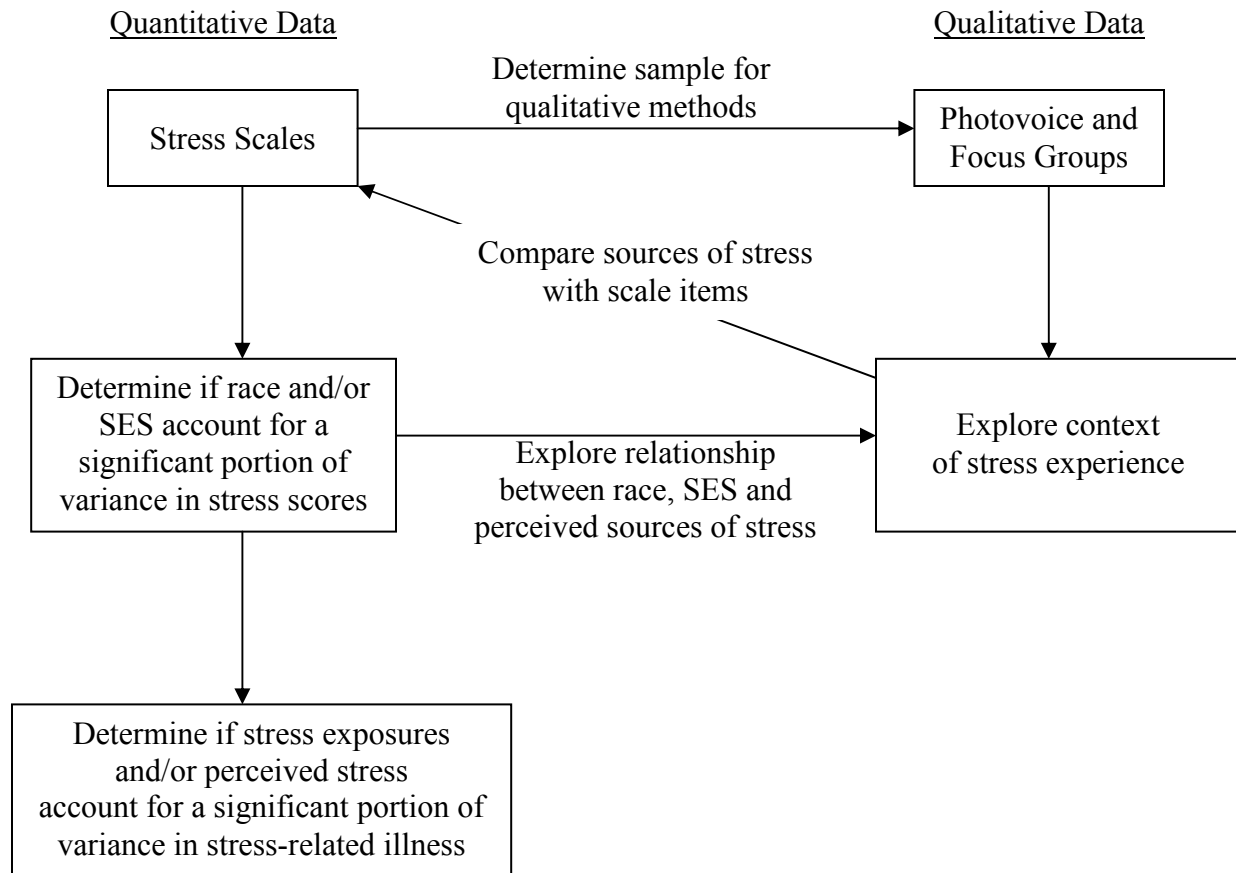


Figure 1.2. Integration of quantitative and qualitative methods.

CHAPTER 2

REVIEW OF THE LITERATURE

The Biopsychosocial Model

Krieger (1999) argues that the absence of a cohesive theory to explain population patterns of illness has led to an inherent reliance on allegedly genetic explanations of health disparities. Clark, Anderson, Clark, and Williams (1999) contend that a similar lack of conceptual and methodological cohesion has plagued research on the stress of racial discrimination. A biopsychosocial model of stress research contributes to the understanding of why racial discrimination is stressful, by providing an alternative to genetic explanations of health disparities, and further explaining the linkages between discrimination, psychological perceptions of stress, and stress-related health disparities.

The implications for a biopsychosocial model become evident when past interpretations of stress research findings are reviewed. Kessler, Mickelson, and Williams (1999) report that over the past two decades stress researchers have interpreted a higher prevalence of stress among low-SES groups in terms of “differential vulnerability” caused by neuroticism, maladaptive coping, and inadequate social support. This psychological model provides a cognitive rationale for SES differences in stress. The authors discuss an alternative psychosocial interpretation for SES differences in stress which posits that the higher prevalence of stress is caused by “differential exposure,” such as the added exposures of discrimination experienced by the poor. The theory of differential exposure is consistent with the sociological model that stress is caused

by social inequities and conflicts within social roles. The theory of differential exposure is also, in some ways, consistent with the biomedical model because it requires exposure to an adverse event or circumstance before a negative result can occur, which is similar to the concept of a pathogen causing an illness. A biosocial model of stress and illness, proposed by Massey (2003), suggests that differential exposures to social inequalities creates a chronic biological stress response, resulting in health disparities. In contrast to these psychological, psychosocial, and biosocial models, a biopsychosocial model of stress argues that a higher prevalence of stress for low-SES groups is caused by an interaction between higher exposures due to discrimination and the psychological reactions to these exposures, which then result in more stress-related illness for low-SES groups.

Research Question One

One part of the a priori theory for this study suggests that racial and socioeconomic discrimination is so pervasive and persistent for disadvantaged groups in our society that it produces chronic stress. This concept essentially constitutes the psychosocial portion of the biopsychosocial model. In order to test this concept, the first research question for the study asks: What percentage of the total variance in stress scores for life events, daily hassles, traumatic events, and perceived stress is accounted for by race and SES?

Measuring Stress

In order to fully explore the importance of the differential exposure theory proposed by the psychosocial model, it is important to capture many different types of exposures to social stressors, thus requiring a variety of different stress measurement tools.

Life events inventories are the most frequently used stress measurement tool. These inventories are designed to identify the number of objective occurrences a person experiences which might require them to change or adapt (Holmes & Rahe, 1967). They are often restricted to the measurement of time-limited events, consistent with the concept of acute stressors.

A second way to measure stress is to assess chronic strains and daily hassles. Psychologists often conceptualize strains as a poor person-environment fit, while sociologists often focus on the conflicts and inequities of social roles. Chronic stress scales are often contextualized to specific situations (i.e., marital stress, job stress, etc.), but general daily hassles scales also exist (Kanner, Coyne, Schaefer, & Lazarus, 1981).

A recent development in stress research is the development of a scale to measure the stress of traumatic events (Turner & Lloyd, 1995). Traumatic events are similar to the events listed on life events inventories in the sense that they are time-limited and likely to require a person to change or adapt. However, unlike life events inventories, which usually focus on events that have occurred within the last 12 months, Turner and Lloyd's traumatic events scale asks about events that may have happened in childhood or many years prior to the completion of the survey. Their reasoning is that many life events, such as childhood sexual abuse or adult experiences with severe illness or injury, are likely to be traumatic enough that they could be accurately recalled on a survey many years later and could potentially have a lasting impact on the stress and coping mechanisms of the recipient.

Some researchers propose that life events and chronic stressors are inter-dependent, suggesting that it is inappropriate to measure them separately (Pearlin, 1989). But several studies have documented that life events and chronic stressors can each independently contribute to health outcomes, and that more of the variance in disease states is explained when they are used

together (Turner et al., 1995; Turner & Avison, 2003; Turner & Lloyd, 1995; Wheaton, 1994). Some studies have shown that traumatic events also independently contribute to health outcome variables, when combined with scales used to measure life events and chronic stress (Turner & Lloyd, 1995; Wheaton, 1994; Turner et al., 1995).

A fourth form of stress measurement is perceived stress, which measures the degree to which individuals appraise situations in their life as stressful (Cohen, Kamarck, & Mermelstein, 1983). Although this tool is not frequently used in combination with other stress measures, its premise is fundamental to the hypothesis that a greater number of exposures to stressors could result in a higher level of perceived stress, and thus more stress-related illness.

Defining Discrimination

Research question one asserts that race and SES can be used as proxies for racial and socioeconomic discrimination. The following discussion will support this assertion by first defining discrimination and then exploring the mechanisms which make racial and socioeconomic discrimination so persistent and pervasive.

Krieger (1999) argues that discrimination does not consist of random acts of unfair treatment, rather it is “a socially structured and sanctioned phenomenon, justified by ideology and expressed in interactions, among and between individuals and institutions, intended to maintain privileges for members of dominant groups at the cost of deprivation for others” (p. 301). Link and Phelan (2001) expand the discussion of discrimination to include several elements that converge to create stigma. They argue that stigma occurs when:

- (1) people distinguish and label human differences,

- (2) dominant cultural beliefs link labeled persons to undesirable characteristics – to negative stereotypes,
- (3) labeled persons are placed in distinct categories so as to accomplish some degree of separation of ‘us’ from ‘them’,
- (4) labeled persons experience status loss and discrimination that lead to unequal outcomes (p. 367).

The authors emphasize that each of these steps must take place in the context of differential access to social, economic, and political power in order for stigmatized groups to experience the unequal outcomes of discrimination. One could argue that the first three steps constitute stigma, while the fourth step, discrimination, is more a *result* of stigma in the context of differential access to power than it is a part of the stigma process itself.

In addition to the four elements of stigma, Link and Phelan discuss three mechanisms of discrimination: individual, internalized, and structural. They provide a beautiful example of how structural discrimination can occur even in the absence of individual discrimination.

Consider . . . a mental illness like schizophrenia. Suppose that because the illness is stigmatized, less funding is dedicated to research, . . . adequate care, [or] management . . . Treatment facilities tend to be either isolated . . . or confined to some of the most disadvantaged neighborhoods . . . The most successful and accomplished mental health personnel tend to accrue more status and money by treating less serious illnesses in private offices in affluent areas, leaving the care of people with schizophrenia to a generally less accomplished group . . . A person who develops [schizophrenia] will be the

recipient of structural discrimination whether or not anyone happens to treat him or her in a discriminatory way because of some stereotype (pp. 372-373).

The authors argue that one of the greatest sources of power in dominant groups is the ability to create new mechanisms of discrimination when the current mechanisms become blocked or embarrassing to use. When people in stigmatized groups attempt to confront or avoid a particular mechanism of discrimination, they may have less attention to deal with other structural mechanisms. This could result in temporary benefits in one domain, but harm in others, explaining why “members of stigmatized groups are [often] disadvantaged in a broad range of life domains (e.g. employment, social relationships, housing, and psychological well-being)” (p. 380).

Inter-Relatedness of Race and SES Discrimination

Race and SES in our society are inextricably linked. As Jones (2000) contends, “It is because of institutionalized racism that there is an association between socioeconomic status and race in this country” (p. 1212). The relationship between race and SES discrimination could be explained, in part, through Link and Phelan’s (2001) description of flexible mechanisms of institutionalized discrimination. After the civil rights movement, overt race discrimination most likely became more embarrassing or difficult to defend on an institutional level. Up until that point, race discrimination had successfully assured lower socioeconomic status for the vast majority of African Americans (see the discussion on the wealth gap later in this chapter). Therefore, it was easy to modify the mechanism of discrimination to focus more on SES than race, and still maintain the exclusion of most African Americans from full participation and

benefits in our society. Capitalizing on the cultural myth in our country that those who are capable can modify their socioeconomic status at will, the perpetrators could then claim that they were not engaging in discrimination, because SES inequality is natural (i.e., “the skilled soar and the unskilled sink”) (Fischer et al., 1996, p. 3). Thus SES discrimination, still inflicted disproportionately on disadvantaged racial groups, becomes the new and more acceptable mechanism for discrimination.

Institutionalized Discrimination and Stress

When discussing institutionalized forms of discrimination, it is important to delineate the exact mechanisms that are likely to create the context of the stress experience for disadvantaged racial and socioeconomic groups. Although it is unlikely that the mechanisms themselves will be named, the outcomes of such mechanisms are likely to be identified as sources of stress during the qualitative portion of this study. At least three specific mechanisms of institutionalized discrimination impact disadvantaged racial and socioeconomic groups in a persistent manner. These mechanisms include: forced migration, social closure, and relative deprivation. The following is a discussion of each of these mechanisms, the ways in which they affect disadvantaged racial and/or socioeconomic groups, and their potential to create chronic stress.

Forced Migration

Lieberson (2001) discusses the impact of forced migration on population groups competing for available jobs. He proposes that groups that voluntarily migrate from one country or region to another do so for economic incentives, with the allure of obtaining better jobs than what they could obtain in their previous location. If better jobs are not available, they do not

migrate. By contrast, groups that are forced to migrate, such as those impacted by slavery, have no access to alternative job structures. They must simply take what they can get, oftentimes leaving them no choice but to accept the lowest paying, lowest prestige jobs (if they are even paid at all).

Forced migration impacts not only those who live through the experience, but the cultural identity of any descendants who must carry the burden of such a legacy. Fentress and Wickham (1992) describe this concept as “social memory,” which helps a group form its identity. When social memory is in place, an individual’s present identity is embedded in the experiences of previous generations. Williams, Neighbors, and Jackson (2003) suggest that the social memory of traumas related to one’s racial/ethnic group may transmit their negative consequences across generations. Carroll (1998) concurs when she states, “To say that being Black in America does not add a high stress factor is to be blind to the history and contemporary manifestations of that history” (p. 273).

Davis (2000) explored the relationship between stress and the social memory of forced migration with his study on the mental health status of African Americans currently living in the “Black Belt.” The Black Belt is a region historically dominated by slave plantations, and the likely original location for most forced migrations of African descendants in this country. It consists of 603 counties in thirteen states in the southeastern United States where African Americans make up 24% or more of the current population. Davis compared the mental health status of African Americans living in Black Belt counties that have recently supported the establishment of high-technology, manufacturing, and service-oriented economic development to those still controlled by the “landed elite” who own 20% of the county’s acreage or more and maintain economies that rely on unskilled, low-wage manual labor, echoing the embedded social

memory of the slave plantations in these regions. He found that African Americans who live in Black Belt counties where the landed elite still dominate have significantly higher levels of psychological distress compared with African Americans or European Americans in other Black Belt counties. In addition, by controlling for factors such as job stress, household financial strain, and stress-buffering resources, Davis was able to conclude that the higher level of distress for African Americans in landed elite Black Belt counties “seems due entirely to the presence of a strong [landed] elite in those counties” (p. 485).

Social Closure

A closed social relationship is one in which “participation of certain persons is excluded, limited, or subjected to conditions” (Weber, 1968 , p. 146). According to Parkin (1979), social closure consists of two parts. The first part is the closure of social and economic opportunities to outsiders. Williams, Neighbors, and Jackson (2003) call such blocked opportunities “nonevents.” They state, “Nonevents are desired and expected experiences that fail to occur” (p. 203). The second part of social closure is the restriction of access to resources (Parkin, 1979). Jones (2000) argues that differential access to resources is often demonstrated through inaction in the face of need. Mechanisms for social closure include the restriction of access to: employment, housing, education, credentialing, transportation, technology, and healthcare.

Employment

Social closure can lead to restricted access to employment and benefits, as well as nonevents in relation to promotions and fair wages for African Americans and people of low-socioeconomic status. Wilson, Tienda, and Wu (1996) investigated the reasons for consistently

higher unemployment among African Americans compared to European Americans. They found, after controlling for racial differentials in educational attainment, occupational position, and earnings, that higher unemployment among African Americans was due to three forms of social closure: residential segregation as a result of restricted access to housing (see discussion on housing below), employment in occupations with high rates of turnover as a result of restricted access to a broad range of occupations, and restricted access to the labor market in general as a result of direct racial discrimination.

Even when African Americans are able to overcome such barriers and obtain employment, the experience of nonevent social closure is more likely because promotions and raises may fail to materialize. In a study of 8000 households in Atlanta, Boston, Detroit, and Los Angeles, Darity (2003) reports that 27% of Black male respondents and 20% of Black female respondents believed racial discrimination had prevented them from receiving a promotion or pay raise, compared to 8% of White males and 7% of White females. Darity confirmed these perceptions by documenting wage discrimination in the workplaces of 96% of Black men, 98% of Black women, and 15% of White men and women who reported racially-based promotion and pay raise discrimination. In addition, Darity found evidence of racial wage discrimination in the workplaces of more than 90% of the Black men and women who did *not* report being subjected to discrimination, while the rate was below 3% for White male and female interviewees with similar responses. Darity concludes, “The vast majority of Blacks either do not recognize the discrimination to which they are being subjected or are engaged in some form of cognitive dissonance or denial” (p. 229).

Social closure can also restrict employment opportunities for low-SES groups. Researchers Bartley and Owen (1996) studied the variations in employment status for men of

different socioeconomic groups between 1973 and 1993, before and after an economic recession. They found that the men of the high-SES group had a high of 99% employment before the economic recession and a low of 93% employment after the recession. This was in stark contrast to the low-SES group, whose highest employment rate before the recession never exceeded 90% (still below the lowest employment rate for the high-SES group). The employment rate for the low-SES group then dropped precipitously to a low of 76% employment after the recession. These findings suggest that low-SES groups consistently experience more restrictions in access to employment than high-SES groups, but these restrictions are exaggerated during economic recessions.

Claussen (1994) examined the relationship between unemployment and stress. He documented that unemployed workers had a high level of psychological distress at the beginning of his study, but this was followed by a reduction in distress levels at the two-year follow-up for workers who had regained employment, indicating that the stress levels were due to the unemployment. A study by Radmacher (1987) suggests that just the threat of unemployment is enough to increase stress levels. She found that employees working in an unstable industry who perceived a threat to their jobs reported more job-related stressors than employees who worked in a stable industry and perceived no threats to their employment.

Housing

Access to the purchase of a home is restricted when employment discrimination means not having enough income to purchase a home, especially without assistance. Many racial and ethnic groups in the U.S. were excluded from home ownership in the past. Qualifying for a federal loan to purchase a home was blatantly discouraged for people of color for many years.

Duster (1995) reports that loans through the Federal Housing Authority (FHA) or Veteran's Administration (VA) were explicitly restricted to neighborhoods with "racial integrity" (i.e., all-White neighborhoods) and Jackson (1980) reports that properties in or near Black neighborhoods were rated ineligible for loans. In fact, Duster states that as recently as 1962 less than 2% of the financing provided by the FHA and VA for new homes was available for non-White families.

Restricted access to affordable housing continues to exist today. Fischer et al. (1996) report that multiple studies have shown Black home-seekers with equivalent credentials to Whites are not shown the same neighborhoods as Whites, are told that there are no apartments available when Whites are told differently, and are actively steered to Black neighborhoods.

Such historical and contemporary restrictions to housing have resulted in a high degree of segregation. The majority of African Americans (almost 60%) live in a metropolitan area that is highly segregated, despite evidence that most Blacks desire racially integrated neighborhoods (Massey, 2003). Researchers Massey and Denton (1993) recently revealed an "American Apartheid", where the residential segregation of African Americans living in urban areas of the U.S. is only moderately lower than the residential segregation of Blacks living in urban areas of South Africa in 1991. For many African Americans this segregation results in increased exposures to poverty, crime, and violence.

Massey (2003) hypothesizes that frequent and prolonged exposure to disorder and violence would most likely produce a chronic stress response. This hypothesis is supported by Schulz et al. (2000), who studied neighborhoods in Detroit, Michigan, one of the cities that Massey and Denton (1993) identified as having a very high level of racial residential segregation. When Shultz et al. compared neighborhoods, the authors found that psychological distress was higher in high poverty areas than in low poverty areas.

Education and Credentialing

Education is one of the ways that structural discrimination may have shifted from discrimination based on race to discrimination based on socioeconomic status. The days of mandatory “separate but equal” racial school systems may be gone, but the results of structural racial discrimination through forced migration and social closure for housing may assure the same result. Access to quality education is directly affected by the neighborhood in which one lives, because funding for schools is based on property tax values. Racially segregated neighborhoods with a high concentration of poverty receive less funding for education because they have lower property tax values.

Fischer et al. (1996) report that school systems that serve neighborhoods with high concentrations of poverty are under-funded and overwhelmed. Students in these school systems are more likely to be pessimistic and resentful, resulting in more disciplinary problems than what would be expected based on the individual backgrounds of the youth. In response, students are more likely to drop out of these schools. If they do not drop out, they are more likely to score poorly on standardized tests, including intelligence tests and college entrance exams.

Using standardized tests as entry requirements to institutions of higher education becomes another form of social closure when poor and racially segregated students coming from overwhelmed schools are more likely to score poorly on such tests. Low-income students experience yet another form of educational social closure if they pass the college entrance exams but are unable to access higher education because laws and policies have limited the availability of financial aid.

Even if students are successful in overcoming the barriers of an overwhelmed and under-funded school system to achieve adequate scores on standardized tests and secure sufficient

funding, they may still experience another form of educational social closure. Parkin (1979) describes the social closure of credentialing as the process of raising the minimum requirements for entry into an institution of higher learning or a good-paying job so that those who do not have access to these requirements are once again closed out of full participation in society. When entry into an institution of higher learning means not only adequate standardized test scores and the ability to secure funding for schooling, but also participation in a variety of extra-curricular activities such as volunteer programs, social groups, athletics, or musical programs, a low-income student who has to work after school to help the family pay bills or a student coming from a school system with a high concentration of poverty that does not offer a music or athletic program may be closed out of access to their preferred source of higher education. When gaining access to a job depends not only on a high school degree, but a bachelor's degree, or a master's degree, and then only from a "reputable" school (which may covertly exclude schools that serve predominantly low-SES or racial minority groups) or with an additional credential (which often costs money), each increase in minimum qualifications restricts access to another group of people.

Restricted access to a quality education may result in higher levels of stress for adults. Cohen and Williamson (1988), in their norms testing of the Perceived Stress Scale, queried 2,387 adults throughout the U.S. The authors noted that the more education respondents had, the lower their perceived stress scores. In particular there was a statistically significant difference in perceived stress between respondents with less than a high school education and those with some education beyond high school.

Obtaining access to education beyond high school may not always be protective for disadvantaged groups, however, due to the goal-striving stress of credentialing. Dressler (1988)

defines goal-striving stress as a discrepancy between aspirations and achievements. When credentialing restricts access to good-paying jobs by creating additional requirements such as advanced degrees, “reputable schools”, or additional credentials, the achievement of the original educational goal may not provide the expected reward. Williams et al. (2003) state, “Expectations that are unfulfilled because their investment in education has not provided parallel gains in income may be a unique source of stress and alienation for African-American men” (p. 726).

Access to Transportation, Technology, and Healthcare

Social closure can also lead to restricted access to reliable transportation, basic technology, and quality healthcare. Although many people consider transportation, technology, and healthcare to be privileges and not rights, Jencks et al. (1972) point out that the “cost of living” in a society “is not the cost of buying some fixed set of goods and services. It is the cost of participating in a social system” (p. 405). Without reliable transportation, basic technologies such as a telephone, answering machine, and access to the internet, and quality healthcare, it is becoming increasingly difficult, if not impossible, to fully participate in our society today.

Other than access to healthcare and its effects on treatment, research on these forms of social closure appears to be virtually nonexistent. The exception is a small amount of data on the stress levels and health outcomes for those without access to reliable transportation. Unpublished data from the Grady Health System Stress Management Program (Avey, 2004), a program that serves a predominantly African-American indigent population, suggests that restricted access to reliable transportation is associated with higher levels of perceived stress. Before starting the program, six hundred and six participants were asked, “How hard is it for you to get

transportation to Grady and back?” The participants who answered “very hard” or “somewhat hard” had a higher mean perceived stress level than those who indicated that transportation was not difficult. One-way analysis of variance reveals that the difference between the means is statistically significant, $F(5, 600) = 4.442, p < .001$. These findings suggest that restricted access to reliable transportation may, by itself or in combination with other related forms of social closure, increase perceived stress.

Carroll (1998) suggests that the social closure that is expressed through barriers to equitable educational opportunities and housing options, job discrimination, and unequal access to a wide variety of quality services contributes to the African-American experience of “mundane extreme environmental stress.” The discriminatory motives underlying many forms of social closure are not lost on those who experience them. Clark, Anderson, Clark, and Williams (1999) report, “More than 50% of African Americans attribute substandard housing, lack of skilled labor and managerial jobs, and lower wages for African Americans to ethnic discrimination” (p. 807).

Relative Deprivation

In addition to forced migration and social closure, a third mechanism of structural discrimination is relative deprivation, or the perception of being deprived of resources when compared to others. Panning (1983) argues that relative deprivation affects the behavior of social groups only when individuals compare their own lot with that of others, discover inequalities, and become dissatisfied. Keith and Schafer (1987) suggest that social comparisons are the only way in which persons determine what they deserve and whether or not resources have been distributed fairly. According to this theory, structurally disadvantaged groups would not

experience stress from their disadvantages as much as they would experience stress from the *relative* disadvantages they perceive in comparison to the advantages of other social groups. R.G. Wilkinson (1999) states, “Perhaps what hurts most about relative poverty is not so much the lack of material possessions itself, but the affront to one’s dignity that it represents” (p. 54). Mechanisms of relative deprivation include: corporate welfare, the wealth gap, media and consumerism, and property taxes. Each mechanism will be described below, followed by a discussion of the overall impact of relative deprivation on stress.

Corporate Welfare

Tax breaks and subsidies for corporations often promote wage inequalities. In the 1980s, when communities first began to compete for business from corporations by offering “corporate welfare” deals such as promises to regulate union activity, the percentage of American workers who belonged to labor unions was 20.1%. Since the advent of corporate welfare policies, the percentage of workers who belong to unions has steadily declined to the current low of 12.9% (Grant & Wallace, 1994; U.S. Department of Labor, 2004). Such limitations on union activity often result in greater wage inequality between the lowest paid worker and the CEOs for corporations. In 1980, the average CEO earned forty-two times the amount of the average worker. In 2003, the average CEO earned *three hundred and one* times the amount of the average worker (United for a Fair Economy, 2004). This rapid and expansive increase in wage inequalities due to corporate welfare policies is likely to result in perceptions of relative deprivation, especially for low-SES workers.

Wealth Gap

Oliver and Shapiro (1997) differentiate between wealth and income when they state, “wealth is what people own, while income is what people receive for work, retirement, or social welfare. Wealth signifies the command over financial resources that a family has accumulated over its lifetime along with those resources that have been inherited across generations” (p. 637). Fischer et al. (1996) compare the median young, two-earner Black couple to the median young, two-earner White couple. The Black couple’s annual income is 81% as much as the White couple, but their net worth is only 18% as much as the White couple. Drentea and Lavrakas (2000) report that the overall wealth discrepancies between African Americans and European Americans often leads African Americans to accrue large credit card debts for emergencies like job loss and medical care, when European Americans are more likely to have sufficient funds in reserve. As Williams et al. (2003) state, “Middle-class status is often recent, tenuous, and marginal for African Americans” (p. 726), resulting in a potential sense of relative deprivation for this population group.

Media and Consumerism

Dressler (1988) defines life-style incongruity as a discrepancy between consumption patterns and social class. In the past, Americans used to match their life style with their neighbors and local reference groups. Now, Americans often experience the relative deprivation of life-style incongruity because they choose reference groups that are three to five times that of their own salary, causing them to consume more than their socioeconomic status provides (Drentea & Lavrakas, 2000). This change has been influenced by the near-ubiquitous presence of television. By 1997, 98% of U.S. households had a color television (Kawachi & Kennedy, 2002).

The advertisements on television and in other media are designed to create discrepancies between our actual life and the idealized life of a person using the advertiser's product (Kasser, 2002). Thus, successful advertisements on television and other media create an immediate sense of relative deprivation that can only be assuaged by purchasing the product. Low-SES groups who are unable to purchase a multitude of products could be left with a consistent and lingering feeling of relative deprivation.

Property Taxes

The Tax Reform Act of 1986 allows taxpayers to deduct the full cost of interest payments on their home mortgages (The Brookings Institution, 2004). Although this tax law is often proclaimed to be a means of increasing home ownership and enhancing access to "The American Dream" for those who do not yet own a home (National Association of Realtors, 2004), the law applies equally to all homeowners, no matter how much money they make or how many homes they own (Fischer et al., 1996). Those who do not make enough money to own a home or pay taxes do not usually receive such tax breaks, nor do they receive an equitable amount of assistance for housing. By the early 1990s, U.S. taxpayers were deducting more than \$60 billion annually on mortgage interest and property taxes, even though many could afford to own these properties without the deductions. Less than one-quarter of this amount was spent on direct housing assistance for low-income families (Fischer et al., 1996). Such property tax structures could cause low-SES groups to feel relatively deprived in the amount of assistance they receive from the government for housing. These inequities could also reinforce relative deprivation in wealth accumulation when those who do not own a home are left without a major source of equity to leverage resources for the future.

Surprisingly, direct evidence of the impact of relative deprivation on psychological stress for humans does not appear to be available. But neurobiologist Robert Sapolsky (1998) has documented this relationship in primates. Although low-ranking primates do not have restricted access to wealth, tax deductions, or fair wages like their human counterparts, they do have restricted access to valued resources such as food, grooming, social support, and protection from the violence of dominant members of their group. Sapolsky states, “For a subordinate animal, life is filled with a *disproportionate* [italics added] share not only of physical stressors but of psychological stressors as well – lack of control, of predictability, of outlets for frustration” (p. 291).

Sapolsky has studied the physiological effects of these apparent psychological stressors by measuring markers of the stress response (glucocorticoids, cholesterol levels, blood pressure, immune function, etc.) in dominant and subordinate baboons, then comparing his findings to those of other animal groups. He has concluded that social subordination is not sufficient to produce a physiological stress response. What matters most is the relative deprivation of social subordination in that social group – how much worse life is for a subordinate in that group compared to the life of a dominant member. This depends not only on the type of species (baboons, monkeys, lemurs, mice, etc.), but the culture of that species (frequency of certain social behaviors), the stability of that culture (consistency of the social hierarchy), and the environmental resources available to the group. Sapolsky declares, “While rank is an important predictor of individual differences in the stress-response, the meaning of that rank . . . is at least as important” (p. 297). Some scientists have argued that these findings simply reflect the fact that animals that are prone to stress are more likely to assume lower ranks in their social hierarchies.

However, experimental manipulation of social hierarchies in monkeys has documented that social rank emerges first, followed by a heightened physiological stress response for those in subordinate social ranks (Sapolsky, 1998).

Measuring the Stress of Discrimination

Examining discrimination through the lens of a stress response allows us to interpret major episodes of discrimination, such as losing a job, as an acute stress caused by a major life event, while everyday experiences of prejudice and discrimination can be viewed as chronic stress caused by daily hassles (Krieger, 1999). Just as previous stress research has shown that life events and daily hassles independently contribute to health outcomes, the major episodes and daily hassles of discrimination are likely to independently contribute to the material, psychosocial, and physiological challenges of those experiencing the discrimination (Meyer, 2003). However, as Clark, Anderson, Clark, and Williams (1999) point out,

It is . . . possible . . . that racism may affect health even when it is not perceived as [the cause of] a stressor . . . institutional racism may reduce access to goods, services, and opportunities for African Americans . . . (p. 812).

Such results of institutionalized discrimination may create stress without the conscious awareness of the underlying cause.

Much of the research on discrimination has focused on the perception of individual discrimination, rather than structural discrimination. Meyer (2003) suggests that this form of research may deflect attention away from the social nature of chronic institutionalized discrimination. Link and Phelan (2001) echo these concerns when they contend that trying to

explain a specific act by focusing on the attitudes and beliefs of individuals “could cloud rather than illuminate our understanding of why stigmatized groups experience so many disadvantages” (p. 372).

Meyer (2003) also maintains that capturing the true effects of structural prejudice and discrimination is not likely when only one group is studied. For example, studies that focus on African Americans and high blood pressure may not capture much variation in health outcomes if the discrimination is institutionalized and therefore affecting all group members in roughly the same way. This could lead to the mistaken interpretation that the relationship between discrimination and health outcomes is relatively weak, when in fact the results only capture the within-group variation resulting from individual discrimination and not institutionalized discrimination.

Different types of discrimination may interact with each other in a variety of ways. Experiencing a relatively minor form of everyday discrimination such as not being able to hail a cab may evoke stress not only from the immediate encounter but also from the memory of other instances of personal and communal forms of discrimination (Meyer, 2003). Enduring the chronic stress of everyday discrimination may also magnify the impact of other forms of stress that are not related to discrimination (Williams et al., 2003).

Membership in multiple disadvantaged groups may also create unique forms of stress. The exposures to stressors for members of such groups may not only be greater, the exposures may also be *different* and the individual health effects of those exposures may be *multiplied*. As Aneshensel (1992) says, “Stress-reactivity may depend upon constellations of social statuses” (p. 24). For example, poor Blacks experience more psychological distress and greater health disparities than poor Whites or higher-income Blacks, perhaps because of the combined burden

of poverty and racism (Anderson et al., 1991; Clark et al., 1999). Similarly, low-SES Blacks living in neighborhoods with high social instability had higher blood pressure than low-SES Blacks living in more stable neighborhoods (Anderson et al., 1991).

Therefore, for the purposes of this study, measurement of the stress of discrimination incorporated different types of discrimination by measuring different types of exposures to stressors and the perception of those stressors. The study design included two different socioeconomic groups and two different racial groups in order to allow comparisons between groups with different exposures to institutionalized discrimination, and also to allow for membership in more than one disadvantaged group.

Research Question Two

A second part of the a priori theory for this study suggests that the chronic stress of discrimination is one of the underlying causes of racial and socioeconomic health disparities in our country. This concept essentially constitutes the psycho-biological portion of the biopsychosocial model. In order to test this concept, the second research question for the study asks: What percentage of the total variance in stress-related illness is accounted for by exposure to stressors and perceived stress?

Health Disparities

The National Institutes of Health defines health disparities as differences in “the incidence, prevalence, mortality, burden of diseases, and other adverse health conditions that exist among specific population groups in the U.S.” (National Institutes of Health, 2002).

Race-Related Health Disparities

Morbidity is higher for African Americans than European Americans in our society.

African Americans are more likely than other ethnic groups to experience morbidity and/or activity limitation from:

- hypertension and heart disease,
- visceral obesity,
- low birth weight,
- diabetes,
- asthma and other respiratory illnesses,
- HIV/AIDS,
- and depression and anxiety

(U.S. Department of Health and Human Services, 2000; Gold et al., 1993; Dixon et al., 2001).

African Americans also have higher rates of mortality than European Americans for eight of the ten leading causes of death in the U.S., including

- heart disease,
- stroke,
- diabetes,
- flu and pneumonia,
- HIV/AIDS,
- cancer,
- unintentional injuries,
- and liver cirrhosis.

This results in an overall mortality rate that is 1.6 times higher for African Americans than for European Americans. Despite recent improvements in the overall mortality rate for African Americans, “the Black/White ratio for all-cause mortality in 1995 [was] virtually identical to that of 1950” (Williams, 1995, p. 175).

Socioeconomic Status-Related Health Disparities

Population groups in the U.S. that experience the highest levels of poverty and have the least education also suffer the worst health status. Poverty and lack of education are associated with increased morbidity and mortality from:

- heart disease,
- diabetes,
- obesity,
- and elevated blood lead levels.
- low birth weight,

People in the lowest income families report three times as much limitation in activity caused by chronic disease when compared to people in the highest income families (U.S. Department of Health and Human Services, 2000).

Cohen, Kaplan, and Salonen (1999) explain that the association between socioeconomic status and health exists at every level of the SES hierarchy, with those below the poverty line experiencing the worst health, middle-SES groups experiencing moderately good health, and upper-SES groups experiencing the best health. This finding is critical to the understanding of the relationship between SES and health. If there were little or no difference in health between middle- and upper-SES groups, then the poor health of low-SES groups might be explained by lack of access to medical care or other health-related material resources to which the middle- and upper-SES groups presumably have access. Instead, attempts to explain the relationship between SES and health with access to medical care, individual health behaviors, and functional arguments of reverse causality (i.e., low-SES is a result of poor health) have not proven fruitful (R.G. Wilkinson, 1999). This suggests that something beyond access to material resources and individual behaviors may be responsible for SES-related health disparities

Inter-Relatedness of Race and SES for Health Disparities

Williams (1999) argues that the relationship between SES and racial health disparities is directly related to discrimination.

SES is not just a confounder of racial differences in health but part of the causal pathway by which race affects health. Race is an antecedent and determinant of SES, and racial differences in SES reflect, in part, the successful implementation of discriminatory policies premised on the inferiority of certain racial groups (p. 177).

While differences in SES do account for much of the racial disparities in health, African Americans still have lower levels of life expectancy than European Americans for every income level.

Parallels Between Health Disparities and Stress-Related Illness

Understanding how stress affects the body can illuminate the relationship between stress and many health disparities. Acute stress – stress that is produced by discrete, time-limited events – creates a physiological reaction known as the fight-or-flight response (Selye, 1956; Sapolsky, 1998), which prepares the body for danger. Chronic stress – stress that is persistent over time – affects the allostasis systems of the body – its ability to adapt or adjust. When the body is unable to adapt or adjust to persistent fight-or-flight responses, it may experience a condition called allostatic load (McEwen, 1998). Allostatic load produces consistently elevated responses in some body systems, while other systems produce tissue fatigue resulting in insufficient or suppressed responses. The consequences include a wide variety of chronic illnesses, many of which are the same as the health disparities mentioned above (See Table 2.1).

Table 2.1. *Mechanisms for Stress to Translate into Illness*

Immediate health effects	Interim health effects	Chronic illness
<i>Fight-or-flight response</i>		<i>Allostatic load</i>
Increased blood pressure	High blood pressure*	Heart disease*
Increased heart rate	Irregular heart beat	Stroke*
Fats released into blood	High cholesterol	
Increased blood clotting		
Circulation diverted	Circulation of fats restricted	Visceral obesity*
to major muscle groups	Blood diverted away from fetus	Low birth weight*
Sugars released into blood	Glucose intolerance	Diabetes*
Breathing rate increases	Hyperventilation	Asthma*
	Shortness of breath	Respiratory disease*
Immune system increases,	Colds	Cancer*
followed by suppressed	Flu*	Contract HIV* (if
immune function	Pneumonia*	exposed)
	Dental cavities	HIV / AIDS*
Mind becomes more alert,	Lethargy	Depression*
followed by suppressed	Nervousness	Anxiety*
mental function		

Note. * = illness for which there is a racial and/or socioeconomic health disparity (U.S. Department of Health and Human Services, 2000).

Institutionalized Discrimination and Stress-Related Illness

In chapter one, Figure 1.1 illustrated the a priori theory for this study by suggesting that stressors of structural discrimination, when added to the equal-opportunity stressors experienced by more privileged groups, amplify stress-related illness to create stress-related health disparities for disadvantaged racial and socioeconomic groups. Previous sections of chapter two have reviewed specific mechanisms of structural discrimination and their ability to create stress, the specific health disparities of each population group, and how these disparities mirror stress-related illnesses. The following discussion broadens this perspective further by exploring potential evidence of a relationship between these mechanisms of structural discrimination and stress-related illnesses.

Direct measurements of the health effects of forced migration are most likely impossible to obtain, due to the significant amount of time that has passed since the practice of legalized slavery. However, at least one study implies a potential relationship between forced migration and cardiovascular mortality rates. Researchers Fang, Madhavan, and Adlerman (1996) found that African-American residents of New York City who were born in the South, where slavery was prevalent and the social memory of forced migration continues to exist today, had substantially higher mortality rates from cardiovascular disease than African Americans born in the Northeast, where slavery was less common. These differences were so robust that the authors stated, “the Black-White differences in mortality [for cardiovascular causes] are largely accounted for by mortality among Southern-born Blacks” (p. 1549). Thus, the forced migration of slavery is one mechanism that could still have an impact on the health outcomes of African Americans born in the southern region of the United States.

Several mechanisms of social closure have also resulted in stress-related health outcomes, although this relationship remains somewhat inferential in many cases. For example, those who are denied or restricted access to jobs, promotions, or pay raises would most likely have lower incomes than those who do not experience such discrimination. Therefore, the health effects of employment discrimination are most likely to be reflected in income- or SES-related health disparities (e.g., disparities in morbidity and mortality for heart disease, obesity, low birth weight, diabetes, and elevated blood lead levels discussed earlier in this chapter). However, some studies have captured the health effects of restricted employment opportunities directly. Radmacher (1987) reported that those who perceived a threat to their job experienced stress-related symptoms such as concentration problems, emotional states, and physiological symptoms. A second study that specifically investigated the biochemical markers of stress found that respondents who had been unemployed for greater lengths of time had higher levels of urinary norepinephrine and epinephrine (two stress-related hormones that help to initiate the fight-or-flight response) when compared to respondents who were employed or those who were unemployed for shorter time periods (Fleming, Baum, Reddy, & Gatchel, 1984). Such findings suggest that population groups who are consistently exposed to employment discrimination may experience stress-related health consequences over time.

The social closure of housing discrimination often results in increased exposures to neighborhood segregation, poverty, and social disorder for African Americans and those of low socioeconomic status. Several studies have shown a relationship between neighborhood segregation, poverty, or disorder and stress-related health outcomes. For example, Latkin and Curry (2003) found that even after adjusting for baseline levels of depressive symptoms, they could predict higher depressive symptoms 9 months later for respondents who lived in

neighborhoods characterized by vandalism, litter or trash, vacant housing, teenagers hanging out, burglary, drug selling, and robbery. Ross (2000) also found higher levels of depression in “residents of poor, mother-only neighborhoods” compared to residents of more advantaged neighborhoods. English et al. (2003) found that full-term low birth weight was associated with neighborhoods that had a low measure of stability, while pre-term low birth weight was associated with neighborhoods that had a low measure of affluence (i.e., high poverty). Cubbin, Hadden, and Winkleby (2001) found that after adjusting for SES, Black women living in deprived neighborhoods were at increased risk for a variety of cardiovascular disease risk factors (e.g., being diabetic, being a smoker, having a higher body mass index and having high blood pressure) compared to Black women living in less deprived neighborhoods. Diez Roux et al. (2001) confirmed the natural conclusion of these higher risk factors with their study, which found that residence in a disadvantaged neighborhood was associated with an increased incidence of coronary heart disease, even after controlling for personal income, education, and occupation. Such a plethora of findings suggest that those who are the targets of institutionalized discrimination for housing are likely to experience stress-related illness as a result.

Restricted access to quality education could also result in poor health outcomes. *Healthy People 2010* (U.S. Department of Health and Human Services, 2000) reports that the overall mortality rate for adults with less than a high school education is more than twice as high as adults with some education beyond high school. Similarly, infants of mothers with less than a high school education have almost double the infant mortality rate as those born to mothers with some education beyond high school. Higher education may increase access to and understanding of health-related information, thus helping adults and mothers engage in more health-promoting behaviors and reduce their risk of mortality. But it is also possible that the doubling of mortality

risk for those with less than a high school education could be indicative of the increased stress level caused by the ramifications of a restricted education, including restricted access to employment, affordable housing, and health benefits.

The stress of credentialing and goal-striving stress could also negatively impact the health of disadvantaged groups who are successful in obtaining access to education beyond high school, but restricted in their access to the employment they expected. Adler and Ostrove (1999) report that years of education are more strongly related to improved health status for European-American men than they are for European-American women or for African-American men or women, suggesting that additional years of education do not provide as much protection for disadvantaged racial and gender groups.

Restricted access to transportation, technology, and healthcare may increase stress-related illness and mortality as well. Researchers Kawachi and Kennedy (2002) report that not owning a car in Britain is considered “the single most important indicator of mortality risk” (p. 62). They argue that this risk does not come from an absolute survival disadvantage, but because the lack of transportation can restrict access to opportunities and resources in the context of a society where everyone else owns a car. Although research is not available on the impact that restricted access to quality healthcare and basic technologies might have specifically on stress-related illness, the same principle could apply – restricted access to resources required for full participation in society can increase stress and therefore stress-related illness.

Several studies have documented a strong relationship between relative deprivation and health outcomes. When the relationship between SES and health is compared between different countries, it is not the absolute living standards or material circumstances that explain these disparities. Instead, the disparities in health status directly reflect the disparity in income for each

country (Sapolsky, 1998). Kawachi and Kennedy (2002) explain that these differences reflect the relative position of individuals in their respective economic hierarchies, and are specific only to their reference group. For example, low-SES Americans often have incomes much higher than the average income of individuals in many developing countries, but because their reference group is confined to other Americans, they feel relatively deprived and subsequently experience poorer health outcomes. These findings imply that such health disparities are not a reflection of what the lower-SES groups are unable to buy to improve their health, but rather the social pressures and relative inequalities they are unable to escape.

The gradient between SES and health outcomes mirrors the gradient in income disparities even after a wide variety of factors, such as access to health care and poor personal health behaviors, are controlled. In the Whitehall study of British civil servants (Marmot, 1994), the death rate for the lowest-SES workers in the study was more than three times that of the highest-SES workers in the study. All participants had equal access to health care services and were ranked as middle-to-upper-SES according to the British ranking of social class. Smoking, blood pressure, and cholesterol explained less than half of the difference in mortality rates between social classes. Even with all of these factors taken into consideration, each higher grade of social class had a lower rate of mortality and morbidity than the class below it, suggesting that *relative* social ranking had a strong influence on health outcomes. Although most of the studies examining the effects of relative deprivation on health outcomes use the overall morbidity or mortality rate as their outcome measure, Sapolsky (1998) states, “When one examines the SES gradient for individual diseases, the strongest gradients occur for diseases with the greatest sensitivity to stress” (p. 306).

Geronimus (1992) provides a theoretical basis for the stress of discrimination to affect overall mortality rates. Some researchers have suggested that stress is so pervasive and persistent for disadvantaged racial and socioeconomic groups that membership in these groups should serve as a proxy for exposure to chronic stress, with age serving as a proxy measure of the degree of cumulative stress over time (Anderson, McNeilly, & Myers, 1991; Williams, 1995). Geronimus further elucidates this theory, which she calls the “weathering hypothesis” by stating “prolonged, effortful, active coping with social injustice may, itself, exact a physical price . . . which may accumulate with age” (p. 210). She posits that the health status of groups experiencing such social injustices may begin to deteriorate in young adulthood. She also notes that “the causes of death that were most . . . consistent with the weathering hypothesis were those that have been consistently linked to social class, racial identification, or other social or behavioral factors” (p. 212). In other words, the weathering hypothesis, or the theory that the chronic stress of discrimination accumulates with age and wears the body down, is most consistent with the illnesses for which there is a social class or racial health disparity. Thus, the stress of racial and social status discrimination may produce accelerated aging that leaves such groups more vulnerable to poor health outcomes and truncated life expectancies.

Research Question Three

Psychological, sociological, and biosocial disciplinary models have alternately interpreted higher stress and stress-related illness among disadvantaged groups to either differential vulnerability (through psychological assessment) or differential exposure (through the social environment). The biopsychosocial model and a priori theory of this study present an alternative to these either/or theories by suggesting that both are relevant. The a priori theory

proposes that social exposures cannot influence health outcomes without the intermediate step of psychological assessment.

Little is known about the interaction between social exposures and psychological assessments for disadvantaged groups. Although many studies have documented the relationship between random or equal-opportunity stressors and the perception of stress, there is little to document how mechanisms of institutionalized discrimination, which create disproportionate exposures to stressors for disadvantaged groups, affect specific stress-related perceptions. In order to test this concept, the third research question for this study asks: How are mechanisms of institutionalized discrimination in our society (forced migration, social closure, and relative deprivation) perceived to contribute to chronic stress (through perceived lack of control, engagement in tasks, and perceived inadequate resources) for different racial and socioeconomic groups?

Stress-Related Perceptions

The underlying discriminatory mechanisms in our society that could increase exposures to stressors have been discussed earlier in this chapter. What kinds of perceptions might interact with these exposures to result in illness? Researchers who have blended the biomedical and psychological models have identified specific cognitive processes or perceptions that are related to poor health outcomes. These perceptions include: lack of perceived control, high task engagement, and lack of perceived resources.

Lack of Perceived Control

One perception is the lack of control over a stressor, which is often measured in terms of mastery, personal competence, self-esteem, or locus of control. Low levels of each of these constructs (i.e., low perceived control) consistently reveal a vulnerability to stress (Lin & Ensel, 1989; Aneshensel, 1992; Krieger, Rowley, Herman, Avery, & Phillips, 1993) resulting in poorer physical and mental health outcomes (Williams, 1990). Some researchers posit that a lack of perceived control may make a person more vulnerable to stress by reducing their chances of utilizing stress-buffering resources (Williams, 1990).

High Task Engagement

Task engagement is another perception that influences the stress process. High task engagement means the person is psychologically and emotionally engaged in the event. Several studies have shown that participants have higher physiological reactivity to a stressor when they are psychologically engaged in an event, and lower reactivity when they are disengaged or do not care about the outcome (Ewart, 1995; Anderson et al., 1991; Cohen et al., 2000). James, Hartnett, and Kalsbeek (1983) coined the phrase “John Henryism” to explain the phenomenon of Blacks working against the overwhelming odds of multiple structural barriers to gain control over their environments, a construct which assumes high task engagement in the desire to control the environment. The researchers showed that Black men high in John Henryism experienced higher blood pressure than those scoring low in the construct.

Lack of Perceived Resources

A third perception is a lack of coping resources. Adequate cognitive coping skills can buffer the negative impact of stress and reduce the chance of illness by providing the individual with a positive comparison, perceiving the stressor as a challenge rather than a threat, and finding a sense of commitment to pursue the problem rather than avoid it (Kobasa, 1979; Kobasa & Puccetti, 1983). Some researchers have suggested that specific social groups may be deficient in these coping skills. Although groups differ in their behavioral responses to stress, studies have not shown any consistent selection of ineffective strategies, reflecting more of an individual than group variation in this area (Aneshensel, 1992).

Institutionalized Discrimination and Stress-Related Perceptions

Examining the mechanisms of discrimination from a psychological stress perspective illuminates how these mechanisms might reduce perceived control over stressors and reduce access to stress-buffering resources. This line of inquiry also helps to describe the social context in which people perceive the importance of their stressors and determine their level of engagement. For example, population groups that experienced forced migration were exposed to stressors beyond their control and removed from virtually all of their stress-buffering and economic resources. Low engagement was probably not a possibility, as survival depended on the ability to adapt and change to accommodate these stressors. Exploring the generational impact of forced migration for the descendents of slaves could include investigating the social, psychological, and biological implications of such events.

Population groups that experience social closure may be more likely to work in lower-status jobs with increased exposure to stressors and decreased control. Such groups may also

encounter limited access to economic assets for dealing with stressors. High engagement in the excluded resources is likely, based on the social values they represent (Pearlin, 1989). Relative deprivation may create a sense of reduced control when access to resources is perceived to be inequitable. Consumerism may enhance engagement in such resources. Goal-striving stress may result from high engagement in goals that one perceives to be more difficult or impossible to achieve. Life-style incongruity may reflect a high engagement in a particular lifestyle accompanied by a lack of economic resources to achieve it. This study provides an opportunity to explore each of these potential interactions in more detail.

Another important element of research question three is the exploration of the context of stress exposures and how that might influence psychological assessment. Psychological vulnerability may be increased when coping mechanisms are exhausted through persistent and pervasive exposures to stressors. Many forms of social closure are inter-connected, confirming Link and Phelan's (2001) claims that "stigmatized groups are disadvantaged in a broad range of life domains" (p. 380). For example, without access to technology such as a telephone, an answering machine, and the internet, the ability to obtain a job is restricted. Without access to higher education and credentialing, the ability to obtain a *good-paying* job is restricted. Without access to a good-paying job, the ability to obtain quality healthcare and reliable transportation is restricted. Without access to quality healthcare and reliable transportation, the ability to *keep* a good-paying job is restricted. Without the ability to obtain and keep a good-paying job, the ability to purchase a home is restricted. Without access to a home in a neighborhood with a low concentration of poverty, the ability to obtain a quality education for your children is restricted. Without access to a good-paying job for yourself and a quality education for your children, the ability of your children to access higher education is restricted. Without access to a home, the

ability to obtain additional loans and pass on wealth to your children is restricted. And the cycle continues. Research question three seeks to explore the influence of such inter-connected stressors on the perception of stress.

CHAPTER 3

RESEARCH DESIGN AND METHODS

Research Philosophy

Many qualitative researchers contend that investigators who explicitly state their cultural framework and epistemological perspectives enhance the reliability and validity of their data (Shank, 2002). Readers who can critically review an investigator's findings within the context of that investigator's research philosophy and related subjectivities can better examine if any bias is present. One could argue that this is equally important for quantitative research. For example, information about the quantitative investigator's research philosophy could provide insight regarding which questions respondents were asked and which questions were omitted, the choice of survey instruments, the selection of variables for analysis, the type of analysis used, and the interpretation of results.

I will now describe my own cultural framework to provide the reader with a context for interpreting my qualitative and quantitative research. I am a European American, thirty-eight year-old divorced woman with no children. My household income is 366% above the 2005 poverty threshold of \$9,570 for a household with one adult between the ages of 18 and 65 (U.S. Census Bureau, 2003). I was raised in the rural Midwest of the United States. I have had personal experience with stress-related conditions which were alleviated through a variety of stress management techniques. For the last 8 years I have taught stress management to a mostly African-American indigent population in the outpatient clinic of Grady Hospital in Atlanta,

Georgia. I developed this stress management program based on the psychological and biomedical models of stress and stress-related illness. Although pre/post-test data using the Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) demonstrate that the program is effective in at least temporarily reducing the psychological stress of the participants, I have doubts that these benefits are sustained long enough to reduce the stress-related morbidity and mortality for the participants because the program does not attempt to remove nor address any of the persistent structural sources of stress for this disadvantaged group. It is through my experiences in teaching this program and my subsequent doctoral training that I have come to develop my a priori theory regarding the biopsychosocial implications of stress for different racial and socioeconomic groups.

My epistemological perspectives are informed by a mix of constructionism, pragmatism, critical theory, and post-positivism. I am a constructionist (Crotty, 1998) because I believe our unique blend of cultural perspectives (gender, ethnicity, age, nationality, religion, education, SES, etc.) create the filters through which we view the world and in which we find meaning from the events we experience. I am a pragmatist (Crotty, 1998) in the sense that I believe information collected through research should be applied to make the world a better place. I am a critical theorist (Freire, 1990) because I believe the active use of research data should empower people to break the cycle of oppression through a critical exploration of the underlying causes of their struggles and provide hope for lasting improvement in their lives. I also see my future research including a post-positivist perspective (Crotty, 1998). Positivist research, in its claims to be purely objective and its failures to do so, has contributed to the oppression of disadvantaged groups in our society (Krieger, 1999). But I believe there is still value in striving to be objective

in some cases, as long as the limits and subjectivities of the research methods and the investigator are more clearly stated.

Study Design

This study employed a mixed-methods design to explore the chronic stress of discrimination for different racial and socioeconomic-status (SES) groups and its impact on stress-related illness. The National Institutes of Health Interest Group on Culture and Qualitative Research (2000) describes the circumstances under which a mixed-methods approach may be appropriate.

When the goal is to understand the lived experience from the social actor's perspective within a specific context, qualitative methods are appropriate. When the data collected are of a numerical nature and the goal is to understand the strength of relationships and to make prediction or generalize to larger populations, quantitative approaches seem appropriate. When the goal is a combination of all of the above, a sequential or integrative model may be the most appropriate means of conducting research (p. 11).

For this study, the quantitative non-experimental survey design had two goals. For research question one, the goal was to assess how much of the variance in stress scores is accounted for by race and SES. Race was measured by self-report, SES was extrapolated based on self-report data used to determine poverty level, and stress was measured by four separate stress scales (described in greater detail in the Data Collection Instruments for Quantitative Phase section later in this chapter.) The goal for research question two was to assess how much of the variance in stress-related illness is accounted for by exposure to stressors and perceived

stress. Stress-related illness was measured by self-report and exposure to stressors and perceived stress was measured by the four separate stress scales mentioned previously.

The goal of the qualitative design was to explore the social context of the psychological stress process for different racial and socioeconomic groups. This context was measured with photovoice and focus group techniques (described in the Data Collection Methods for Qualitative Phase section later in this chapter). The overall goal of the study was to gain a deeper understanding of how racial and socioeconomic discrimination contribute to chronic stress and stress-related illness through a combination of quantitative and qualitative research methods.

Hines (1993) describes the importance of such a mixed-methods approach when working with different cultural and ethnic groups.

It is essential that the researcher have a grasp of the problems . . . and be able to examine and understand the nature of the world as it is seen by members of a particular cultural or ethnic group. This involves being able to encompass different ways of knowing about the world and different versions of cultural reality . . . One way to establish a deeper understanding of different cultural and ethnic realities . . . is to link the quantitative methods of survey research with the methods derived from the qualitative, ethnographic approach (pp. 733-734).

Given that SES is as much a cultural perspective in our society as membership in different racial groups (Huff & Kline, 1999), a mixed-methods approach also enables a deeper understanding of the problems experienced by members of different socioeconomic statuses. Meyer (2003) and Krieger (1999) assert that the integration of various research methods, with multiple levels of analysis, could also provide valuable insight into the relationship between discrimination and

health consequences. As Debats, Drost, and Hansen (1995) state, “The employed combined qualitative quantitative approach meets the growing recognition among researchers that there is a need to re-establish the qualitative grounding of empirical research in order to be truly scientific” (p. 373).

There are several models of mixed-methods studies, offering diverse options for conducting investigations and integrating results (Steckler, McLeroy, Goodman, Bird, & McCormick, 1992; de Vries, Weijts, Dijkstra, & Kok, 1992; National Institutes of Health Culture and Qualitative Research Interest Group, 2000). As described in Chapter One, I employed a design in which quantitative and qualitative phases inform each other as well as the final results of the study. This synergistic view helps to delve more deeply into the specific experiences of stress for different socioeconomic and racial groups, while also confirming / disconfirming these differences using survey instruments that can be generalized to the broader base of the population groups.

While each phase of the study informed the other, neither was dependent on the other to be successful. The quantitative phase of the study was used to numerically describe the levels of stress for different racial and SES population groups and to describe the levels of stress-related illness for participants with different stress levels using four different theoretical perspectives on stress (see section on Stress Scales below). The qualitative phase of the study supported these findings by exploring the social context of numerical similarities and differences between the groups. But the qualitative phase was not limited to the theoretical perspectives that were used when the quantitative instruments were created, so findings from this phase also provided greater insight into differences in the stress experience for different racial or socioeconomic

population groups, thus highlighting which stress scales are most sensitive to the differences, and indicating which issues were not included in the instruments.

Quantitative Phase

The quantitative phase of this study consisted of a non-experimental design using explanatory regression analysis. Pedhazur (1997) states, “In explanatory research, data analysis is designed to shed light on theory” (p. 8). I used quantitative data analysis to shed light on my a priori theory that institutionalized race and class discrimination contribute to chronic stress and therefore more stress-related illness for disadvantaged racial and SES groups in our society. To do this, I used race and SES (proxies for discriminatory experiences based on race and class) as independent variables on the dependent variables of four separate stress scales. Pedhazur (1997) argues, “Multiple regression analysis (MR) is eminently suited for analyzing collective and separate effects of two or more independent variables on a dependent variable” (p. 3).

Recruitment for Quantitative Phase

The study population consisted of four population groups: (a) low-SES African Americans, (b) low-SES European Americans, (c) middle-SES African Americans, and (d) middle-SES European Americans. A convenience sample of participants was recruited through outpatient primary care medical clinics throughout the Atlanta area.

After obtaining overall study approval from the University of Georgia Institutional Review Board, I obtained IRB approval from each primary care clinic through the clinic administrators. This recruitment strategy had several benefits. First, I was employed in one hospital in Atlanta, which allowed me relatively easy access to the low-SES African American

sample group. Second, hospitals and medical clinics provide waiting rooms and an atmosphere where people are expected to wait before receiving services. Approaching a person to ask them to complete a survey during a time when they were already expecting to sit and wait may have enhanced recruitment in comparison to locations where people would have been on the move. Presenting the study as a health-related study also increased its salience in this atmosphere.

Inclusion/Exclusion Criteria for Quantitative Phase

Inclusion criteria for the quantitative portion of the study was: individuals 18 years of age or older, individuals of African-American or European-American race, individuals who speak English, individuals who were mentally capable of completing the exam, and individuals who agreed to provide socioeconomic and racial data on the surveys. Participants were not excluded from participating in the study if they were illiterate, as long as they were willing to have the surveys administered to them orally and, according to the researcher's judgment (based on my 8 years of experience working with many illiterate patients), as long as they appeared to understand the concepts discussed in the surveys. Participants were excluded from the study if they indicated a race other than African American or European American on the survey. Due to the research objective in distinguishing between these two racial groups, individuals who identified as both African American *and* European American were also excluded from the study. Although from a theoretical perspective, there is reason to believe that the mechanisms of institutionalized race and class discrimination in our society could also exist for persons of biracial, multiracial, Hispanic/Latino, Native American, and Asian American heritage, I limited this study to two racial groups in order to keep sample sizes and focus group numbers accessible and maintain a reasonable timeline for study completion. I chose the two races of African

American and European American because European Americans represent the majority and most privileged racial group in our society and because African Americans, as a racially stigmatized group with the potential to experience more stress as a result, are well represented in the metropolitan Atlanta area.

Informed Consent

A consent form describing both phases of the study was reviewed with each potential participant. The consent form was written at a 5th grade reading level to make it accessible to participants with varying levels of reading proficiency. It was approved by the University of Georgia Institutional Review Board and the clinic administrators for all study clinics before the study began.

Each consent form contained an identification number that was correlated to an identification number on each survey. This was necessary to determine eligibility criteria (perceived stress score) and group placement (race and socioeconomic status) for the qualitative phase of the study. See Appendix A for the consent form.

Data Collection Instruments for Quantitative Phase

Four types of data were solicited from each participant in the quantitative portion of the study: 1) demographic data on gender, age, education, relationship status, work status, and parenthood status, 2) independent variable data on race and socioeconomic status, 3) dependent variable data on stress as measured through four theoretically different stress scales – the Social Readjustment Rating Scale - Revised, the Daily Hassles Scale, the Traumatic Events Scale, and the Perceived Stress Scale, and 4) dependent variable data on self-reports of current stress-related

illness. See Table 3.1 for further details on each type of data and Appendix B for the complete survey instrument.

Demographic Data

Demographic data on gender, age, and education were used to assess comparability across population groups. I attempted to recruit an equitable number of men and women with a comparable age range from each racial/SES group. Although men and women most likely experience stress differently in our society (Pearlin, 1989; Krieger, Rowley, Herman, Avery, & Phillips, 1993; Taylor et al., 2000), as do individuals of different ages (Turner & Noh, 1988), I did not pursue an examination of underlying sources of stress based on gender or age for this study. First, the foundation of this study was to better understand the stress experience of population groups that experience disproportionate levels of stress-related illness. While women in our society do experience different types of illnesses and conditions, for the most part there are few health disparities based on gender (U.S. Department of Health and Human Services, 2000). Disparities based on age are also not clear cut. Second, the inclusion of gender or age in this study would have required a greater sample size and additional groups for focus group discussions, which was not realistic for my time frame. See Table 3.1 for further details on the demographic data.

For more information on demographic questions relating to marital, work, and parenthood status, please see the section on Modification of Scales and Scoring below.

Race

The independent variable of race consisted of two items. Questions on race complied with the format recommended by the National Institutes of Health (2001), as originally developed by the Office of Management and Budget. Because I did not recruit a significant number of participants of Hispanic or Latino descent, I used the condensed version of the question which combines ethnicity with race (see Appendix B for response options).

In addition to this question, I also asked participants the question, “Where did you grow up?” This provided further information for additional Black Belt analyses.

Socioeconomic Status

The independent variable of socioeconomic status consisted of an income/poverty threshold composite of four items and a wealth composite of four items. Duncan, Daly, McDonough, and Williams (2002) report that economic indicators of income and wealth are considerably more sensitive to mortality risk than the traditional SES indicators of occupation and education level, and suggest that income and wealth should be standard features for monitoring links between SES and health in the U.S.. The authors define income as, “the sum of income from all sources received by all members of the household over some time period, typically the calendar year” (p. 249). They recommend dividing the household income by a poverty threshold based on size of family and number of children under 18 in the household to further refine this measure (U.S. Census Bureau, 2003). The authors define wealth as, “the *net* amount held in accounts and assets—the difference between the market value of that asset and whatever remaining debt the household owes on that asset” (p. 250). They explain that income

and wealth are related but separate concepts, as can be imagined by a retiree who has a limited income but substantial wealth accumulated in home ownership.

Duncan and Petersen (2001) suggest that it is best to begin by asking respondents for exact dollar amounts for income and wealth questions, but they warn that this may result in many respondents leaving the questions blank. The authors report that there are several steps researchers can take to minimize such nonresponse reactions. For example, respondents who answer “don’t know” or refuse to answer income or wealth questions are often offering these responses because they do not know the exact amount, but are frequently willing to answer “unfolding” questions that guide them in estimating these amounts. Therefore, respondents for this study were asked to provide exact dollar amounts if known, or to estimate based on specified ranges if necessary.

The answers to income, number of adult family members in a household, and number of children under the age of eighteen in the household were compared against the U.S. Census Bureau’s (2005) poverty threshold to determine if the respondent lived in a household above or below the poverty threshold (see Appendix B for response options). The Atlanta Livable Wage Campaign suggests that a family of three (one adult, two children) living in Atlanta requires approximately \$27,000 per year to afford to live without social service assistance (see Appendix C), which is approximately 167% the 2005 poverty threshold of \$16,090 for such a family. Authors Kawachi and Kennedy (2002) report that “the American public defines poverty as a level of income that is less than half of the median family income” (p. 55). The U.S. Census Bureau (2005) defined the real median household income for 2005 as \$46,242, thus the relative poverty threshold, based on Kawachi and Kennedy’s argument, is \$23,121. Combining the livable wage and relative poverty guidelines, I classified as low-SES any participant whose

household income was less than 200% of the poverty threshold for their family size but no lower than the relative poverty threshold of \$23,121. Any participant whose household income was greater than the relative poverty figure *and* 200% or more of the poverty threshold was classified as middle-to-upper-SES.

The wealth items were used to determine if the participant owned a home, and if so, if more money was owed than the current value of that home. The wealth information was used after participants were classified by income to assess comparability between SES groups.

Stress Scales

The four stress scales I used as separate dependent variables included the Social Readjustment Rating Scale Revised (SRRS-R) (Hobson et al., 1998), the Daily Hassles Scale (DHS) (Kanner, Coyne, Schaefer, & Lazarus, 1981), the traumatic events scale (TES) (Turner & Lloyd, 1995), and the Perceived Stress Scale (PSS) (Cohen et al., 1983). The original Social Readjustment Rating Scale (SRRS) was developed by Holmes and Rahe in 1967 as a tool to measure the stressfulness or amount of social readjustment a respondent perceived for different life events. Hobson et al. (1998) report that the SRRS, “has been one of the most widely cited assessment instruments in the literature on stress and stress management. A review of published research since 1967 in psychology, medicine, and business indicates over 4000 citations” (p. 1). Hobson et al. developed a revision of the SRRS in 1998 to address criticisms regarding questions about the bias and relevancy of some of the life events, to address the confounding of some life events as symptoms of stress, and to address other methodological issues concerning sampling, subjectivity, and weighting. The revised scale consists of 51 events, with each event ranked from 1 to 100 in relation to the amount of adjustment required (1 = low, 100 = high). Testing of the

revised scale involved computing mean values for each of the 51 events to yield overall scores on a 1-100 scale, then testing if reliable mean differences existed by testing the vector of the 51 event means for the entire sample for equality, using a repeated measures MANOVA. Findings revealed significant differences in mean ratings (Wilks' Lambda = .12, $F(33.9, 1,467.3) = 329.67, p < .05$, Epsilon² = .88) (p. 6). The authors concluded, "the 51 life event mean ratings can be viewed as reasonably reliable measures of perceived stressfulness in the U.S. population" (p. 18).

The Daily Hassles Scale (DHS) was designed by Kanner, Coyne, Schaefer, and Lazarus in 1981 as an alternative to life events scales. The authors posited that the correlation between life events and health outcomes was weak, and that day-to-day events should have more proximal significance for health outcomes through their cumulative properties. Test-retest correlations for the 117 hassles items as tested once per month over the course of 9 months resulted in an average correlation of 0.79 for frequency and 0.48 for intensity with correlated means of $t = 4.7, p < .001$ (p. 13).

Responding to the gaps they perceived in life events and chronic stress measures, Turner and Lloyd designed the Traumatic Events Scale (TES) in 1995 in an attempt to expand the ability of stress researchers to adequately measure social stress. The authors state that traumatic events "differ from typically assessed life events primarily in terms of their severity and, presumably, the duration of their emotional consequences" (p. 362). The authors theorize that traumatic events would rarely be forgotten or reported differently by respondents because of their significant mental health consequences. In an attempt to confirm this hypothesis, 87% of the 1,393 adult respondents who received the original survey were re-interviewed 1 year later to assess the consistency of their scores on the traumatic events items. The authors report that kappa

estimates of reliability reveal that all but two of the twenty scale items meet minimal consistency standards of .60, while more than half of the items exceeded .70. In addition, the authors investigated whether current or recent psychiatric disorder affected the way respondents answered the items through “state dependence” (a tendency of individuals with a current psychiatric disorder to be more likely to remember or report traumas). They concluded that their traumatic events items “tend to be reported with reasonable reality, and that ‘state-dependence’ makes little or no contribution to the findings” (p. 364).

In 1983, Cohen, Kamarck, and Mermelstein designed the Perceived Stress Scale (PSS) to measure the degree to which respondents felt that their lives were unpredictable, out of control, and overloaded, as well as their current levels of experienced stress. The scale was created to capture perceptions of stress, rather than objective measures of events that could be stressful. The authors claimed that the PSS was impervious to the main weaknesses of life events scales, which included insensitivity to such constructs as chronic stress, stress of close family members and friends, stress from expected events in the future, and stress from events not included on the life events checklists. For these reasons, it was presumed that the PSS would be a better predictor of stress-related health outcomes than life-event scales (Cohen et al., 1983). Although the original PSS consisted of fourteen items, factor analysis revealed that a shorter, ten-item version “resulted in a slight improvement in both the total explained variance . . . and internal reliability (alpha coefficient = .78)” (p. 45). The authors also report that the PSS has good predictive validity because it is better than the life events scales at predicting physical and depressive symptomatology, social anxiety, and utilization of health services.

It was necessary to administer four different stress scales because each type of scale measured a different aspect of the stress process from a different theoretical perspective, and

each had its own strengths and weaknesses. Life events, daily hassles, and traumatic events scales measured the level of exposure to different types of stressors. Several studies have shown that when two or more of these scales are used, they independently contribute to the outcome variable, and more of the variance in disease states is explained when they are used together (Turner, Wheaton, & Lloyd, 1995; Turner & Avison, 2003; Wheaton, 1994). The PSS measured the outcome of these exposures, i.e., the resulting perception of stress. The combination of these four stress scales provided a more complete picture of the stress process for the participants of this study. See Table 3.1 for a summary of the dependent variable data. See Appendix B for specific items on each scale and response options.

Stress-Related Illness

I queried participants about their current stress-related illness by asking them if they had ever been told by a doctor or other health professional that they have any of the eleven different stress-related illnesses for which there is a health disparity, as identified in chapters one and two. Follow-up questions were asked for seven of the potentially transitory illnesses (such as high blood pressure) to determine if the participant still had the health problem. The format and time frame for these questions was consistent with the wording on the 2001-2002 National Health and Nutrition Examination Survey (National Center for Health Statistics, 2001-2002) and the 2002 National Health Interview Survey (National Center for Health Statistics, 2002) (see Appendix B for specific illnesses). A total score, with a range of 0 to 11, was tallied for each respondent by summing their responses to each individual illness to determine their current burden of stress-related illness. The use of such a composite stress-related illness variable is consistent with many studies investigating the relationship between stress and chronic illness (Baum, Garofalo, & Yali,

1999; McEwen, 1998; Cohen et al., 2000). See Table 3.1 for a summary of this dependent variable.

Modification of Scales and Scoring

The revised version of the Social Readjustment Rating Scale is designed to be scored in the same manner as the original SRRS – by asking respondents to assign a subjective weight to each item in relation to the amount of adjustment required. However, in their review of a multitude of life event inventories and their critiques, Turner and Wheaton (1997) report,

Despite repeated and widespread attempts to prove otherwise, the best conclusion from the existing research concerning the effectiveness of differential weighting using current approaches is that weighted indices do not generally increase the correlation with outcomes, whether using objective or (surprisingly) subjective weights (p. 43).

The SRRS was based on a previous scale, called the Schedule of Recent Experiences (SRE), which simply asked for the frequency with which the same 43 items occurred (Hawkins, Davies, & Holmes, 1957). The scales are so close that many authors either use both, or refer to the SRRS but score it as if it were the SRE (Gerst, Grant, Yager, & Sweetwood, 1978; McGrath & Burkhart, 1983; Miller, 1981; Grant, Sweetwood, Gerst, & Yager, 1978). Because there is no demonstrated additional value in assigning weights to these events, I scored the revised SRRS as if it were the SRE by simply asking, “How many times, in the past 12 months, did each of the following happen to you?”

The Daily Hassles Scale (DHS) was also modified to capture the frequency of exposure rather than the perceived severity of each event, allowing for a better comparison between the chronic stress measure and the life events and traumatic events measures. This scoring method is

consistent with a study by Turner and Avison (2003) which used simple counts from life events, chronic stress, and traumatic events stress measures to compare the impact of each type of stressor on the health outcome. The findings from Turner and Avison's study, which suggest that chronic stress contributes the most to health outcomes, followed by life events and traumatic events, were consistent with other studies that have used these three stress measures but allowed for more subjective scoring of the chronic stress measure (Turner et al., 1995; Turner & Lloyd, 1995; Wheaton, 1994), suggesting that the modification in scoring of the chronic stress measure still provides valuable data that is consistent with other stress research. Modifying the scoring on the DHS in this manner also provides a better theoretical justification for the combination of each of these measures in creating a "total stress score" to estimate the cumulative effect of exposure to stressors on health outcomes.

A simple total of the frequency of life events or daily hassles experienced would not have been sufficient to accurately compare population groups, however. A quick review of the items included in the SRRS-R found that, despite the fact that this scale was supposedly revised to address inherent biases, as many as 28 of the 51 items were based on three assumptions: 1) the respondent is married or in a relationship with a partner, 2) the respondent is employed, and 3) the respondent has children. If questions based on these assumptions were scored equally for all respondents, those who responded with zero on these items would have been scored equally, whether the assumptions were accurate or not.

To avoid this bias, it would have been possible to add a response option of "*does not apply*" for the items, but this could have been interpreted differently by each individual, and could have initiated responses of "*does not apply*" for events that could possibly occur, but have not occurred yet (e.g., "*victim of police brutality*"). Instead, I divided the total frequency of life

events identified by the number of relevant items. I determined if the items were relevant by asking the respondents the following three yes-or-no questions:

1. In the past 12 months, have you been married or in a relationship with a partner?
2. In the past 12 months, have you been employed?
3. Do you or your partner have children?

If a respondent answered *no* to any of these questions, I subtracted the related items from their total number of items and divided their frequency score by the reduced total. For example, if a respondent answered that they were not employed in the past 12 months, even if they answered all 51 items, I deleted the nine items related to the assumption that they were employed (e.g., “*being disciplined at work/demoted*”) and divided their total frequency score by the reduced total of 42. This gave a more accurate scoring of life event stress across population groups, because it reduced the bias of lower scores being interpreted as lower frequencies of stressful life events, when it was not possible for those events to have occurred for certain persons.

It could be argued that the same goal could be accomplished by incorporating skip patterns in the survey. Such a skip pattern might say, “Have you been employed in the past 12 months? If no, please skip to number 15.” However, my experience in working with low-literate population groups suggested that many readers have difficulty navigating these skip patterns, resulting in answers with questionable validity or whole pages being skipped. A deletion of the variables after they were completed, based on the three questions mentioned above, provides a more accurate interpretation of the scores. This method is consistent with Williams, Neighbors, and Jackson’s (2003) recommendation for the measurement of role-related stressors. The authors state, “One measurement solution in the area of . . . role-related discrimination is to establish the

number of roles occupied by an individual and adjust for role occupancy in assessing the effects of role-related stressors on health status” (p. 203).

I employed the same solution to the DHS. I used the answers to the questions mentioned above to interpret the relevance of the fifteen questionable items in the DHS and deleted the items when indicated, then divided the total score by number of relevant items. The TES contains one item which assumes that the respondent has a child. This item was deleted for respondents who answered that they do not have any children. The Perceived Stress Scale does not base its items on any assumptions that I could identify, so I did not modify the scores for this scale.

It is important to include these items from both scales when relevant, rather than delete them completely, because it is important to explore the possibility that the number and complexity of social roles does not necessarily translate into increased levels of stress. If my patients at Grady were any example, being unemployed, with its associated financial stressors and social isolation, can be equally if not more stressful than the added stressors associated with the workplace for a person who is employed.

In addition to modifying the scoring for the SRRS-R and the DHS and eliminating items based on irrelevant roles, I also eliminated 19 items from the DHS that do not capture exposure to environmental stressors. One goal of this study was to compare the effect of exposures to a variety of different types of stressors to the overall perception of stress in its impact on stress-related health outcomes. In a factor analysis of the DHS, Holm and Holroyd (Holm & Holroyd, 1992) found that one of the first-order factors of the scale was an “*inner concerns*” factor that included fifteen items such as “*feels conflicted over what to do*”, “*regrets over past decisions*”, and “*fear of rejection.*” Because these items reflect inner cognitive processes more than

exposures to environmental stressors, they were eliminated from the scale. Holm and Holroyd eliminated all items that did not load at or above .30 on at least one factor, resulting in the elimination of 54 of the 117 items. Five of these items, such as “*trouble relaxing*”, “*thoughts about death*”, and “*nightmares*” appear to be similar to the “inner concerns” items and were also eliminated. This reduced the total number of items for the DHS from 117 to 98. See Table 3.1 for an overall comparison of the topics, description and number of items, and scoring method for each section of the survey, in addition to the total number of items. See Appendix B for the complete survey instrument.

Table 3.1. *Data Collected*

Topic	Number and description of items	Scale and scoring
Demographics		
Age	1 item	Numerical value
Gender	1 item	Nominal scale
Education	1 item	Nominal scale
Demographic data	3 items	
related to	Relationship status	Nominal scale
survey items	Work status	
	Parenthood status	

Table 3.1. *Data Collected*

Topic	Number and description of items	Scale and scoring
Independent Variables		
Race	2 items	
	How do you describe yourself?	Nominal scale
	Where did you grow up?	Open-ended
SES	4 poverty threshold items	
	Number of people in home in 2004	Numerical value
	Adults	
	Children under the age of 18	
	Total combined income	Exact numerical value or specified range
	4 wealth items	
	Own or rent home / apartment	Nominal scale
	If owned, present value	Exact numerical value or specified range
	Mortgage on this property	Nominal scale
	If yes, how much is remaining principal	Exact numerical value or specified range

Table 3.1. *Data Collected*

Topic	Number and description of items	Scale and scoring
Dependent Variables		
SRRS-R ^a	51 items	Composite score of frequency
	Life events	within past 12 months
DHS ^b	98 items	Composite score of frequency
	Daily hassles	within past month
TES ^c	20 items	Composite score of frequency
	Traumatic events	
PSS ^d	10 items	Composite score of frequency
	Perceptions of stress	within past month
Stress-related	18 items	
illness burden	Has a doctor or other health professional ever told you that you have . . .	Nominal scale
	If yes, do you still have . . .	

Note. Total number of items = 212.

^aSRRS-R = Social Readjustment Rating Scale Revised (Hobson et al., 1998). ^bDHS = Daily Hassles Scale (Kanner et al., 1981). ^cTES = Traumatic Events Scale (Turner & Lloyd, 1995). ^dPSS = Perceived Stress Scale (Cohen et al., 1983).

Administration of Data Collection Instruments for Quantitative Phase

Potential study participants were approached after checking in for their health care provider visit. The study was explained to them and they were asked if they were willing to participate by completing the forms while waiting for their appointment. If they indicated they were interested, a consent form and the survey were administered at that time. Upon completion of the survey, compensation was distributed.

The location and timing for the participant to complete the surveys was negotiated with the clinic manager to allow for the least disruption in services within the context of the healthcare provider visit. For example, at Grady Hospital, where I worked, the waiting time was often extensive, and completing a survey after the patient checked in but before the patient was seen by the healthcare provider was easily accomplished. In clinics with a shorter wait time, patients either completed the survey before being seen, or completed the consent form before their healthcare provider visit, then returned to complete their survey after the visit.

Sample Size and Power for Quantitative Phase

Maxwell (2000), remarking on the appropriate sample sizes for multiple regression analyses, suggested that when all zero-order correlations are medium and two predictors are used, the necessary sample size for power to equal .80 would be 141. Wampold and Freund (1987) report that when small R^2 s (say, 0.10) are expected, 83 participants would be necessary to achieve a power level of .70 with three independent variables. However, if the R^2 s are expected to be large (say, .50), only 13 participants would be needed for three independent variables at the same level of power. Keppel (1991) reports that with a significance level of .05, the sample size needed for a power of .80 for a moderate effect size (ω^2) of .06 is 44 participants per group.

Based on these guidelines, I set a sample size of 200 as my goal for this study, with a minimum of 50 participants from each racial/SES group.

Data Management, Entry and Storage for Quantitative Phase

As soon as I received each completed survey from a participant, I screened it to identify any unanswered questions or illegible responses. Special attention was given to the completion of demographic and independent variables. This screening took place in the presence of the participant, and any missing or illegible data was identified for the participant to complete or clarify at that time. Once the data were collected, they were entered manually into SPSS 14.0, a statistical software program.

Data Analysis for Quantitative Phase

Missing Data

Once the data were entered, a visual check of the entered data was conducted to confirm that the data for each item fell within acceptable limits and the database was inspected for any missing data (Trochim, 2001). Cases that still had missing data for any of the demographic or independent variables were eliminated from analysis. Additionally, any cases that were missing 10% or more of the data from any of the other data categories were also eliminated from analysis. Hot deck imputation methods were employed for cases with limited missing data for dependent variables. This method involves replacing missing data with a reasonable estimate from a similar individual, as identified by similar responses on other related items (Roth, 1994).

Reliability of Measures and Violations of Assumptions

The data were then examined for indications of collinearity, outliers, or influential units using VIF, SDRESID, Cook's *D*, and DFBETA diagnostic techniques (Pedhazur, 1997). Independence of score vectors was assured by the fact that each participant received and completed the survey on her/his own, rather than in a group with other participants. A residual probability plot was used to identify any violations of the assumptions of linearity, normality, or homoscedasticity of the data (Pedhazur, 1997).

Correlations and Means

In an effort to clarify relationships between variables before engaging in regression analyses, a correlation matrix was constructed to examine correlations between all variables in the study. This provided information about the ability of each of the different stress scores to measure different constructs (if any scales had been highly correlated, it would have indicated that they were measuring the same or similar constructs), as well as information about the correlations between demographic characteristics and correlations between independent variables (e.g., race and SES were expected to be correlated).

A second table was constructed using *t*-tests and one-way ANOVAs to compare the means and standard deviations for each of the independent variables (SRRS-R, DHS, TES, PSS, and total stress score) and stress-related illness to each of the different control or dependent variable options (male/female, age group comparisons, African American/European American, and low-SES/middle-SES). This provided information that confirmed and/or disconfirmed the expected population variances in dependent variables before engaging in explanatory regression analyses. In addition to these two tables, an effort was made to assure that the low-SES African-

American and European-American groups and the middle-SES African-American and European-American groups did not have statistically different means in income or wealth using one-way ANOVAs (Huck, 2000).

Multiple Regression Analyses

Once reviews were completed for missing data, reliability of measures, violations of assumptions, correlations, and differences in means, multiple regression analyses were performed. For each analysis a p value of $< .05$ was considered significant. Five different regression analyses were performed for research question one. In each analysis, age, gender, and education were entered as control variables and race and SES were simultaneously entered as independent variables. One regression analysis was performed for each stress scale (SRRS-R, DHS, TES, and PSS) as the dependent variable, and one analysis used a total stress score as the dependent variable (a combined score from the three stress exposures scales – SRRS-R, DHS, and TES). These regression analyses were conducted to test the following two hypotheses:

Hypothesis 1a.

Race will account for a statistically significant portion of the variance in total stress scores on the SRRS-R, the DHS, the TES, and the PSS.

Hypothesis 1b.

SES will account for a statistically significant portion of the variance in total stress scores on the SRRS-R, the DHS, the TES, and the PSS.

In each regression analysis the two composite independent variables of race and socioeconomic status were entered into the equation simultaneously. Wampold and Freund (1987) state, “When there is no basis for entering any particular independent variable prior to any other independent variable, simultaneous regression would be appropriate” (p. 377). Pedhazur (1997) reports that variables used in nonexperimental research are often proxies for causal variables not included in the regression equation. The theoretical basis for this study is not to infer that race and SES cause stress, but that these variables serve as proxies for the experience of discrimination based on each of these factors. Further, it was expected that these two variables would be correlated, given the fact that racial discrimination often results in socioeconomic inequalities. Pedhazur (1997) confirms this assumption by explaining that in nonexperimental research, “the independent variables tend to be correlated, sometimes substantially, making it difficult, if not impossible, to untangle the effects of each” (p. 241). Therefore, it was not planned to assess which variable explained more variance in the total test scores, but to test them both together.

For research question two, two different regression analyses were performed. In each analysis, age, gender, education, race, and SES were entered as control variables and stress-related illness was the dependent variable. One regression analysis was performed with total stress score (a combined score from the three stress exposures scales – SRRS-R, DHS, and TES) as the only independent variable, and one analysis was performed with both total stress score and perceived stress score as the independent variables. These regression analyses were conducted to test the following two hypotheses:

Hypothesis 2a.

Stress exposures will account for a statistically significant portion of the variance in stress-related illness.

Hypothesis 2b.

When entered with stress exposures, perceived stress will account for a statistically significant and additional portion of the variance in stress-related illness.

Qualitative Phase

The qualitative phase of this study used photovoice and focus group techniques to explore the social context of the psychological stress process for different racial and socioeconomic groups. This qualitative exploration was based on the a priori theory that disadvantaged racial and SES groups experience more mechanisms of institutionalized discrimination in the context of their psychological stress process than the more racially and economically privileged groups of our society.

Recruitment for Qualitative Phase

Participants were asked to document their willingness to participate in the qualitative portion of the study by signing the qualitative portion of the consent form and providing contact information. Eligible candidates were contacted to confirm interest and scheduled for an orientation meeting after the quantitative phase for their population group was completed.

Inclusion/Exclusion Criteria for Qualitative Phase

The same inclusion criteria for the quantitative portion of the study were in effect for the qualitative study: age, race, SES, mental capability to participate, and English-speaking. In addition, participants for the qualitative portion of the study also had to be willing and available to attend an initial orientation meeting, take pictures according to study guidelines, and attend a subsequent focus group to discuss their photos and experiences with stress. Qualitative participants also had to meet or exceed perceived stress cut-off levels in order to ensure salience for the discussion topic.

The inclusion criteria for stress levels was determined by obtaining the total score on the PSS because this scale consists of only ten items and was easily computed by hand after the surveys were completed, thus allowing for immediate identification of potential qualitative study participants. The response options for the PSS are 0 = never, 1 = almost never, 2 = sometimes, 3 = fairly often, and 4 = very often. Thus the average score for the ten items could range from 0 to 4.00. Only those participants whose scores were a 2.00 or greater (later modified to 1.50 or greater) were considered eligible for the qualitative portion of the study, to ensure that stress was a salient topic for him or her.

Data Collection Methods for Qualitative Phase

Photovoice Method

Photovoice, utilizing the acronym “VOICE – Voicing Our Individual and Collective Experience”, represents a qualitative research technique that encourages study participants to document in a visual medium their experiences, perceptions, and ideas as they relate to the study

topic (Wang & Burris, 1997). It is a technique that is particularly suited to underrepresented groups that are often denied a voice in determining how a problem is defined or developing policy to address the problem(s). It is also a powerful tool for action or participatory action research. Wang, Yi, Tao, and Carovano (1998) state, “By furnishing persuasive evidence, people may have a say in what policy-makers do. Photovoice is a participatory strategy that can increase people’s access to power” (p. 83).

Focus Group Method

Most stress research to date has focused on the experiences and perceptions of individuals. But investigating an a priori theory about the relationship between institutionalized discrimination, chronic stress, and health disparities that occur between population groups requires a group perspective. Focus groups were an appropriate technique for this goal because they offered a chance to “observe how people engage in the process of collective sense-making: how views are constructed, expressed, defended and (sometimes) modified within the context of discussion and debate with others” (S. Wilkinson, 1998, p. 186). In contrast to individual interviews, which assume that the participants have pre-existing ideas and opinions, focus groups assume that people make sense of things through their interactions with others (S. Wilkinson, 1998).

There were two other advantages to utilizing the focus group technique. One is that focus groups, like the photovoice technique, are useful for accessing the perspectives and opinions of those who have been overlooked by traditional research (S. Wilkinson, 1998). This is consistent with my own experience in teaching group classes to low-SES African-American participants. I found that these participants often had difficulty navigating and interpreting the standardized test

instruments I administered to them, and many times their experiences did not fit neatly into the proscribed categories of the surveys. Open-ended questions did not usually render extensive and useful data for this group, simply because many were not accustomed to nor comfortable with expressing themselves in written form. But when I asked them to verbally describe their experiences, they were often quite eloquent and moving in their responses. This is one of the reasons why I felt it was so important to balance the quantitative study with more in-depth discussions among the different groups.

A second advantage to focus groups was that they were more likely to elicit intimate or sensitive information than individual interviews (S. Wilkinson, 1998). In my work at Grady Hospital I conducted an individual interview with each patient referred to the stress management program before the patient was enrolled in the group classes. I found that individual interviews often allowed participants to feel comfortable enough to share personal experiences, but the one-sided approach of me asking and them answering the questions did not often encourage them to share more than a direct answer to my question. However, when participants interacted with one another in a group format, they often responded to each other's answers, offering experiences that confirmed or contradicted one another's views, thereby soliciting more personal information than what might have been offered in a one-on-one format. Kitzinger (1994) confirms my anecdotal experiences by stating,

Co-participants . . . provide mutual support in expressing feelings which are common to their group but which they might consider deviant from mainstream culture (or the assumed culture of the researcher). This may be particularly important when working with those who are oppressed or marginalised (p. 111).

Administration of Data Collection Methods for Qualitative Phase

Once participants agreed to participate in the qualitative portion of the study they first attended a thirty-minute orientation meeting facilitated by myself and a co-researcher. Before initiating conversation, I reviewed the consent form and answered any questions. I then asked each participant to make their own nametag with a pseudonym or “code name” of their choosing. Each participant received a disposable camera. They were asked to take six pictures of the things, people, or events that cause them stress. The remaining pictures were for their own personal use. Participants were instructed on basic photo-taking techniques, such as placing the sun at their back when they take a picture outside, using a flash when they take a picture inside, and how to use pictures to tell a story (Wang & Burris, 1997).

Participants were given one week to take their pictures. At the end of that week, one of my co-researchers traveled to their homes to pick up the cameras. Killion and Wang (2000) report that traveling to the participants’ homes to retrieve the cameras enhances rapport between researchers and participants and assures a timely return of the cameras.

I then had each camera’s film developed onto a CD-ROM and printed into pictures. My co-researchers then returned to the participants’ homes to review these pictures with them and asked them to choose two of the pictures that they wanted to discuss in the group. All of the pictures (study and non-study related pictures, those chosen for discussion and those discarded) were left with the participants as gifts for agreeing to participate in the study. The selected pictures were marked on an index sheet with thumbnail versions of all of the pictures from that participant. I then downloaded each of the selected pictures from the participants into my computer.

A focus group was convened after the participants turned in their cameras. The goal was to have two focus groups of five to eight participants each for each racial/socioeconomic population group, however high attrition rates resulted in only one focus group per racial/SES population group. The focus groups lasted for 3 to 4 hours each, with a free meal offered at the end. Because some of the participants were African American and I am European American, the focus groups were co-facilitated by an African-American co-researcher, who specifically asked the race-related questions for the African-American groups to enhance the participants' comfort regarding this topic.

During the focus groups the participants were asked to discuss their pictures and the sources of stress their pictures represented, and then to expand on that discussion by identifying any other forms of stress not already mentioned. I wrote the answers on a white-board or poster-paper taped to the wall while my co-researcher wrote each answer from the board or paper onto 4x4 post-it notes. The discussion was also tape-recorded. Two audio tape recorders were placed at opposite ends of the room during the focus group interviews, to better ensure the capture of soft-spoken comments and guard against recording failure.

Once the discussion was exhausted, participants were asked to engage in a pile-sorting exercise. The post-it notes were placed on a table and the participants were asked to work as a group and sort the post-it notes into their own categories (or "piles") to represent different kinds of stress (e.g., medical, relationship, financial, etc.) (Trotter & Potter, 1993). They were asked to speak aloud with their thoughts during the sorting process, and to discuss any disagreements they had regarding placement. Once the categories were determined, a blank sheet of poster-paper was taped to the wall with the category name written as a title at the top. All post-it notes belonging to that category were taped underneath the title, so the answers and categories were

visible for all participants for the remainder of the discussion. For example, a poster-paper with the category “Medical” written as a title at the top may have had post-it notes such as “lack of control”, “services at Grady”, or “pharmacy” taped underneath. Following this exercise, the traditional focus group format resumed, with the co-facilitators alternating in asking questions (see Table 3.2).

Table 3.2. *Focus Group Questions*

Question	Probes and additional details
1. Tell us about this picture. How does this picture represent one of the things that causes you stress?	This question is repeated for up to two pictures for each participant.
2. Are there any other things that cause you stress that we haven't discussed yet?	Answers to #1 and #2 will be written on a white-board and post-it notes.
3. Now we'd like you to work together to organize these post-it notes into groups to represent different kinds of stress.	Participants will be asked to provide a title or label for each group of post-it notes.
4. If you had to pick three of these types of stress that you feel most often, what would they be?	Participants will review each category to choose three.
5. If you think about how much <u>control</u> you have over all of the different things that you do in your life, how much control do you feel like you have over [type of stress identified by group]?	Probe: "Tell me more about what makes you feel like you don't have any control in this situation." Repeat this question for each type of stress identified in #4.
6. If you think about everything that is <u>important</u> to you in your life, how important would you say [type of stress identified by group] is to you?	Repeat this question for each type of stress identified in #4.

Table 3.2. *Focus Group Questions*

Question	Probes and additional details
7. If you think about all of the different <u>resources</u> that you have to deal with the problems in your life, what resources do you have to deal with [type of stress identified by group]?	Repeat this question for each type of stress identified in #4.
8. Now let's think about people in our society who have [more/less] income than you do . . .	Phrase the question to ask about the opposite population group as the one in attendance (i.e., ask low-SES group, about people with more income and vice versa).
a. Do you think they have the same kinds of stress?	
b. How much control do you think they have over these kinds of stress?	
c. How important do you think these sources of stress are for them?	Probe: Would they have taken the same kinds of pictures?
d. What kinds of resources do you think they have to deal with these types of stress?	
9. Now let's think about people who are [alternate racial category], compared to people who are [current racial category]. Do you think [alternate racial category] people . . .	Ask Blacks about Whites and vice versa.
a. Repeat same sub-categories as #8.	

After the focus group interview was completed, all participants received monetary compensation and public transit tokens or parking validation was provided when relevant. A celebratory dinner and drinks was also provided for all participants.

Sample Size for Qualitative Phase

Two focus groups were planned to be convened for each racial/SES population group. The size of the focus groups was expected to be between five and eight participants each. Over-recruitment of a minimum of ten participants for each focus group was used to compensate for expected attrition between those who agreed to participate and those who actually attended the orientation and focus group meetings and participated fully with the protocol.

Data Entry and Storage for Qualitative Phase

I used a transcription service to transcribe the audio tapes as soon as possible after each focus group was completed. The sheets of poster paper with post-it notes, the audio tapes, the CD-ROMs and electronic files of digital pictures, the consent forms, the transcripts, the surveys, and all other raw data from the study are stored in a locked filing cabinet in my home. I used Microsoft Word word processing software to manage the different data transcripts and resulting codes.

Data Analysis for Qualitative Phase

Reliability and Validity

Several methods were used to enhance the reliability and validity of the qualitative data. First, I provided information about my perspective and its possible impact on me as an observer before engaging in the research. The research philosophy statement provided at the beginning of this chapter allows the reader to critically review my findings in relation to my perspective to judge if any bias may be present (Shank, 2002).

Second, I triangulated the data by collecting it from different sources. Shank (2002) describes triangulation as,

the process of converging on a particular finding by using different sorts of data and data-gathering strategies. Each set of data or strategy, on its own, might not be strong enough to support the finding. When these different ‘strands’ are taken together, though, there is stronger evidence for the finding (pp. 134-5).

I had the opportunity to compare multiple elements of the qualitative data: the photos, the pile sorts, and the transcripts. I also compared the qualitative data to the quantitative data to see if the different phases of the study revealed consistent findings. In addition, I engaged in critical reflections to assess if any negative evidence or rival explanations existed that contradicted my initial conclusions (Shank, 2002).

Finally, member checks were planned to get feedback from participants by having them review report summaries or transcripts to assess their accuracy (Shank, 2002). However, this particular form of data verification depended on the interest and level of involvement of the

participants themselves, and the extended time frame between survey collection and report generation negated the use of this technique.

Although qualitative data are not typically considered generalizable, there are at least three steps that were taken to increase this possibility. First, making sure the sample is representative. Second, thoroughly describing the sample so that readers can make their own inferences regarding applicability to similar population groups. Third, correlating the results of the qualitative data to quantitative data. I collected demographic data from all participants in order to assess the representativeness of the qualitative data sample. I also took steps when reporting and analyzing the data to describe the sample population and triangulate findings with the quantitative data whenever possible.

Data Coding and Analysis

Wang and Burris (1997) describe the analysis of photovoice as a three-stage process that involves the participants in selecting, contextualizing, and codifying their pictures. This study followed those guidelines by allowing participants to: 1) select two pictures to discuss with the group, 2) contextualize their pictures by describing them to the facilitators and the rest of the focus group participants, and 3) codify their pictures by identifying names or themes for common sources of stress through the pile-sorting exercise.

For the focus group transcript data, I engaged in a combination of data coding and analysis methods. I used inductive analysis to explore the text as a representation of experiences (Ryan & Bernard, 2000) and narrative analysis to explore the data through the narrative structure some of the participants used in describing their stress experiences (Cortazzi, 2001).

For the inductive analysis, I read through each line carefully and underlined each phrase or word which represented a distinct thought, experience, or concept. I then repeated this phrase or word in the margin as an “in vivo” code (Coffey & Atkinson, 1996). An in vivo code honors the exact wording of the participants. Using this coding technique is consistent with critical theory because, on some level, it allows the participants to be more directly involved in the representation of their data.

After identifying the codes, I grouped related phrases together on the page to create categories. Then I grouped related categories together to create themes. This allowed me to translate the depth and complexity of the data into a format that could identify commonalities and differences between transcripts, and could also be more easily consumed by the reader. For an example of this process, see Appendix D.

I began with the in vivo category or theme titles identified during the pile sorting exercise. LeCompte (2000) reports, “Pile sorts permit researchers to determine how the people they are studying assemble items, rather than relying on researcher categories alone” (p. 150). She also states, “Researchers must continually ask the question: Do I, the researcher, really understand and describe what I am studying in the same way that the people who live it do? Did I really ‘get it right’?” (p. 152). Honoring the words of the participants is one way to do that.

Ryan and Bernard (2000) state, “Literature reviews are rich sources for themes, as are investigators’ own experiences with subject matter” (p. 780). Thus I supplemented in vivo codes, categories, and themes with other category titles, informed mostly by my review of the literature and the key words from the questions I asked during the focus group. For example, I coded a participant’s discussion of their sources of stress based on terms identified from my literature review, such as relative deprivation, John Henryism, and social closure.

In addition, based on the cautions of Coffey and Atkinson (1996) that “the exceptions, misfits, and ‘negative’ findings should be seen as having as much importance to the process of coding as do the easily coded data” (p. 47), I re-examined the transcript to review the sections that I did not label with categories from the participants, my literature review, or the key words from my questions. This helped me to identify additional categories.

I began my narrative analysis by examining the data to look for any of Labov’s narrative structures (i.e., abstract, orientation, complication, evaluation, result, and coda) (Coffey & Atkinson, 1996). I identified these segments by asking the data to answer the questions related to these narrative structures (i.e., What was this about? Who? When? Where? etc.). When I found the first structures of a narrative in the transcript, I bracketed the sentences or segments and labeled them as their respective structures in the margin until I identified a complete narrative. For examples of complete narratives, please see Appendix E. For an example of how this form of data analysis allows for a deeper perspective on the context of the stress experience, see the figure summarizing these three narratives in Appendix F.

Finally, in addition to looking for inductive codes, categories, and themes to emerge from the data, and narratives to reflect the context and complexity of the data, I also looked for the ways in which the participants interacted during the focus group interview to create shared meanings or voice disagreements (Kitzinger, 1994).

Pilot Testing

Quantitative Phase

Before the study began, pilot testing of the survey instrument was conducted with a convenience sample from the Grady Hospital outpatient medical clinic population (see Appendix B for the survey instrument). This population had previously been tested to have an average of a 4th to 5th grade reading level. Six participants were recruited to pilot test the survey instrument. All were offered the same compensation as those participating in the quantitative phase of the study. Six participants were recruited – three women and three men, representing a variety of education levels and therefore a potential variety of reading levels. One participant who had requested assistance in completing paperwork for services at the hospital was specifically recruited to assess comprehension when the survey was orally administered.

Pilot testing was conducted to assess the amount of time required to complete all scales and any effects of respondent fatigue. In addition, participants were instructed to circle any items on the survey that they found confusing. After completing the forms, participants were told they could return to their marked items to provide further detail as to the source of their confusion. Finally, participants were asked their opinions about the time required to complete the forms and the compensation offered.

Results of the pilot test revealed there were no reported problems with readability for any of the scales, nor were there any problems with respondent fatigue. The average time to complete the survey was 25 minutes, with a range of 16 to 34 minutes. Participants reported that the compensation offered was reasonable for the time required.

A subsequent review of respondent answers revealed three potential problems with data collection. First, three of the six participants answered the annual family income question with data that would not have been easily usable, either answering “don’t know” or providing weekly or monthly income rather than annual income. Second, one-third of the participants provided alternate answer options to one or more of the scales, answering “yes” or “no” to questions that instead asked for a count of the number of times specific stressors occurred. Third, some participants returned surveys with missing data, either by skipping a page or by skipping specific items on some of the longer scales. All of these findings emphasized the importance of a thorough screening of respondent answers when collecting data in the field.

Qualitative Phase

Three pilot tests of the qualitative phase of the study were completed to fulfill requirements for my qualitative research courses. On March 28, 2003, I co-facilitated the first focus group. One of my co-workers at Grady, JoVonn Hughley, served as my co-researcher. She is a master’s-trained health educator with experience in facilitating focus groups. She is also African American, grew up in Georgia, and has experience working with the Grady outpatient population which provided the low-SES African-American portion of my study participants.

I transcribed the data from the first focus group by using a transcription machine and then used inductive analysis to analyze the data. I reported my findings in the final paper for my course in designing qualitative research in Spring semester 2003. I later analyzed the same data using narrative analysis, compared the two techniques, and explored the data for group interactions in my final paper for my course in qualitative data analysis in Fall 2003.

I co-facilitated a second focus group with Ms. Hughley on October 10, 2003. Based on the findings from the first focus group, the questions were revised to more specifically address the participants' views regarding their sense of control over stressors, importance of stressors, and resources to deal with stressors. The order of two questions was also changed so that the question regarding types of stressors experienced by people with different incomes was asked before, rather than after, the question regarding types of stressors for people of different races. The change in ordering of these questions and the additional detail in the other questions provided richer, more complete data that were still consistent with the themes identified in the previous focus group.

Finally, on November 7, 2003 I supervised a group of six graduate students from an Emory University School of Public Health course on community needs assessment as they conducted a pilot test of the photovoice technique. The graduate students followed the protocol delineated for the photovoice technique in this study, including visiting the participants' homes to pick up the cameras and returning to their homes to review their picture selections. This process was deemed successful in enhancing rapport between the researchers and participants and assuring a timely return of the cameras. The subsequent focus group with the photovoice participants was facilitated by the graduate students and used the same questions as the prior two focus groups. The findings revealed similar data when compared to the two prior focus groups, but the addition of the photovoice technique allowed the participants to document their stressors in a visual medium, provided a more thorough description of those stressors, and allowed for better verification of the similarities of stressors between participants. In addition, the photovoice participants reported that they enjoyed participating in the study. In fact, we had 100% retention between the orientation session and the focus group session for photovoice participants.

Pilot testing of the focus group questions and format revealed that 3 to 4 hours for discussion, although long, was still acceptable for participants, as long as brief breaks were provided and the promise of a free meal at the end was offered to keep them going. Two focus groups with the same racial/SES population revealed similar themes, and the third focus group with the photovoice technique confirmed this, suggesting that two focus groups for each racial/SES population group should be sufficient to explore the social context of the psychological stress process for these groups. The ideal size for the focus groups was five to eight participants each. This size allowed for variations of opinion while still allowing time for each participant to talk. Attrition rates of 40-73% between signing the consent form and participating in the focus groups suggested that over-recruitment would be a necessity.

Pilot testing of the analysis of the qualitative data revealed that inductive analysis did not adequately reflect the context of the experiences expressed by the participants, and narrative analysis did not allow for isolated thoughts or opinions to be included in the analysis, so I have decided that combining the two methods is the best way to reflect the depth and complexity of the data. Appendix D provides an example of categories and related themes identified through inductive analysis of the pilot data. Appendix E provides examples of complete narratives created from the pilot data. For an example of how this form of data analysis allows for a deeper perspective on the context of the stress experience, see the figure summarizing these three narratives in Appendix F. For examples of the photovoice data, see Appendix G.

Potential Difficulties and Limitations

The combination of demographic data, independent variables, and dependent variables for the quantitative phase of this study totaled 212 items. This could have been a significant

burden for some respondents. I took steps to reduce respondent burden as much as possible. First, I reviewed all items to ensure that they were appropriate for a 5th grade reading level, making them more accessible for low-literate participants (Homer, Surratt, & Juliusson, 2000). I also pilot tested the complete survey instrument to determine length of time and ease of use for the most vulnerable population groups – those with limited literacy skills. I also orally administered the survey to any study participants who had difficulty reading. Every attempt was made to make sure that the complete survey was accessible and did not present a burden to respondents.

I also counter-balanced the stress scales to protect the data from respondent fatigue bias. In other words, I administered the four stress scales – the SRRS-R, the DHS, the TES, and the PSS, in alternating order for each respondent. Thus the order was:

Respondent A:	Demographics	SRRS-R	DHS	TES	PSS
Respondent B:	Demographics	DHS	TES	PSS	SRRS-R
Respondent C:	Demographics	TES	PSS	SRRS-R	DHS
Respondent D:	Demographics	PSS	SRRS-R	DHS	TES

I also attempted to utilize a variety of incentives for participants. I applied for funding for my dissertation research from a variety of sources, including foundations, Grady Hospital vendors, and campus resources. I was successful in obtaining a small scholarship through UGA departmental funds and also in obtaining a few small private donations through the Grady Foundation. These funds were used to pay for the cost of the disposable cameras, film development, and meals for those who attended the focus groups. I also provided monetary incentives for survey completion and focus group participation through my own funds.

CHAPTER 4

RESULTS

Recruitment

A convenience sample of participants was recruited from four targeted counties within the metro Atlanta area. The U.S. Census Bureau (U.S. Census Bureau, 2006) defines the metropolitan statistical area of Atlanta as a region that contains part or all of 20 different Georgia counties. Population data from the year 2000 Census for each of these counties was examined to determine majority racial groups and median family incomes. Three of these counties – Fulton, Clayton, and DeKalb – had a majority of non-Hispanic Black residents. Fulton County was pre-selected as a study site because of the author's employment at Grady Hospital in Fulton County, where the patient population meets the criteria for a low-SES Black (LSB) population. The target county for the middle-SES Black (MSB) study population was then selected by comparing the median family income between Fulton County and Clayton and DeKalb Counties. Both Clayton and DeKalb counties had moderate median family incomes, but the median family income for DeKalb County was greater than Clayton County. In an attempt to maximize potential SES differences in study participants, DeKalb County was then selected for the target county for the MSB group. Once these two counties were selected, metro Atlanta counties with a majority of non-Hispanic White residents were reviewed, and those with median family incomes closest to Fulton and DeKalb Counties were selected. See Table 4.1.

Table 4.1. *Target Racial Groups and Median Family Incomes for Recruitment Counties*

	Low-SES	Middle-SES
Blacks	South & Central Fulton County	DeKalb County
	46% - 81% Blacks	54% Blacks
	\$37,403	\$49,117
Whites	Spalding County	Paulding County
	66% Whites	90% Whites
	\$36,221	\$52,161

Source: U.S. Census Bureau, 2006.

Once target recruitment counties were identified, hospitals were located in each county through online searches, and outpatient medical clinics that provide primary care services for these hospitals were subsequently identified through further online searches. Clinic administrators for the practices that had the largest number of providers – and therefore the largest potential patient population – were approached first, with subsequent approaches to somewhat smaller practices, until access was approved. Institutional review board approval was obtained for each clinic before recruitment began. In one case the target clinic had to be changed after two days of attempted data collection due to extremely low patient volume in the original clinic.

Surveys were administered during regular clinic business hours using the recruitment script approved by the University of Georgia Institutional Review Board (see Appendix H.). Recruitment was conducted simultaneously in all counties whenever possible, resulting in one-day visits to each county once every 2 weeks. Sustained recruitment was necessary in Spalding

county after recruitment in other counties had been completed, due to the lower-than-expected numbers of participants who qualified for low-SES (LS) and qualitative phase study criteria.

Data Cleaning

A total of 345 surveys were collected between May and August of 2006. Thirty-five of the surveys were excluded from analysis. Sixteen surveys were excluded because the respondents did not meet study selection criteria for race or age. An additional 16 were excluded because data were missing from crucial independent variables such as race or SES, or because more than 10% of the overall data were missing. Three were excluded due to falsified responses which were identified by respondents completing the surveys in significantly less time than normal, coupled with numerous illogical answers such as males reporting menstrual problems or sequential numbers entered for each answer.

Three hundred ten surveys were entered into the statistical software program SPSS 14 for Windows for analysis. A visual inspection of the full data set was conducted for missing data. Cases with missing data were reviewed for entry errors and corrected when applicable. Missing data were imputed using hot deck imputation for 13 cases that had less than 10% of the data missing from any one scale.

A second visual inspection of the data was conducted to identify any obvious outliers. Three outliers for the Daily Hassles Scale with extreme responses – at least 22% higher than 99% of all other responses – were eliminated from that scale. The data were then examined for indications of collinearity, outliers, or influential units using VIF, SDRESID, Cook's D, and DFBETA diagnostic techniques. Histograms and probability plots were used to further inspect

the data. Findings from these tests revealed no additional problems and did not lead to any further exclusions or modifications to the data set.

Description of Quantitative Study Participants

Fifty-nine percent of the overall study sample was female. Ages ranged from 18 to 83 and, excluding one outlier, annual family incomes ranged from \$0 to \$300,000. Twenty-five to twenty-nine percent of the LS groups completed at least some college, compared to 65-77% of the MS groups. (See Table 4.2.)

Table 4.2 *Demographic Characteristics of the Study Sample*

Demographics	SES-racial group			
	LSB ^a	LSW ^b	MSB ^c	MSW ^d
<i>n</i>	67	52	66	125
% female	57	71	49	62
Mean age in years	51	42	40	42
% HS education or more	65	73	94	92
Median family income	\$14,000	\$19,100	\$64,000	\$70,000

^aLSB = low-SES Black group, ^bLSW = low-SES White group, ^cMSB = middle-SES Black group, ^dMSW = middle-SES White group.

Socioeconomic status classification was determined using number of adult family members in a household, number of children under the age of 18 in the household, and total combined family income for the year, to calculate federal poverty status for each respondent. A

respondent was classified as low-SES (LS) if they qualified as 200% of the federal poverty threshold or below, and middle-SES (MS) if they qualified as greater than 200% of the federal poverty threshold. Additional questions about home ownership, amount owed on home, and current value of home were used to roughly quantify the wealth of each respondent, then the wealth variable was categorized into \$25,000 increments. Independent samples t-tests were conducted to test for differences in income and one-way analyses of variance were conducted to test for differences in categorized wealth means between population groups. Most of the findings supported the separate categorizations of these groups. LS and MS Blacks were found to have statistically significant differences in income means $t(1, 117) = -11.82, p = .00$ and wealth means $F(1, 131) = 26.60, p = .00$. LS and MS Whites were also found to have statistically significant differences in income means $t(1, 175) = -2.20, p = .03$ and wealth means $F(1, 173) = 18.34, p = .00$. MS Blacks and Whites were found to have no statistically significant differences in mean income or wealth. The one unexpected finding was the difference between income means for LS Blacks and Whites, which was found to be statistically significant $t(1, 117) = -3.31, p = .00$, while the difference between wealth means for these groups was not statistically significant $F(1, 117) = 2.33, p = .13$. This could perhaps be due to the fact that Whites had more people in the home than Blacks (a difference that approaches statistical significance) $F(1, 117) = -1.89, p = .06$, suggesting that the incomes in LS White households were spread over a larger number of people, while overall wealth was still comparable between the two LS racial groups.

Compared to the U.S. Census data for the target recruitment counties, the LS participants for the study had lower incomes than the median family incomes for the LS counties, and the MS participants had higher incomes than the median family incomes for the MS counties. This is a reasonable result, considering that the median family incomes for these counties included all

economic groups in each county, while the study participants were screened to only include those who met low- or middle-SES income criteria. A larger proportion of MS Whites were recruited than originally anticipated, due to the fact that many participants from Spalding County, where LS White populations were anticipated, qualified as MS rather than LS (a detail that was only determined after participants completed the survey and their answers were reviewed).

Analysis of Quantitative Data

Correlation Matrix

A correlation matrix composed of two-tailed bivariate Pearson's correlations was constructed to examine relationships between variables before engaging in regression analyses. (See Table 4.3). The variables featured in the matrix include age, gender, and education as demographic variables and race and SES as independent variables. Dependent variables in the matrix include the Social Readjustment Rating Scale-Revised (SRRS-R), the Daily Hassles Scale (DHS), the Traumatic Events Scale (TES), the Perceived Stress Scale (PSS), the Stress Total, which sums the z-score standardized totals for the SRRS-R, the DHS, and the TES for a combined stress exposure count, and the stress-related illness burden (SRIB), which represents the current number of stress-related illnesses each respondent reported they had.

Correlations revealed that older age was associated with female gender, lower-socioeconomic status, lower perceived stress, higher traumatic stress, and a greater burden of stress-related illnesses. Female gender was associated with White race, higher perceived stress, and a greater burden of stress-related illnesses. Lower educational status was associated with

Table 4.3. *Correlation Matrix*

	1	2	3	4	5	6	7	8	9	10	11
1. Age	--										
2. Gender ^a	-.14*	--									
3. Education	-.06	.08	--								
4. Race ^b	-.11	-.12*	.06	--							
5. SES ^c	-.19**	.06	.44**	.21**	--						
6. SRRS-R ^d	-.04	-.07	-.10	.04	-.11*	--					
7. DHS ^e	-.01	.02	-.13*	.02	-.13*	.30**	--				
8. TES ^f	.18**	-.01	-.21**	.02	-.25**	.18**	.35**	--			
9. PSS ^g	-.11*	-.12*	-.19**	.12*	-.17**	.26**	.40**	.34**	--		
10. Stress Total	.08	-.01	-.19**	.02	-.22**	.65**	.78**	.72**	.46**	--	
11. SRIB ^h	.39**	-.18**	-.16**	.04	-.21**	.07	.16**	.26**	.25**	.23**	--

^aMale is high score for gender, ^bWhite is high score for race, ^cmiddle-SES is high score for SES, ^dSRRS-R = Social Readjustment Rating Scale-Revised, ^eDHS = Daily Hassles Scale, ^fTES = Traumatic Events Scale, ^gPSS = Perceived Stress Scale, ^hSRIB = Stress-Related Illness Burden

* $p < .05$. ** $p < .01$.

lower socio-economic status, higher stress scores, and a higher burden of stress-related illness. White race was associated with higher socio-economic status and higher perceived stress. Lower-SES was associated with higher stress scores on all stress scales and a higher burden of stress-related illness. All stress scales were positively correlated with each other. High correlations between Stress Total and the SRRS-R, DHS, and TES, reflect the fact that the Stress Total variable is comprised of a total of these three variables. A higher burden of stress-related illness is associated with all stress scales except the SRRS-R.

The majority of correlations confirm the anticipated relationships between variables. However, the lack of association between perceived stress and race is contrary to previous norms testing of this scale, which found that scores for Blacks were significantly higher than scores for Whites (Cohen & Williamson, 1988). The lack of association between race and nearly all other variables, and the relatively weak association between race and SES, were also unexpected. These findings will be further explored in the regression analysis section of this chapter and the conclusion chapter.

Comparison of Means

In addition to correlations, further analyses were carried out to confirm or disconfirm expected study group variances in dependent variables before engaging in regression analyses. One-way analyses of variance were conducted to assess if means were equal between population groups for each of the dependent variables (SRRS-R, DHS, TES, PSS, stress total and stress-related illness). See Table 4.4. Independent samples *t*-tests were conducted to compare the means and standard deviations of each of the bivariate control and independent variable options (gender, race, SES) for each of the dependent variables. See Table 4.5. One-way analyses of

variance were also conducted to assess if means were equal between categorical control and independent variable options (age and education) for each of the dependent variables. See Tables 4.6 and 4.7.

Table 4.4. *Means and Standard Deviations for Dependent Variables*

	SES-racial group				<i>F</i>
	LSB	LSW	MSB	MSW	
Measure	<i>n</i> = 67	<i>n</i> = 50	<i>n</i> = 66	<i>n</i> = 125	
SRRS-R ^a	62.03 (174.82)	108.87 (286.42)	39.60 (93.51)	45.11 (131.55)	2.05
DHS ^b	327.46 (448.90)	353.67 (429.59)	215.76 (341.50)	256.50 (316.06)	1.84
TES ^c	7.13 ^{fg} (3.90)	7.15 ^{hi} (3.59)	4.84 ^{fh} (2.84)	5.69 ^{gi} (3.06)	7.74**
PSS ^d	2.00 ^j (.69)	2.16 ^k (.73)	1.65 ^{jk} (.60)	1.93 (.71)	5.83**
Stress	.46 ^l (2.47)	.66 ^m (2.28)	-.64 ^{lm} (1.55)	-.24 (1.87)	5.67**
Total					
SRIB ^e	2.39 ⁱ (1.71)	2.35 ^j (1.75)	1.33 ^{ij} (1.42)	1.86 (1.50)	6.32**

Note. Standard deviations in parentheses.

^aSRRS-R = Social Readjustment Rating Scale-Revised, ^bDHS = Daily Hassles Scale, ^cTES = Traumatic Events Scale, ^dPSS = Perceived Stress Scale, ^eSRIB = Stress-Related Illness Burden

Means in the same row that share the same superscript differ at $p < .05$ based on Bonferroni post hoc comparisons.

* $p < .05$. ** $p < .01$.

Table 4.5. Means and Standard Deviations for Gender, Race, and SES

	Gender			Race			SES		
	Female	Male	<i>t</i>	Black	White	<i>t</i>	Low	Middle	<i>t</i>
Measure	<i>n</i> = 184	<i>n</i> = 126		<i>n</i> = 133	<i>n</i> = 177		<i>n</i> = 119	<i>n</i> = 191	
SRRS-R ^a	67.45	44.92	1.14	50.90	63.84	-.66	82.50	43.21	1.97
	(188.47)	(142.98)		(140.41)	(191.87)		(230.44)	(119.55)	
DHS ^b	271.68	289.78	-.42	272.03	284.42	-.29	338.66	242.34	2.21*
	(327.49)	(432.18)		(401.65)	(350.81)		(435.38)	(324.80)	
TES ^c	6.10	6.02	.21	6.00	6.12	-.31	7.14	5.39	4.51**
	(3.45)	(3.37)		(3.59)	(3.28)		(3.75)	(3.01)	
PSS ^d	1.99	1.82	2.08*	1.83	2.00	-2.09*	2.07	1.38	2.97**
	(.70)	(.71)		(.67)	(.73)		(.71)	(.69)	
Stress	-.00	-.05	.20	-.08	.02	-.42	.55	-.38	3.88**
Total	(1.96)	(2.23)		(2.13)	(2.03)		(2.38)	(1.77)	
SRIB ^e	2.18	1.60	3.15**	1.86	2.01	-.76	2.37	1.68	3.74**
	(1.59)	(1.59)		(1.66)	(1.59)		(1.72)	(1.49)	

Note. Standard deviations in parentheses. ^aSRRS-R = Social Readjustment Rating Scale-Revised, ^bDHS = Daily Hassles Scale, ^cTES = Traumatic Events Scale,

^dPSS = Perceived Stress Scale, ^eSRIB = Stress-Related Illness Burden

* $p < .05$. ** $p < .01$.

Table 4.6. Means and Standard Deviations for Age Categories

	Age						<i>F</i>
	18-24 <i>n</i> = 30	25-34 <i>n</i> = 59	35-44 <i>n</i> = 78	45-54 <i>n</i> = 72	55-64 <i>n</i> = 48	≥ 65 <i>n</i> = 23	
SRRS-R ^a	97.43 (273.86)	41.90 (117.35)	56.46 (162.87)	61.38 (149.99)	72.47 (223.95)	16.23 (21.50)	.77
DHS ^b	226.29 (346.40)	311.07 (385.27)	279.69 (359.11)	289.20 (378.53)	264.53 (347.34)	260.24 (474.84)	.24
TES ^c	5.14 (3.39)	5.23 ^f (3.39)	5.78 (3.41)	6.76 (3.54)	7.20 ^f (3.37)	5.82 (2.23)	3.04*
PSS ^d	1.92 (.59)	1.94 (.69)	1.96 (.74)	2.00 (.66)	1.94 (.74)	1.47 (.73)	2.14
Stress	-.53 (1.75)	-.25 (2.23)	-.07 (1.92)	.27 (2.04)	.38 (2.47)	-.37 (1.52)	1.28
SRIB ^e	.69 ^{ghij} (.89)	1.42 ^{klm} (1.30)	1.79 ^{gn} (1.55)	2.25 ^{hk} (1.63)	2.50 ^{il} (1.68)	3.32 ^{imn} (1.52)	11.31**

Note. Standard deviations in parentheses.

^aSRRS-R = Social Readjustment Rating Scale-Revised, ^bDHS = Daily Hassles Scale, ^cTES = Traumatic Events Scale, ^dPSS = Perceived Stress Scale, ^eSRIB = Stress-Related Illness Burden

^f, ^g, and ^k = Means differ at $p < .05$ based on Bonferroni post hoc comparisons.

^h, ⁱ, ^j, ^l, ^m, and ⁿ = Means differ at $p < .01$ based on Bonferroni post hoc comparisons.

* $p < .05$. ** $p < .01$.

Table 4.7. Means and Standard Deviations for Education Categories

Measure	Education				<i>F</i>
	Grade 1-11 <i>n</i> = 52	HS grad /GED <i>n</i> = 101	1-3 yrs college <i>n</i> = 94	≥ 4 yrs college <i>n</i> = 63	
SRRS-R ^a	86.01 (243.66)	62.58 (172.99)	58.09 (165.42)	28.82 (83.49)	1.10
DHS ^b	353.57 ^f (439.07)	277.92 (343.73)	316.27 (439.43)	164.37 ^f (187.94)	2.99*
TES ^c	7.81 ^{ghi} (3.38)	5.83 ^g (3.59)	6.02 ^h (3.42)	5.07 ⁱ (2.59)	6.98**
PSS ^d	2.02 (.75)	2.08 ^j (.65)	1.85 (.70)	1.69 ^j (.70)	4.70**
Stress	.72 ^k (2.06)	-.05 (2.18)	.09 (2.27)	-.75 ^k (1.19)	5.02**
SRIB ^e	2.48 ^l (1.62)	1.97 (1.72)	1.86 (1.58)	1.58 ^l (1.40)	3.11*

Note. Standard deviations in parentheses.

^aSRRS-R = Social Readjustment Rating Scale-Revised, ^bDHS = Daily Hassles Scale, ^cTES = Traumatic Events Scale, ^dPSS = Perceived Stress Scale, ^eSRIB = Stress-Related Illness Burden

^{f, h, and l} = Means differ at $p < .05$ based on Bonferroni post hoc comparisons.

^{g, i, j, and k} = Means differ at $p < .01$ based on Bonferroni post hoc comparisons.

* $p < .05$. ** $p < .01$.

Results of independent samples *t*-tests and one-way ANOVAs were consistent with correlational findings, including the lack of expected variance in racial means for nearly all dependent variables, which is consistent with a lack of correlation between race and all dependent variables. All other findings confirmed expected variances between study groups.

Regression Analyses

The foundation of the quantitative phase of this study was to test the a priori theory that institutionalized race and class discrimination contribute to more chronic stress and therefore to more stress-related illness for disadvantaged racial and SES groups in our society. Explanatory multiple regression analysis was used to test two research questions: 1) what percentage of the total variance in stress scores for the Social Readjustment Rating Scale Revised (SRRS-R), the Daily Hassles Scale (DHS), the traumatic events scale (TES), and the Perceived Stress Scale (PSS) is accounted for by race and SES, and 2) what percentage of the total variance in stress-related illness is accounted for by exposure to stressors and perceived stress?

All multiple linear regression tests were conducted using SPSS 14 for Windows. For research question one, the variables of age, gender, and education were controlled by entering them as independent variables in the first model for each analysis. Based on literature reviews and methodological guidelines consulted before the data were collected, an assumption was made that race and SES would be substantially correlated, making it difficult to untangle the separate effects of each, so race and SES were to be entered simultaneously as independent variables in the second model of the regression analysis equations. Although the correlation data did not completely support this assumption, the analyses were first conducted in this manner to be consistent with planned study guidelines.

Five different stress measures were used as dependent variables in the five separate regression analyses. The SRRS-R was used to measure life events stress, the DHS was used to measure persistent daily hassles stress, the TES was used to measure stress from traumatic events, and the PSS was used to measure perceived stress. A stress total index was used to measure total stress exposures by combining the standardized scores from the SRRS-R, the DHS, and the TES. For each analysis a p value of $< .05$ was considered significant.

After controlling for age, gender, and education, and then entering race and SES simultaneously, five separate explanatory multiple linear regression analyses were performed – one with each stress measure as the dependent variable. (See Tables 4.8 – 4.12.) These analyses revealed that together race and SES did not explain a statistically significant additional portion of the variance in life events stress or daily hassles stress. Race and SES did explain a small but statistically significant additional portion of the variance in traumatic event stress $\Delta R^2 = .03$, $F(2, 304) = 4.80$, $p = .01$, perceived stress $\Delta R^2 = .03$, $F(2, 304) = 5.10$, $p = .01$, and total stress exposures $\Delta R^2 = .03$, $F(2, 301) = 4.11$, $p = .02$.

Contrary to prior assumptions, preliminary correlations and means testing revealed a lack of significant correlations and statistically different means for the race variable. Therefore, it was decided to repeat all regression analyses described above, once with race entered by itself in the second model as an independent variable, and once with SES entered by itself in the second model as an independent variable. In both cases, age, gender, and education were still entered in the first model of independent variables as controls.

By itself, race did not explain a significant portion of the additional variance in life events stress, daily hassles stress, traumatic events stress, perceived stress, or in total stress exposures. By contrast, when SES was entered by itself, it mirrored the findings of the two variables

Table 4.8. *Summary of Explanatory Regression Analysis for Variables Predicting Life Events Stress*

Variable	<i>B</i>	SE <i>B</i>	β
Step 1			
Age	-.69	.70	-.06
Gender	-22.8	20.02	-.07
Education	-16.51	9.80	-.10
Step 2			
Race	5.74	6.78	.05
SES	-38.28	23.00	-.11

Note. $R^2 = .02$ for Step 1; $\Delta R^2 = .01$ for Step 2.

combined. Thus SES did not explain a statistically significant additional portion of the variance in life events stress or daily hassles stress, but it did explain a statistically significant additional portion of the variance in traumatic event stress $\Delta R^2 = .02$, $F(1, 305) = 7.29$, $p = .01$, perceived stress $\Delta R^2 = .01$, $F(1, 305) = 4.68$, $p = .03$, and total stress exposures $\Delta R^2 = .02$, $F(1, 302) = 6.36$, $p = .01$. These findings also mirrored the differences in means for educational status, reflecting the influence of education on socioeconomic status.

Additional explanatory multiple regression analyses were then performed to test research question two. In each analysis, the variables of age, gender, education, race, and SES were controlled by entering them as independent variables in the first model of analysis. The index for total stress exposures was then entered in a second model as an independent variable, and perceived stress was entered in a third model as an independent variable. Stress-related illness

Table 4.9. *Summary of Explanatory Regression Analysis for Variables Predicting Daily Hassles Stress*

Variable	<i>B</i>	SE <i>B</i>	β
Step 1			
Age	-.46	1.54	-.02
Gender	22.60	43.69	.03
Education	-49.26	21.53	-.13*
Step 2			
Race	11.72	14.79	.05
SES	-80.56	50.16	-.11

Note. $R^2 = .02$ for Step 1; $\Delta R^2 = .01$ for Step 2.

* $p < .05$.

burden was entered as a dependent variable. (See Tables 4.13a and b.) The second model revealed that total stress exposures explained a small but statistically significant portion of the variance in stress-related illness burden $\Delta R^2 = .03$, $F(1, 298) = 10.07$, $p = .00$. The third model demonstrated that perceived stress explained a statistically significant portion of the variance in stress-related illness burden that was not explained by total stress exposures or the control variables $\Delta R^2 = .04$, $F(1, 297) = 15.44$, $p = .00$. In fact, when the second and third models were reversed, with perceived stress entered in the second model and total stress exposures in the third model, perceived stress accounted for a significant portion of the variance in stress-related illness burden that was not explained by the control variables $\Delta R^2 = .06$, $F(1, 298) = 24.54$, $p = .00$, but

Table 4.10. *Summary of Explanatory Regression Analysis for Variables Predicting Traumatic Events Stress*

Variable	<i>B</i>	SE <i>B</i>	β
Step 1			
Age	.04	.01	.17**
Gender	.19	.39	.03
Education	-.69	.19	-.20**
Step 2			
Race	.20	.13	.09
SES	-1.30	.44	-.19**

Note. $R^2 = .07^{**}$ for Step 1; $\Delta R^2 = .03^{**}$ for Step 2.

** $p < .01$.

total stress exposures did not account for a significant portion of the variance in stress-related illness burden beyond what was already accounted for by the control variables and perceived stress.

Additional Analyses

Additional analyses were conducted to explore two topics: Black Belt racial differences and disparities of individual stress-related illnesses. Research question one explored, in part, the relationship between variance in stress scores and race. Given that previous research had documented higher levels of psychological distress among Blacks living in the “Black Belt” of the U.S., where slave plantations were dominant in the past, responses to the question “Where did you grow up?” were sorted for Black participants, to compare those who grew up in Black

Table 4.11. *Summary of Explanatory Regression Analysis for Variables Predicting Perceived Stress*

Variable	<i>B</i>	SE <i>B</i>	β
Step 1			
Age	-.01	.00	-.14*
Gender	-.18	.08	-.12*
Education	-.13	.04	-.19**
Step 2			
Race	.06	.03	.13*
SES	-.24	.09	-.16**

Note. $R^2 = .07^{**}$ for Step 1; $\Delta R^2 = .03^{**}$ for Step 2.

* $p < .05$. ** $p < .01$.

Belt counties with those who did not. Eighty-five percent of all Black respondents grew up in a Black Belt county (90% of LS Blacks and 80% of MS Blacks). Independent samples t-tests revealed no statistically significant differences between Black Belt and non-Black Belt participants for means on each of the stress scales. There were also no significant differences in means for depression or anxiety.

Research question two was devised to assess the degree to which total stress exposures and perceived stress account for variance in stress-related illness burden (SRIB). The SRIB variable was composed of eleven individual stress-related illnesses which have been documented in the research literature to have disparate outcomes based on race or SES. The data were thus examined to assess the degree to which disparities did in fact exist for each of these individual

Table 4.12. *Summary of Explanatory Regression Analysis for Variables Predicting Total Stress*

Variable	<i>B</i>	SE <i>B</i>	β
Step 1			
Age	.01	.01	.07
Gender	.05	.24	.01
Education	-.38	.12	-.18**
Step 2			
Race	.11	.08	.08
SES	-.75	.27	-.18**

Note. $R^2 = .04^{**}$ for Step 1; $\Delta R^2 = .03^*$ for Step 2.

** $p < .01$.

illnesses and to assess if the differences were in the expected direction. Analyses revealed insufficient numbers for several of the illnesses. There were no respondents who reported having HIV/AIDS, less than 1% had cancer, and less than 10% had stroke or heart disease. Of the remaining illnesses, statistically significant differences in means were found for blood pressure, depression, and anxiety. In chapter two, each of these illnesses was associated with a higher morbidity rate for Blacks than Whites, but no differences were reported based on SES. Post-hoc Bonferroni group comparisons revealed that the LSB group had a higher mean for blood pressure than both of the MS groups. Differences in depression revealed that both LS groups and the MS Whites had higher means for depression than the MS Blacks. Differences in anxiety revealed that the LS groups and Whites had higher anxiety than the MS groups and Blacks. Thus, health

Table 4.13a. *Summary of Explanatory Regression Analysis for Variables Predicting Stress-Related Illness Burden*

Variable	<i>B</i>	SE <i>B</i>	β
Step 1			
Age	.04	.01	.36**
Gender	-.36	.17	-.11*
Education	-.16	.09	-.10
Race	.09	.06	.09
SES	-.38	.17	-.11*
Step 2			
Stress Total	.13	.04	.17**

Note. $R^2 = .21^{**}$ for Step 1; $\Delta R^2 = .03^{**}$ for Step 2.

* $p < .05$. ** $p < .01$.

disparities were found for three of the eleven stress-related illnesses, perhaps due to insufficient numbers to detect differences for many of the remaining illnesses. Most differences between groups were socioeconomic differences, rather than race differences. Racial differences in depression and anxiety were in the opposite direction expected, with Whites having statistically higher means than Blacks. When regression analyses for research question two were repeated with the SRIB variable restricted to the three illnesses with statistically significant differences in means, perceived stress accounted for a larger amount of variance in SRIB ($\Delta R^2 = .14$ compared to previous .06).

Table 4.13b. *Summary of Explanatory Regression Analysis for Variables Predicting Stress-Related Illness Burden*

Variable	<i>B</i>	SE <i>B</i>	β
Step 1			
Age	.04	.01	.36**
Gender	-.36	.17	-.11*
Education	-.16	.09	-.10
Race	.09	.06	.09
SES	-.38	.20	-.11
Step 2			
Stress Total	.13	.04	.17**
Step 3			
Perceived Stress	.51	.13	.23**

Note. $R^2 = .21^{**}$ for Step 1; $\Delta R^2 = .03^{**}$ for Step 2; $\Delta R^2 = .04^{**}$ for Step 3.

* $p < .05$. ** $p < .01$.

Summary of Quantitative Findings

Contrary to previous findings in the literature and subsequent assumptions, the association between race and SES was relatively weak and race was not significantly correlated with most of the stress scales utilized for this study. Although analyses were initially conducted by entering race and SES simultaneously into the regression equation, additional separate analyses revealed that SES was the only variable accounting for a statistically significant amount

of variance in any of the stress scales. Thus the response to research question one is that, after controlling for age, gender, and education, race does not account for a statistically significant amount of variance in any of the stress measures, and there are no variations found among racial groups with different geographical experiences. After controlling for the same variables mentioned above, SES accounts for 2% of the variance in traumatic events, 1% of the variance in perceived stress, and 2% of the variance in total stress exposures.

Findings for research question two reveal that, after controlling for age, gender, education, race, and SES, total stress exposures account for 3% of the variance in stress-related illness burden and perceived stress accounts for an additional 4% of the variance. If entered in the reverse order, after controlling for the demographic variables mentioned above, perceived stress accounts for 6% of the variance in stress-related illness burden and total stress exposures does not account for any additional variance. The stress-related illness variations for this study primarily reflect variations in hypertension, depression, and anxiety.

Description of Qualitative Study Participants

Participants' interest in the qualitative portion of the study was determined by asking them to document their willingness to participate in this phase on the consent form and provide contact information. Seventy-eight percent of all participants indicated they were willing to participate in the qualitative phase, with time constraints cited as the most common reason for those who refused. Participants were not recruited for the qualitative phase if they did not meet the race and SES criteria from the county targeted for that group (i.e., LSWs were not recruited from the county that targeted MSWs and vice versa) in order to avoid requiring participants to travel significant distances to attend meetings. Perceived stress level was also used to determine

eligibility for the qualitative phase in order to ensure stress as a salient topic for discussion. Race, SES, and perceived stress eligibility criteria reduced the pool of eligible participants to a total of 89, or 29% of the total number who participated in the quantitative phase.

Multiple orientation meetings were conducted for the LSB and MSB groups, based on the original study plan to conduct two focus groups for each population group. However, lower than expected attendance for these orientation meetings, combined with lower than expected proportions of White participants meeting the SES and perceived stress eligibility criteria for the qualitative phase, required a revision of the study plan to offer one focus group for each population group. The remaining two recruitment sites (for White participants) were offered only one orientation meeting. Perceived stress eligibility criteria was modified from a cutoff of 2.00 or higher on a 4.00 scale to a cutoff of 1.50 or higher in order to increase the number of eligible participants, especially in the MSW group (resulting in an additional 13 eligible for the MSW group and an additional 33 eligible overall). See Table 4.14 for a summary of participants who met eligibility criteria from each population group.

The LSW population proved particularly difficult to recruit. Only 3 of the 23 eligible participants attended the orientation meeting. The original focus group meeting was rescheduled when the majority of scheduled participants indicated they would be unable to attend upon receiving reminder calls the day before the meeting. Only one participant attended the rescheduled focus group meeting. The institutional review board approved a revision of the study protocol to increase incentives from \$20 per participant to \$100 per participant for this population group. After increasing incentives, not requiring all eligible participants to attend an orientation meeting (by delivering a disposable camera to one participant through the mail), and

Table 4.14. *Qualitative Phase Eligibility and Participant Characteristics*

	Recruitment county / SES-racial group			
	Fulton /	Spalding /	DeKalb /	Paulding /
	LSB	LSW	MSB	MSW
Met racial criteria	55	81	78	96
Consented to qual phase	50	67	58	63
Met SES criteria	47	26	41	47
Met stress criteria	30 (9)	21 (2)	19 (9)	19 (13)
Participated in orientation	9	3	5	7
Participated in focus grp	7	4 ^a	5	5
% female	72	100	40	20
Mean age in years	49	35	48	45
% HS education or more	57	75	80	100
Median family income	\$8,856	\$17,500	\$75,000	\$78,000

Note. The first six rows represent a progression in eligibility requirements. Numbers in the second row reflect a subset of those in the first row, and those in the third row reflect a subset of those in the second row, etc.

Numbers in parentheses indicate additional participants who met perceived stress criteria after eligibility was relaxed from $PSS \geq 2.00$ to $PSS \geq 1.50$.

^aOne additional LSW participant attended a focus group meeting that was cancelled due to low attendance.

rescheduling the focus group meeting two times, a focus group with four participants was completed. In the end, out of all population groups, only 20% of those eligible for the qualitative phase participated in it.

The demographic characteristics of all focus group participants can also be seen in Table 4.14. Age and education levels were roughly comparable between focus group participants and the larger population samples from which they were selected. However, gender profiles were not entirely comparable, with more LSW women and more MSW men represented in their respective focus groups than in the larger sample for their respective population groups. Median family incomes were lower for both LS groups when compared to the quantitative sample and incomes were higher for both MS groups than the quantitative sample, though the relationship between groups remained the same.

At the beginning of each orientation meeting participants selected code names for themselves which were used throughout the orientation and focus group meetings. (See Table 4.15). Introductions and references to fellow group members were conducted using the code names, so that participants could maintain their confidentiality within the group.

Analysis of Qualitative Data

Inductive Analysis

The qualitative phase of the study included data gathered through photovoice and focus group techniques. Transcriptions of the focus groups included participant discussions of their photovoice selections. This resulted in photovoice data that were embedded within the focus group transcript, therefore transcription data from these two qualitative research techniques was analyzed together, rather than separately.

Original tapes of the focus group meetings were transcribed by a transcription service. However, tapes from the second half of the MSW group were lost by the transcription service.

Table 4.15. *Self-Assigned Code Names of Focus Group Participants*

	Low-SES	Middle-SES
Blacks	Blacky	Dollbaby Bonner
	Sue	Bill Young
	Boom Boom	Purple Hayes
	Nissan	Jeffrey Baines
	Ruth	Shaker
	Fonda	
	Bill	
Whites	Georgia Girl	Fish Head
	Twin #2	Tink
	Prego	Al
	Renee	Fred
		Spuds

Participants from this group were contacted and offered increased incentives (\$100 per participant) to return and repeat their answers from the second half of the focus group meeting. All participants complied. One question from the first focus group (what resources they felt they had to deal with work-related stress) was repeated during the second focus group to assess comparability of the data. Participants' answers remained consistent.

First focus group:

Fred (MSW): I've ... asked for resources and get no solutions ... I can't find that there are any resources.

Al (MSW): My biggest source ... to help me deal with my stress is my wife ... and in addition you can commiserate with your co-workers ... we're all in the same boat.

Second focus group:

Fred (MSW): I really have tried to get help and resources and there has been nothing ... there are virtually no resources.

Al (MSW): I found that co-workers on your level of management because you can commiserate, they are going through the same thing ... My wife is an excellent source because she's always my rock.

Analysis of photovoice data complied with the three-stage process advocated by Wang and Burris (1997), which involves participants in selecting, contextualizing, and codifying. Participants were provided with disposable cameras so that they could take six pictures of things, people, or events that cause them stress. Each participant then selected two of their pictures to discuss. The focus group meeting began by allowing each participant to discuss their two pictures, allowing the opportunity to contextualize their selections. A research assistant recorded their answers onto 4x4 post-it notes. Participants then engaged in a pile-sorting exercise to sort the post-it notes into their own stress themes, allowing participants to further codify their photovoice data.

Participants then responded to additional focus group questions regarding their perceived control, engagement, resources, and economic and racial comparisons for their identified sources of stress (see Table 3.2 for Focus Group Questions). Data that were not already coded by the participants during the pile-sorting exercise was analyzed using the inductive analysis technique. This technique involved reading through each line of the transcript carefully and identifying each section that represented a separate thought, experience, or concept, then labeling it with one of

the themes identified by the group or creating a new in vivo theme, meaning that the theme title reflected the exact words of the participants. After all themes for a particular group were identified, all data representing those themes were grouped together and categories within the themes were established, again using the in vivo technique to label the categories by using the exact wording of the participants. See Appendix I, Tables I.1 – I.7 for detail on all themes and categories.

Table 4.16 represents the pile sorting and in vivo themes, top-three stressors, and photovoice numbers for each population group. The data analysis was guided by the research question for the qualitative phase, which asks: How are mechanisms of discrimination in our society (forced migration, social closure, and relative deprivation) perceived to contribute to chronic stress (through differential exposures, perceived lack of control, engagement in tasks, and perceived inadequate resources) for different racial and socioeconomic groups?

The analysis began by exploring the primary sources of stress, or stress themes, identified by each group to assess any differential exposures. The discussion below provides detail and analysis for each theme identified as one of the top three stressors for each group. See Appendix I for additional themes not discussed below.

Health-Related Stress Theme

All groups reported stress from health problems, and it was selected as one of the top three stressors for the LSB, LSW, and MSW groups. Specific stressors included: the frustrations of obtaining an accurate diagnosis (“doctor won’t tell you what’s going on”); the challenges of managing multiple medications (“so many pills”) or complicated treatments (see Figure 4.1 – “my pump”); the physical, emotional, and social implications of living with illnesses and

Table 4.16. *Qualitative Data Themes*

Theme	LSB	LSW	MSB	MSW
Medical Problems / Health / Health-Related* /	X [2]	X [1]	X	X [2]
Personal				
Family / Domestic / Family / Family	X	X	X [5]	X [2]
Bills / Finance / Finance / Money*	X [2]	X [4]	X [1]	X
Transportation / Trying to Find a Ride*	X [1]	X [1]		
Traffic / Personal			X [1]	X [1]
Work / Work*			X	X [5]
Social Climate			X [1]	
Drugs / Drugs and Alcohol / Substance	X	X [1]	X	X
Abuser* / Family				
The Community I Live In* / In the	X [4]	X [1]	X [1]	
Neighborhood * / In the Neighborhood*				
Depression Caused by Others	X [1]			
Business	X [1]			
Maintenance Problems	X [3]			

Note. * = in vivo theme title; all other titles produced during pile-sorting. Theme titles are listed left to right to coordinate with groups (e.g. “Bills” = LSB theme, “Finance” = LSW and MSB theme, “Money” = MSW theme). Shaded X’s represent the top three most important stressors selected by each group. Bracketed numbers represent the number of photovoice photos selected and discussed for each theme. Each focus group participant could offer two photos for discussion (both could be on the same topic), attendance for focus groups ranged from four to seven, total number of photos per group ranges from eight to fourteen. One participant in the MSB group only had one usable photo for discussion.

conditions such as skin ulcers (see Figure 4.2 – “look at my skin”), depression, seizure disorder, cancer, and obesity (see Figure 4.3 – “when you’re a heavy person”); and the challenges of living with and/or caring for a family member who does not assume responsibility for their own health (“he’s unhealthy”).



Figure 4.1.

Photo by Blacky (LSB): asthma pump



Figure 4.2.

Photo by Blacky (LSB): skin ulcers



Figure 4.3.

Photo by Al (MSW): being overweight

In the quote below Blacky (LSB) discusses her frustrations with her doctors in obtaining a diagnosis.

Blacky (LSB): It's stressful when the doctor won't tell you what's going on ... All the while I was in the hospital the doctor ain't said nothing to me. Nothing! ... I found out from my primary care doctor that I had [cancer].

Boom Boom (LSB) shares his experiences with a seizure disorder while Al (MSW) shares his frustrations with being overweight.

Boom Boom (LSB): It's stressful not to know when I'm going to have a seizure ... one day when I was at the train station I had a seizure and when I woke up they had robbed me, took everything ... if I get stressed out, I'm liable to force on a seizure ... I could die in the course of having a seizure.

Al (MSW): When you're a heavy person like I have become you are aware of it every day of your life ... You're uncomfortable, your clothes don't fit right ... You walk up a flight of stairs and you're huffing and puffing ... it is the primary stressor ... in my life ... because that's ... my future and the future of my family.

Twin #2 (LSW) and Jeffrey Baines (MSB) discussed the challenges of caring for and/or living with a family member who has health problems.

Twin #2 (LSW): [My sister] ... has all kind of related problems with weight. She ended up with diabetes and she ... basically she just don't do anything that they tell her to ... if you don't go with her to hear what the doctor says for yourself ... she over-exaggerates what's really going on with her.

Jeffrey Baines (MSB): She's going through this change thing, she's 55-years-old ... last night I froze my ass off in that house. She had the fan on ... and she snores ... We went to the doctor and they think it's some sleep apnea ... but she's not doing anything about it so I packed up ... I've got enough stress at work to not be getting enough sleep.

Health-related stress was mentioned by all population groups and listed as one of the most important for three of the four groups. Though various categories emerged within this theme, they did not appear to vary by economic or racial group.

Family Stress Theme

Stress from family was also common among all groups (see Figure 4.4), and it was selected as one of the top three stressors for the LSW, MSB, and MSW groups. Specific stressors centered around three categories: caregiving stress (“everybody was looking to me”), separation stress (“I wasn’t around my own family”), and around the house stress (“she moves things”).



Figure 4.4.

Photo by Tink (MSW): family

The majority of comments for the family stress theme centered around caregiving stress. The following quotes represent stress from family members who do not participate in caregiving for a parent, adult children who do not take responsibility and expect to receive assistance, and dealing with family members with mental illness.

Ruth (LSB): my mother ... I take care of everything for her. My brother stays there with her and she has a pace maker. They will call and I have to read it... when she brings her medicine back I have to read her medicine for her ... she got all these kids ...they have cars and I have to get the bus to go get groceries for her.

Shaker (MSB): I have my family in my home. Altogether it's nine of us ... I have a 3-year-old; I have a 10-month-old; I have a 10-year-old; I have 5-year-old and I have a 4-year-old and it's like four adults ... my husband gets paid real, real, good money and thank God for that ... but it's so much dealing with everybody's situation.

Tink (MSW): My family causes me great stress. I have one daughter-in-law, my grandchild and if anything goes wrong they call me ... They don't take responsibility for their own lives, but then again ... I assume their problems ... I cave in and I don't know how to change that and it's on-going stress for me.



Figure 4.5.

Photo by Spuds (MSW): family with mental illness

Spuds (MSW): [Referring to photo – Figure 4.5.] My son there, he is ADHD with PDD, Pervasive Development Disorder, and my daughter is ADHD ... my wife also suffers from chronic depression ... there's not relief anywhere ... Somebody's got to be there to keep everybody on track or at least separate them so they don't kill each other.

Comments regarding separation stress focused on issues related to estrangement, abandonment, or death.

Prego (LSW): I can't even really have a relationship with [my mother] because either she's angry with me for not doing something for her or she's guiltting me into doing something for her. ... it's hard ... you want to do all that you can but you just can't, because they're not going to stop asking you.

Around the house stress related to family members who move personal belongings, create clutter, interfere with home business activities, or never complete requested tasks around the house.



Figure 4.6.

Photo by Purple Hayes (MSB): clutter by spouse

Purple Hayes (MSB): That [referring to photo in Figure 4.6.] is my office and the stress represents a person that created that mess. I work two jobs and I have my own business ... Every time ... I'll get this little corner straightened out and then I'll come home from work and she's got a bunch of other stuff moved around ... she goes through my mail ... she also edits my phone calls and deletes the messages ... It drives me nuts.

Family stress was similar to health-related stress in that it was mentioned by all groups, listed as one of the most important by three out of four groups, and featured various categories within the theme, but again, the variations did not appear to fall along economic or racial lines.

Financial Stress Theme

All groups reported stress from finances, and it was selected as one of the top three stressors for the LSB, LSW, and MSB groups. Unlike health-related and family stress, the types of financial stress often differed by SES and racial groups. The economic status differences in

financial stress were revealed when the LS groups were the only ones to focus on a lack of financial resources. Examples included not having enough money to pay monthly bills (see Figures 4.7 and 4.8 – “bills just started piling”), make small personal purchases, or pay for repairs. Limited employment opportunities were also mentioned in the LSW group (“the economy is very bad here”).



Figure 4.7.

Photo by Nissan (LSB): bills

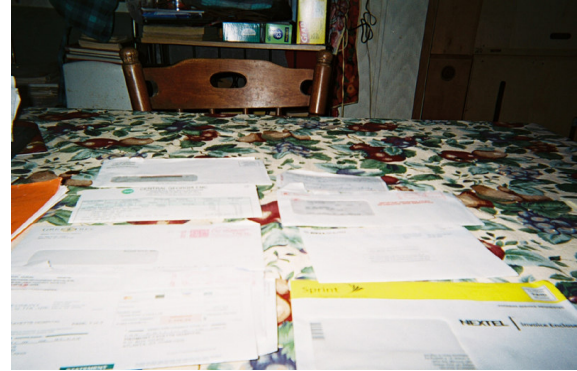


Figure 4.8.

Photo by Twin #2 (LSW): bills

This quote by Ruth explains the competing priorities that many of the participants mentioned in trying to pay for things.

Ruth (LSB): My grandkids, I have two with me ... I be trying to help ... my daughter with them ... he be needing something ... He says Mom I need this, I need that, will you help me? I try to help him but it really be stress sometimes. Sometimes I can hardly get myself a pair of sneakers or stockings.

Financial stressors that differ by race were revealed in the distinctions between the MS groups. The MSB group discussed financial stress resulting from restricted access to resources, such as hospital bills accumulated during a time when employees were temporarily without insurance coverage (“in the hospital with no insurance”), delays in receiving disability payments (“my disability people”), and frustrations with a property that was purchased then not properly

renovated (“they promised us the property would be ready”). The financial stressors discussed in the MSW group resulted from not exerting control over financial resources when it came to adult children and other family members who borrowed money and never returned it or offered alternate compensation (“no action to pay back”). The following quote from Fish Head reflects a frustration voiced by several participants of this group.

Fish Head (MSW): I’ve got a 28-year-old daughter and ... last year [she] borrowed money from us and hasn’t paid it back. Her boyfriend ... doesn’t think that money borrowed from family is borrowed money so he doesn’t try to pay it back.

Thus, both LS groups experienced financial stress due to lack of resources, the MSB group discussed restricted access to resources, and the MSW group discussed frustration from not exerting control over resources.

Transportation Stress Theme

Participants in both LS groups discussed the stresses of relying on public transportation (“I have to depend on MARTA”) or lacking transportation altogether (“I just want a car”). The LSB group selected transportation as one of their top three stressors.



Figure 4.9.

Photo by Boom Boom (LSB): public transportation

Boom Boom (LSB): I have to depend on MARTA to get where I'm going ... the drivers and the trains, everybody has their own schedules ... I always leave early ... if it wasn't for me understanding that they're always going to be late anyway, I would always be late ... and it makes you look kind of bad.

Prego (LSW): There's lots of stress with trying to find a ride to work, trying to find a ride to the grocery store, trying to find a ride particularly everywhere. I just want a car.

The themes of traffic and transportation appear to be complementary based on economic groups. The LS groups view the lack of access to personal forms of transportation, and the subsequent dependence on public systems that are frequently unreliable, as a source of stress. Only the groups that are economically advantaged enough to access personal transportation mentioned the traffic that they must deal with as a source of stress ("traffic in Georgia").

Work Stress Theme

Although the LS groups did not mention work as a source of stress, work featured prominently in the discussions with both MS groups and was selected as one of the top three stressors for the MSW group. Participants in both groups mentioned the stress of staff turnover and the illness and anxiety related to work stress ("that knot in your stomach"). MSB group participants discussed stress experienced from a lack of progression in their place of employment, unfair promotion and evaluation practices ("bypassing the ones that have longevity"), and cross-country relocation to maintain employment. Participants in the MSW group reported stress related to quality of work, time pressure, inspections and certifications, protocols that were unfair, unclear, or not appropriately followed, and pressures of supervising others ("it's hard to get people to do their jobs").



Figure 4.10.

Photo by Al (MSW): office

Al (MSW): This is a picture of my office at work. I'm one of the laboratory supervisors at [hospital] ... the laboratory is under a great deal of pressure to do perfect work and to do it very, very quickly and part of my job is to see that it's done ... it's very, very stressful when you have physicians calling for results when you have instrumentation that is down ... the doctors are evaluating a heart attack and strokes and other emergency situations and you're very much involved in saving of that patient's life.

Fish Head (MSW): I can relate to that knot in your stomach, because I get those sometimes three or four times a week when I get up in the morning thinking about going to work ... I've lost 30 pounds in the last year. I think because of stress.

Purple Hayes (MSB): We have to go by seniority also and it's like people they hire straight off the street that have no educational background seem to be bypassing the ones that have longevity and there's nothing that you can really do unless you just want to leave the company. The economy now won't allow you to do that.

The difference in exposures to work stress based on economic groups may reflect the degree to which the LS groups are either more likely to be unemployed, or may be more likely to be employed in jobs that do not offer the potential for progression or management, which are frequently mentioned elements in the work stresses of the MS groups.

Social Climate Stress Theme

Participants in the MSB group mentioned one theme for stress that was not discussed in any of the other groups: Social Climate. Although this theme had much overlap with the work stress theme, it is distinct and separate from this theme in its discussion of social or cultural climate. It was selected as one of the top three stressors for the MSB group.

Participants mentioned that the culture of the South is different than the North. Examples included behaviors by Blacks that are not considered acceptable in the South, employment implications of weaker unionization in the South, a lack of compassion in providing services, and attitudes that still reflect slavery.

Jeffrey Baines (MSB): I've been applying for other positions back up North and not even given an interview ... Maybe it's just me. I'm very out spoken, I say what I want most of the times, not disrespectfully but ... I feel like I can talk to anybody any way whether you are the boss or not, with tact and diplomacy. A lot of times I find they can't accept that here.

Dollbaby Bonner (MSB): The Southern climate is something you have to get acclimated to ... unionization down South is not as strong as it is up in New York ... you're really not supposed to speak your mind here because they feel that you threatening them or you're being insubordinate and the ones that's from here ... they're conditioned basically ... they let the superiors talk to them any kind of way ... it was a culture shock to me when I first came down here.

Purple Hayes (MSB): I'm probably one of the few people here that was born and raised in the South. All three of you are right. There are some people that will treat you like you're still in slavery.

The fact that this theme was distinct to the MSB group indicates that a racially charged social climate may not affect the stress levels of Whites, and may not play as much of a prominent role for LS Blacks when compared to other economic-related stressors.

Thus a discussion of the most important stress themes for all groups reveals three different types of stressor exposure comparisons. Some themes, such as health-related and family

stress, represent equal exposures among all racial and economic groups. Financial stress, though mentioned by all groups, represents different types of exposures within the same topic, based on both economic and racial differences. Other themes, such as transportation, work, and social climate, represent the greatest difference in exposures, with only the MS economic groups reporting the work theme, only the LS groups reporting the transportation theme, and only one economic/racial group (MSB) reporting the social climate theme.

After identifying the differences in exposures to the most important sources of stress for each group, the next phase of the analysis involved addressing the remaining portion of research question three. The literature review in chapter two provided a discussion on various mechanisms of discrimination in our society (forced migration, social closure, and relative deprivation), as well as various elements in the stress appraisal process (control, engagement, and resources). The data were then explored to assess if any of the themes or categories were relevant to the research question as identified through the literature review, and if any of these revealed differences between economic or racial groups.

Perceptions Regarding Economic Differences

Participants were asked to reflect on the ways their stress might have been different if they were a member of another economic group. Specifically, LS groups were asked about “people with more money”, and MS groups were asked about “people with less money.” Probes included asking participants specifically if the other group would have had the same kinds of stress or taken the same pictures, as well as whether the other group might have the same opinions regarding control, importance, and resources for stressors. The answers provide insight into the lived experiences of any socioeconomic discrimination that might be experienced by

participants or perceived to be experienced by LS groups, and the degree to which social mechanisms – relative deprivation, social closure and forced migration – factor into the stress-related perceptions of these different population groups.

There was a common feeling among all population groups that stress is universal, and economic advantages do not shield people from experiencing stress. From the LSB population, two participants framed this concept well:

Fonda (LSB): Stress period is what I think.

Boom Boom (LSB): That's a good point. Everybody has stress whether they poor or whether they're rich. That's what she's saying and that's right.

However, there was also a recognition expressed by both White groups that the themes of stress may be similar, but the actual experiences within those themes could still vary depending on economic status.

Prego (LSW): It's different types of stress. I mean most people that have money work for their money, they own businesses and that's a whole different type of stress that I know nothing about.

Al (MSW): When you talk about stress over socioeconomic lives, it's a different stress. I don't have to worry will I get a job or will I have a home to go to, but how do I maintain my job and maintain my lifestyle which I have become accustomed ... If you're worried about feeding your kid and I am worried about a report and eating my guts out, there's no equation but it is just as important. Your problems are just as important to you as mine are to me and that's universal.

These comments reflect the shared beliefs that there are both commonalities and differences in stress experiences between groups.

Participants from both LS groups also mentioned examples of protective beliefs. Several individuals offered examples of how they felt more fortunate than people with more money, or how people with more money had greater struggles in a particular area than they did.

Boom Boom (LSB): If they got a big house and the electric bill come in ... theirs get cut off ... their stress is greater.

Bill (LSB): I think a person with money doesn't value a dollar like a poor person would because I value a dollar. I can take a dollar and stretch that buck until water comes out of it. But people with money they don't think about that.

Twin #2 (LSW): I feel like if you ain't got everything you're more happier. You love your children more.

Prego (LSW): You're more thankful and things like that.

Twin #2 (LSW): You know you earn it yourself to appreciate it more you'll take care of it more.

By contrast, participants in the MSW group mentioned examples of advantages LS groups might have over their group. One participant from the MSW group perceived that advances in the socioeconomic hierarchy could create additional stresses.

Al (MSW): Along with prosperity advancement and job or status, typically comes increased stress and burdens because not only are you responsible for yourself, but you are responsible for others ... I went from supervision to a co-directorship now ... I've advanced, but that has essentially doubled my stress at work.

Several participants from the MSW group also perceived that many people from LS groups utilized their faith as a coping resource to a greater extent than MS groups might.

Tink (MSW): As far as religion, a lot of people they may have an unyielding faith in their God and belief and they let go and that keeps them calm. If anything comes up, they don't have money to pay the rent, car breaks down, they turn it over to a higher being and let it go.

Al (MSW): I have observed that those individuals are ... always struggling financially ... and they are the first ones to seek that spiritual outlet because they truly don't appear to have an alternative.

Fred (MSW): I wonder if that's why, because they don't have the ability for other things that they become very dedicated religiously.

Al (MSW): That's very valid ... I feel that it is more important in the lower socioeconomic groups to have that option.

Spuds (MSW): The lower income do not have benefit of obtaining good professional help ... Those that have made connections spiritually I would say tend to do much better.

These perceptions reveal the perceived differences in classes experienced by one MS group.

Relative deprivation.

In addition to the perceptions that people often share the same types of stress even though they may experience them differently, and that there are some advantages for each economic group, most of the groups also perceived that LS groups have some relative deprivations when compared to MS groups. In the following quotes from the LSB group, Boom Boom, Blacky and Nissan discuss the safety net resources available for people with more money that LS groups can not access.

Boom Boom (LSB): Now us, not having much money ... if we get put out we're on the streets ... if they lose the big place ... they can still get an apartment. They're not going to be put on the street.

Blacky (LSB): They can get their car fixed with money, even if it breaks down.

Boom Boom (LSB): Ervin Magic Johnson came out and said he had the AIDS virus, he says he's clean. I mean he's over it. How many people are dying from it? Why because they don't have the money. They don't have the resources to get the medication to pay for it. ... That's the difference between a lot of money and a little money.

Nissan (LSB): Power and control.

Prego and Georgia Girl from the LSW group also identified additional resources advantaged economic groups have relative to LS groups.

Prego (LSW): They have more influence with the police station ... There's lots of people who are willing to bend over backwards for them just because maybe they contribute to a certain fund ... As far as drugs and alcohol ... they probably have ... better resources actually ... say their kids have a drug and alcohol problem. They can afford to send them to a hospital somewhere, keep it out of the papers, whatever.

Georgia Girl (LSW): If they have legal issues they might know a friend that knows of an attorney that's a friend of the family that could give them good advice and go over documents that normally you would be charged for.

Fred, Spuds, and Fish Head from the MSW group also discussed the resources they have that would not be accessible to people with less money.

Fred (MSW): When they are trying to get professional help I think because of the lower echelon their resources are limited.

Spuds (MSW): Lower economic groups just by virtue of the economics they don't have the resources that are there for those with insurance or money. They do qualify for public assistance programs, but in many cases these programs are inferior. The personal treatment is not there ... So I do think that in that respect people of lower economic status are at an obvious tangible disadvantage in seeking resources. I don't think anybody would deny that.

Fish Head (MSW): I agree with Spuds on that.

Though relative deprivation was not the only perception expressed when asking participants to reflect on people of different social classes, it appeared to be a widely recognized phenomenon for the majority of participants.

Social closure.

In addition to relative deprivation, a second social mechanism reflected in the comments of the participants was social closure. Participants from most of the groups discussed ways in which people of LS would be limited or closed out of resources that are available to other socioeconomic groups.

Boom Boom (LSB): It would be easier for them to meet somebody that can teach them something ... show them a loophole [for bills].

Prego (LSW): A lot of the lower class people that don't make money get the focus on them. When there's ... children with rich families they get abused and their parents do drugs and drink and nobody says anything because they have money so ... it's all about money anymore.

Georgia Girl (LSW): Working in a small business, the banks will work with them much quicker and help them, because the former company I was working with was just bouncing checks like crazy ... \$500 and something dollars a month ... where if that had been us they would have ... taken us to jail for deposit account fraud.

Participants from the LSB group indicated a high degree of engagement in transportation – one of their top three stressors – when they all agreed that transportation is important because it is a means of independence and access to resources such as healthcare, thus implying that the social closure of not having access to reliable transportation is a highly meaningful form of stress for them.

Fred, from the MSW group, also recognizes that options are restricted for those who do not have access to health insurance.

Fred (MSW): Society structure [is] that if you have more money you can get better help that is going to be more effective for you if you have the insurance. If you don't have it is so limited.

These examples of social closure portray the constrained resources that LS groups must utilize when compared to the resources of more advantaged groups.

Perceptions Regarding Racial Differences

In addition to economic differences, participants were also asked to reflect on the ways their answers might have been different if they were a member of another racial group. Specifically, Black groups were asked how White people might have answered the questions, and White groups were asked how Black people might have answered the questions.

Many similar themes were identified when participants discussed stress from a racial perspective. Participants from every population group expressed the opinion that racial groups share stressors in common.

Blacky (LSB): They got blood in they body ... everybody you know we're the same color within ... They got stress just like we do.

Boom Boom (LSB): Try to put a color on it if you want to but I don't see no color when it comes to stress.

Twin #2 (LSW): It don't matter about their color or race, because you still face all of these problems everyday regardless of your race or anything. To me ... as long as you're living and breathing you're going to have problems.

Bill (MSB): This is not going to change because of the pigmentation or the color of my skin. It's always going to be stress because family, social and finance, it's still going to be there. That's not going to change.

Spuds (MSW): Stress has no skin color. Everyone experiences it no matter what your skin color background or anything. Stress is stress.

Although all groups agreed they shared stressors in common, each group also repeated the theme from the questions about socioeconomic status, stating that different racial groups may

experience the same types of stress, but the experiences within that theme may differ. Here, Tink, from the MSW group, discusses her opinions on the subject.

Tink (MSW): I think that throughout the world we are mirrored, I am mirrored with someone who has the same financial background, family problems and personal problems but are just different by the colors of our skin. They can handle it in a way in which their culture or the way they were brought up to handle these problems. They handle it one way, I handle it maybe another ... The resources in which we try to solve our problems are different whether we have financial resources or we have spiritual resources or reach out to friends, family members or just go to bed and take a pill. Pull the covers over our head and deal with it tomorrow. Background comes to play and what culture we have embraced come to play. Are we angered because we are a different color or an adult child of an alcoholic or nobody appreciates me for what I've done? It all comes together.

Tink's comments suggest that stresses may be the same, but cultural and social influences on differing racial groups may influence the response.

In the following quote, Purple, from the MSB group, discusses the different racial experiences of stress within the same theme. His comments also reflect the interconnectedness between race and socioeconomic status.

Purple (MSB): Most of my friends are White and we sit back and discuss what our problems are and I could say that they're the same category and if it's a coin but it's the other side of that coin. Like I may sit back and think, "Gosh, will I be able to go on vacation this year, do I have the money to go?" While they're sitting back thinking, "Are we going to go to Martha's Vineyard or are we going to go to Hampton ...?" ... Their problem is trying to decide what to do with the resources they have but my problem is that I have a lack of resources ... many times the Black family's worry is can we send our kids to college and the White family's worry is which college are you going to send them to? Will it be Harvard, will it be Yale, will it be Penn State and they tend to be Ivy League schools. I think they will have the same category but just at a different level. Because they're trying to make a choice of what to do with the resources rather than to complain about a lack of.

Purple's comment that it's the different side of the same coin reflects the persistent response that different racial groups may share similar types of stress but still experience them differently.

Social memory.

One new theme that appeared in the discussions about race was the concept, previously discussed in chapter two, of a social memory. In this case, one participant from the LSB group talks about the shared experience of depression he believes Blacks have, implying that it originates from a historical perspective.

Bill (LSB): But I think as a group of people Blacks might be a little stressed because they are depressed people ... because we're Black we've been depressed all our life, That's what they see. But you have to live with it because it ain't nothing you can do about it in society.

A second participant in the LSB group explains his opinion about why Blacks and Whites spend money differently, suggesting that there is a shared social memory of money management, passed down through generations, that is not the same for Blacks.

Boom Boom (LSB): It's not that Caucasian people got money so they know how to live and everything is wonderful and all swell and stuff like that; it's not like that, see. Because if you go back you see that great-granddaddy had that business and he brought his son in as a little boy and started teaching him the ropes so that when he dies, he'd carry on and that's how they do. See; don't fault them for having something because if they got it from ancestors, they were taught how to live with it.

These comments when placed together, reveal a belief that racial groups can experience different histories that are reflected in the behaviors and well-being of their present day counterparts.

Relative deprivation.

Participants from most of the groups also mentioned opinions relating to the relative deprivation Blacks might have when they are deprived of resources that are accessible to Whites. Boom Boom, Fonda, and Nissan, from the LSB group, discuss the resources they feel White people have that are different from Blacks.

Boom Boom (LSB): I think the best resource that they have is their ancestors and they got good friends.

Fonda (LSB): And making good money.

Nissan (LSB): Health insurance.

John Henryism.

In addition to different resources, Al, from the MSW group, shares his opinion about different perceptions and expectations for members of different racial groups.

Al (MSW): [Blacks] have to [go] way above and beyond with education and professional growth to try to get out of the perception of them and that's something that's completely different than I think that the White race is exposed to. Because we have been the dominant race since it's inception in this nation, that I think we don't have that history of playing catch up. I think that it's still out there, even if it's just in their own minds ... I am a Black man I have to catch up. I am already behind.

These comments from Al reflect the John Henryism concept introduced in chapter two, which is the idea that Blacks must overachieve in comparison to the achievements of Whites in order to gain control over their environments (James, Hartnett, and Kalsbeek, 1983).

Purple, from the MSB group, shares his personal experiences with different expectations based on race in the quote below.

Purple (MSB): From a social standpoint ... they may be afraid that one person may reject them but here I may walk into a room and be afraid that everyone may reject me. Many times I may go to a meeting or a conference and I may be the only African American in the room. There will be 100 people, 200/300 people and they're talking these high level and technical skills and then when I start talking it's like ... slow motion ... and over the years I've kind of gotten used to that and I think now not only what I'm going to say is going to be good, it's going to blow your socks off and boom!

Purple mentions his coping strategy of John-Henryism over-achievement, which reveals a high level of engagement in the outcome.

Differential exposures.

In addition to the general concept of unequal access to resources, participants from most of the groups also mentioned experiences or opinions about different treatment for members of different racial groups. In the following statement Fred, a participant in the MSW group, discussed an experience of racism he heard about from an acquaintance which was different than anything he had ever experienced.

Fred (MSW): Our history ... the one that we keep track of, has been dominated by White men. And I am a White male. So it's very hard for me to ... give a valid answer ... One example, I was talking to a custodian ... she's a nice Black lady and she ... is not happy about the way other people, even this girl who was hired after her, has been given a better schedule than she has ... She said she was talking to the principal about it and that the principal was upset ... she said that the lady was a Southern lady and just the fact that she didn't look at her was causing anger. I never experienced something like that ... I never had to deal with somebody who was going to be angry just because ... I had such disrespect to look at them ... White males dominate so I wouldn't know what it would be like.

Fred recognizes that his experiences with race-related issues are limited because of the place that his race and gender have allowed him in society.

Interestingly, participants from two separate focus groups mentioned the same example of racism – the reactions to a Black man stepping onto an elevator with White people – from different perspectives. In the first quote, Purple discusses what it is like to be that Black man.

Purple (MSB): There are a lot social conditions that we have to deal with especially as an African-American male working in Corporate America. When you meet someone that you don't know the first thing they think, "Is this guy going to mug me?" If you get on the elevator the first thing they do is start looking up ... I'm dressed nicer than you are, I'm not going to mug you.

In the second quote, Al shares the experience of a family member who reacted to a Black man on an elevator.

Al (MSW): I do think that there is a difference. Personal experience, we had taken my cousin to medical school ... and my aunt was going on the elevator and a young Black man got in the elevator with her and she felt so intimidated and so fearful that she was riding an elevator with the young Black gentleman that it really bothered her and she relayed this to us later. Come to find out that he was a medical student ... I do think that there is a difference. Perception. I think that perception, that is absorbed ... somebody that is different from us we immediately stereotype and have perceptions. And that person is on the receiving end of that perception. They are tuned to what people think ... the stresses of the difference and the perceptions ... we can't discount that. I never lived as a Black man but I believe that it is there. They perhaps have to work harder in school to get the better job ... I think that when you are in a multicultural society the interaction between different cultures are a source of stress in themselves.

Other members of Al's MSW group responded to his comments with their own thoughts.

Fred (MSW): I really truly agree with many of those things ... I do think that it resonates back. Being in the elevator, that dude knew for sure that she was uncomfortable. I guarantee that. It comes from both sides.

Spuds (MSW): You can look at it from a geographical location. The South. You still see some of it today. Where it's a very polarized environment as far as the race. You can't get away from it ... Then you get to other parts of the country and race is less prevalent.

Spuds' comments about the race environment being different in the South reflect similar comments made by participants in the MSB group about social climate.

Participants from the MSB group discussed the techniques they used to control the stress from such a charged social climate. Strategies included controlling who you associate with, putting others at ease, offering them friendship, and controlling reactions to other people. Still, participants discussed a lack of control over other people's perceptions and incentives.

Purple Hayes (MSB): There are a lot social conditions that we have to deal with especially as an African American male working in Corporate America ... What I try to do is reach out to touch the person, "How are you doing today? Lovely weather we're having. What about Tiger Woods?" ... There are some things you cannot control. For example, I call it a Quota Plantation, where they offer Black people an incentive to try to sabotage another Black person ... that's something that I cannot control. If somebody wants to be racist I can offer them friendship, I can offer them intelligence ... I can control the way I react to them.

Relationship between race and SES.

Many of the concepts shared in the economic discussion were similar to those in the race discussion. In fact, participants sometimes had difficulty differentiating between the two topics. Although each group was specifically asked about differences in race, it was not uncommon for the comments, especially in the LSB group, to slip into a discussion about differences in economic status.

In one sequence, one of the LSB participants references a stress theme that was unique to the group that experienced both economic and racial stress exposures: Maintenance. In this theme, participants discussed the stress caused by living in residences that are not properly maintained and the subsequent safety concerns those problems engender.



Figure 4.11.

Photo by Ruth (LSB): broken handle



Figure 4.12.

Photo by Fonda (LSB): broken window

Ruth (LSB): I live in a complex and the door handle, it just keeps falling ... It will be down ... I'd say about 3 or 4 months ... I'm afraid that ... someone might come there and think that they can get into my apartment. Now it's got a double lock ... but the point is, I have to unlock the bottom to make sure I don't get locked out of that door ... I have to take my hand and push it up to lock it.

Fonda (LSB): It's a room I stay in ... the window was broken and the man still hasn't gotten it fixed ... it's basically for drugs, alcoholics and prostitutes, just doing anything they want to do. It stresses me out because I never know if somebody will come through that window or not.

After discussing the Maintenance stress theme earlier in the focus group meeting, the LSB participant Fonda discusses her opinion about how this particular theme might differ for other groups. She begins by talking about racial differences, but the conversation turns to focus more on economic differences. By the end, this phenomenon is recognized and clarified.

Fonda (LSB): Okay, [White people] have ... a lot of things they can go to like a different ... resource they can go to but a Black doesn't have all this.

Research Assistant: Do you think they would have taken the same pictures that you guys took?

All (LSB): No.

Fonda (LSB): Not of no mail box and no door, not that, no way ... Everybody has stress if they rich.

Nissan (LSB): Right, if they rich then they're having more stress than you.

Boom Boom (LSB): Then they're having more stress than you.

Sue (LSB): That's what I said.

Nissan (LSB): They don't just have rich White folks, they have poor White folks too.

Bill (LSB): I know! I know!

Sue, from the LSB group, helps to clarify the relationship between the two.

Sue (LSB): There are a lot of White rich people moreso than Blacks ... most Whites have money.

This perception that more Whites have money than Blacks is consistent with the strong correlation between race and socioeconomic status that is frequently cited in the literature (Jones, 2000). Participants in the MSW group also recognized the relationship between race and SES, but felt that SES was more relevant to the discussion about resources available to deal with stress.

Al (MSW): As far as the resources, I believe that in today's society with laws that have been enacted to encourage if not guarantee equal access between the races, it's all going back to socioeconomics ... We all have equal access, regardless of race, based on economic status.

Spuds (MSW): When it come to the resources available, there is only one color that is preferential over any other color and that is the color of money.

Narrative Analysis

A supplemental analytic technique called narrative analysis was conducted for selected sections of qualitative data. In a few cases, participants relayed their experiences in the form of a narrative, or story, structure. Analyzing the data by examining and organizing it according to its story elements (abstract, orientation, complication, evaluation, result, coda) allows for a richer, more contextualized meaning to be communicated to the reader. See Appendix J, Tables J.1-J.4 for narrative analysis results.

Interactions of Participants

Another important element in the qualitative phase of the study was to assess the interactions of the participants during the focus group process. The purpose of this study was to examine stress experiences from a population - rather than an individual - perspective, therefore the interactions between the group members, their ways of engaging in collective sense-making, modifying views, and occasionally contradicting each other, are all important features in the interpretation of this data. One way to assess the degree of agreement among participants was to simply document when multiple participants from the same group contributed pictures with the same themes. This happened in each group, with multiple pictures of neighborhood stress and maintenance problems stress from the LSB participants, multiple pictures of financial stress from the LSW participants, multiple pictures of family and neighborhood stress from the MSB participants, and multiple pictures of work, family, and personal stress from the MSW participants.

A second means of assessing agreement among participants was to document when participants stated that they agreed with what another participant said, capturing the “I can relate

to that” moments. In the LSB group, there was agreement on a wide variety of issues, including the stress of bills, medication, family members not assisting with caregiving for a parent, maintenance problems, and leaving early to accommodate the lateness of public transit. In the LSW group, participants agreed with each other on the validity of such stresses as drugs and alcohol, neighborhood, needy family members, and medications. MSB participants found agreement on several issues which were not actually coded for analysis, as well as agreement on the stress of traffic and the social climate of the South. MSW participants confirmed the stresses of having a suicidal family member, having to institutionalize a mentally ill child, the knot in your stomach you feel related to work stress, and utilizing co-workers as a resource for work and family stress.

Of course, participants did also disagree with each other and offer differing opinions, so it is equally important to document those instances as well. Interestingly, participants did not disagree with each other on any sources of stress, the creation of stress themes, or the resources available to deal with stressors. However, disagreements did become evident when participants began to discuss their opinions about the degree of control and the importance of various stressors, and a variety of opinions emerged in all groups when participants were asked to discuss stressors for different economic and racial groups. Oftentimes disagreements were incorporated into the flow of the conversation so that the group could come to a collective agreement on the meaning of a particular topic. For example, in the LSB group, participants originally disagreed on the degree of control they had over stress from medical problems, with some stating they had total control and others stating they had none.

- Bill (LSB): I believe you have a lot of control over [medical problems]. I have high blood pressure, but if I wasn't doing drugs all those years I wouldn't have those problems ... You can't get mad at the doctor ... he told me stop drinking many years ago ... I brought it on myself.
- Boom Boom (LSB): I got total control over it ... I know I can't drink, can't use drugs so I don't do those things ... I make sure I take my medication. So I have total control over it if I do what I'm supposed to do.
- Ruth (LSB): I have control over my medication.
- Sue (LSB): Some of us can't control it and some of us can. I have arthritis real bad.
- Fonda (LSB): I had Spinal Meningitis, I didn't ask for it. It happens.
- Blacky (LSB): Now there's no control over the disease but we can control the disease with the medication.
- Nissan (LSB): I was in perfect health and I went to sleep and I woke up to use the restroom and hit the floor like wasn't nothing here. I can't put it on the drugs, I can't put it on the cigarette smoking ... Lupus. I never had heard of it a day in my life until that happened to me.
- Bill (LSB): What I'm saying is you still have to take some responsibility. If you got lung cancer that was out of her control; but if you got lung cancer and you smoked cigarettes for 20 years and it was on the package smoking is hazardous to your health. You can't get mad at the cigarette company.
- Nissan (LSB): What I'm saying is I might have not smoked a cigarette or done a drug in my life and I woke up and hit the floor. So what about that?
- Bill (LSB): Well that's out of your control then.

As the conversation progressed, members came to an agreement that stress related to medical problems can be controlled for illnesses such as hypertension, which can be prevented by following a doctor's advice and not drinking, and by complying with medication protocols, but members also agreed that there is limited control over medical problems that cannot be prevented. In a second example, participants in the MSW group sought to acquire deeper meaning about the lack of willpower to engage in health-promoting activities by one participant

introducing a possible explanation for this behavior and two other participants discussing their views on the subject.

Fish Head (MSW): Do you blame yourself for not wanting to exercise because when you get home you just don't want to?

Al (MSW): Exactly, exactly; no motivation ... all I want to do is sit there and stare at the T.V.

Fish Head (MSW): After a whole week I can't even get up to go fishing sometimes. I just want to sit.

Tink (MSW): Do you feel like the stress at work and not exercising and your weight is a hidden form of depression? Since you have no motivation?

Al (MSW): I don't think so ... I think it's the combination of the stress and the overweight and perhaps both of them feeding off of each other and I can't break that relationship to get motivated to get out and exercise.

Fish Head (MSW): I think it's funny what Tink said about depression. Because my wife interprets my inactivity as depression, she thinks I'm depressed. I don't think I'm really depressed. I'm tired sometimes ... sometimes I don't want to do anything but she calls it depression.

In this instance the participants did not come to a consensus on the subject, but they clarified their views, explored their agreements and disagreements, and found a deeper sense of meaning in their opinions by sharing them with others. This group also followed a similar path when they discussed their opinions about LS groups utilizing religion and faith as a coping resource for stress, perhaps due to a lack of other available resources. Such explorations of group interactions are essential in providing the context to fully represent the qualitative data discussed above.

Reliability and Validity of Qualitative Data

There are many ways in which the reliability and validity of qualitative data can be assessed. The reader can compare the results to the research philosophy of the researcher, to

assess if any bias in the researcher's perspective may have influenced the interpretation of the results (see Chapter Three for Research Philosophy). The reader can also compare the qualitative study participants to the quantitative study participants to assess the representativeness of the sample (see Tables 4.2 and 4.13).

There are also steps the researcher can take to assess and safeguard reliability and validity. The researcher can engage in member checks to assess if participants in the study concur with the researcher's findings. The researcher can engage in critical reflections to assess if coding of the qualitative data was biased by examining the data that were not coded. Finally, the researcher can triangulate the data from various sources to assess the degree of content validity and convergence.

Unfortunately, due to the extended period of time that lapsed between the collection of much of the qualitative data and the analysis, the member check option was not deemed appropriate for this study. However, the critical reflections and triangulation of data were completed and are described below.

Critical Reflections

While conducting inductive analysis of the qualitative data, special care was taken to document any portions of the transcript that were not coded, in an effort to protect against bias in the analysis. Topics of uncoded data were summarized, then grouped together. Themes from these topics were then identified to assess if the themes might still have relevance to the research subjects. Four themes emerged from the uncoded data: coping and stress management strategies and recommendations, life philosophies, personal histories, and opinions on current issues and states of affair.

It is important to recognize that the research questions of this study create an artificial divide in the experiences and opinions of the participants' lives. The vast majority of participants do not separate the source of their stress from their means of coping with these stressors. Participants often discussed their stressors within the context of their coping responses, including behavioral changes and cognitive restructuring techniques. In addition, many participants offered advice to those expressing stress over a particular issue, through recommendations of coping strategies or sharing techniques that had worked for them. Similarly, the sharing of participants' life philosophies easily flowed with the direction of most conversations. Participants offered their perspectives on what is important in life as a means of further contextualizing their stressors and stress reactions. Personal histories were also offered as a means to provide deeper context and meaning to the discussion topics. Finally, opinions on current issues and states of affair often seeped into the conversation as participants responded to the experiences and life philosophies discussed by incorporating them into the context of current media topics. Though none of these themes has any direct relevance to the study research questions or the reliability or validity of the findings, it is important to recognize the degree to which the data were truncated when reporting the results.

Triangulation of Data

Triangulation of the data was conducted by juxtaposing the focus group and photovoice qualitative data with specific quantitative items relative to each of the qualitative data themes. Groups were compared within each theme to assess the level of importance or relevance for each theme, first with qualitative data, then with quantitative data. The data were then triangulated to see if the importance of each theme for each group was consistent across data sets.

The importance or relevance of the qualitative data within each SES/racial group was assessed by asking three questions: 1) was the theme mentioned by that group, 2) was it chosen as one of the top three most important stressors by that group, and 3) how many photovoice photos for that theme were selected by group members to discuss during the meeting. If a theme was mentioned by one group and not by another, the theme was interpreted as having more importance or relevance to the group that mentioned it compared to the group that did not. If the same theme was mentioned by more than one group but one group chose the theme as one of their top three most important stressors and the other group(s) did not, the theme was interpreted as more important or relevant for the group that selected it as one of their top three stressors. Similarly, the number of photovoice photos for a theme was interpreted as indicating the degree of importance for that theme, with a higher importance for groups with more pictures and a lower importance for groups with fewer pictures.

The importance or relevance of the quantitative data was assessed by comparing means of relevant items for each group. Items that were relevant to the qualitative data themes were selected from each stress scale (SRRS-R, DHS, and TES). The relevant items were then combined into composite scores specific to each scale and theme. For example, one of the qualitative themes was health-related stress. The SRRS-R contained two health-related items, the DHS contained thirteen health-related items, and the TES contained two health-related items. Therefore, three composite health-related stress scores were created, one for each scale (see Appendix K for more detail on the quantitative items selected from each scale for each theme). The means and standard deviations of each composite score were then calculated for each population group. Additional one-way ANOVAs and post hoc Bonferroni comparisons were conducted to assess the level of statistically significant difference in means between groups and

assess which groups were significantly different from each other. Two of the themes – Depression Caused by Others and Business (referring to the business of interacting with social service agencies such as welfare, social security, and a public hospital) – did not have relevant questions on any of the stress scales, and therefore no comparisons were made for these themes.

The qualitative and quantitative data were triangulated by comparing the quantitative means and significant differences between groups with the mention of the theme, ranking of the theme as a top-three important stressor, and number of photos for that theme. See Table K.1 in Appendix K for specific comparisons of all qualitative and quantitative data. Findings reveal agreement between data sets for some themes, but not others. Also, the relationship with qualitative data is stronger for items from some quantitative scales compared to others.

Differences in means for items from the Daily Hassles Scale were consistent with the mention, selection as a top-three stressor, and number of pictures selected, for Finance, Transportation, Traffic, Drugs and Alcohol, and Neighborhood stress themes. Life events scale items (SRRS-R) were consistent with qualitative data differences for the Social Climate and Drugs and Alcohol themes. Both scales were in mixed agreement (consistent with some criteria for the importance of qualitative data, but not others) with the Health-Related stress theme, and the life events scale was also in mixed agreement with the Finance and Neighborhood themes. Due to the fact that some themes did not have relevant items for both scales, no conclusions can be drawn regarding the relevance of chronic daily hassles versus life events for each theme.

The Traumatic Events Scale only had relevant items for three of the twelve qualitative themes. Differences in means for TES items were consistent with one of these themes: Family. Interestingly, items from the DHS and SRRS-R for the family theme were not consistent with qualitative data. This suggests that sensitivity to the daily family stressors mentioned during the

focus groups (caregiving stress, around the house stress) may be influenced by traumatic family stressors of the past (separation stress, divorce, infidelity, abuse, etc.).

Statistically significant differences between means were detected for the following themes: Family, Finance, Transportation, Drugs and Alcohol, and Neighborhood stress. These findings reinforce the assumption that LS groups are more significantly affected by stress from Finance, Transportation, and Neighborhood than MS groups. However, traumatic stress from Family and Drugs and Alcohol appears to affect MS groups more than LS groups. (See Table K.1 in Appendix K for complete details.)

There were no statistically significant differences overall for the Social Climate stress theme. However, because one of the two questions for the social climate quantitative score was a compound question which introduced gender as a possible source of discrimination (experiencing employment discrimination / sexual harassment), two further analyses were conducted for this composite score - one for each gender. No statistically significant difference was found for social climate discrimination between women of the various SES/racial groups, but there was a statistically significant difference between men in the middle-SES groups $F(3, 120) = 3.86, p = .01$. This finding partially supports and further clarifies the qualitative data regarding the effect of discriminatory social climate on various SES/racial groups, suggesting that the issue is most relevant to MSB men.

The lack of significance between means for the health theme suggests that despite some variation in qualitative data on this topic, health-related stress could be an equal-opportunity stressor. The lack of significance between means for the traffic theme is in contrast to the assumption from the qualitative data that traffic is more important to the MS groups. This suggests that the lack of mention of a stress theme by a particular group does not necessarily

indicate that the topic is less stressful to that group compared to other groups, but perhaps that the topic is less important compared to other topics for that group (for example, transportation appears to be a more important stressor for LS groups than traffic, though both topics are stressful).

Two themes revealed a disconnect between quantitative and qualitative data when the data were triangulated: work and maintenance problems. The qualitative data suggested that work stress would be most important to the MSW group, followed by the MSB group, and that the LS groups would not be affected as much by this topic since it was not identified as one of their themes. In contrast, the quantitative data suggest that work is most stressful to the MSB and LSW groups. Similarly, the qualitative data suggested that maintenance would be most stressful to the LSB group and not affect the MS groups much, since it was not mentioned. In contrast, the quantitative data suggested that it is most important to the LSW group. None of the differences for any of these themes was found to be statistically significant, so perhaps the contradictory variations in importance are of less significance as well. However, these findings do support the observation mentioned above in regards to the traffic theme, that the lack of mention of a theme should perhaps not be interpreted as a lack of stress from that theme.

The triangulation of the qualitative and quantitative data suggests that interpretations of the qualitative data are reliable and valid on the whole. However, the comparison between these data sources also helped to clarify some relationships (such as the gender component of the social climate theme) and provided a cautionary component to the interpretation of a lack of stress for qualitative themes that are not mentioned. It is also possible that further disagreement between qualitative and quantitative data could be a result of assessing different sub-components of the same theme, such as quantitative scores on work stress, which reflect questions regarding

life events such as termination of employment or daily hassles such as not getting along with co-workers, in contrast to qualitative topics identified in the MSW group such as responsibility for subordinates and time pressures on the job.

Summary of Qualitative Findings

Twelve stress-related themes were identified in the qualitative phase of the study. Some themes, such as health problems, represent equal-opportunity stressors, with equal exposures among all groups. Other themes, such as transportation and social climate, could represent stressors of socioeconomic or racial structural discrimination, respectively. At least one theme-financial stress-represents exposure to all groups but experiences varied within different racial and socioeconomic groups.

Perceptions of socioeconomic relative deprivations were mentioned in three of the four groups. LS groups discussed a relative lack of safety net resources when faced with problems related to money for housing, transportation, medical care, legal issues, and drug and alcohol rehabilitation. The MSW group discussed their relative economic advantages for access to mental health counseling in comparison to LS groups.

Mechanisms of social closure were also recognized as a means to differentiate socioeconomic groups. Both LS groups discussed not having access to resources such as social connections to guide them in financial issues, social buffers that protect drug-addicted or abusive parents from interacting with child protective services, social and financial resources that protect against financial penalties, and personal forms of transportation that provide reliable access to additional resources such as employment and healthcare.

Relative deprivation was also a factor in discussions about racial differences. Members of the LSB group mentioned a relative lack of resources such as ancestors, good friends, good money, and health insurance, in comparison to Whites. The concept of ancestors as a resource can be tied to the mechanism of forced migration, when Blacks were forcibly brought to this country for slavery, severing the ancestral ties for many. The social memory of such a trauma can affect a population group for generations, and Bill, a member of the LSB group, seemed to reflect this concept when he stated, “Blacks ... are depressed people ... because we’re Black we’ve been depressed all our life.”

John-Henryism, the idea that Blacks must overachieve in comparison to the achievements of Whites in order to gain control over their environments, was also mentioned in both MS groups, indicating that engagement in stressful events may be higher for Blacks who wish to have equal achievements to Whites in an unequal environment. This may be especially true for Black MS men.

Multiple groups discussed the perceived relationship between race and SES. Participants stated that Whites have more money than Blacks, and unequal access to resources is more a reflection of economic status than race.

Triangulation of quantitative and qualitative data revealed that any statistically significant differences between means for stress-related themes were more likely to reflect economic than racial differences. Findings also indicated that the lack of mention of a stress theme by a particular group does not necessarily indicate a lack of stress from this topic.

CHAPTER 5

CONCLUSION

Summary of Results

This study was conducted to test the a priori theory that people who are members of disadvantaged racial and/or socioeconomic groups in our society experience disproportionate levels of stress-related illness due to the chronic stress caused by mechanisms of institutionalized racial and/or class discrimination.

Quantitative findings for research question one revealed that sociological mechanisms of race discrimination do not appear to contribute to chronic stress, as race did not account for any statistically significant variance in any of the stress measures. Mechanisms of class discrimination do appear to contribute to chronic stress, however, as SES was found to account for a statistically significant amount variance in traumatic events, perceived stress, and total stress exposures.

Quantitative findings for research question two revealed that disproportionate chronic stress, when measured as perceived stress, accounts for 6% of the variance in the original stress-related illness burden variable, and 14% of the variance in stress-related illnesses for which a health disparity was verified in this study. Total stress exposures do not account for any additional variance in stress-related illness burden using either version of the variable.

Qualitative findings revealed that there were many similarities in sources of stress between all groups, but disadvantaged racial and economic groups did experience some types of stress that were different from those experienced by the more privileged groups, and some shared stressors were experienced in different ways for different groups. An exploration of how mechanisms of institutionalized discrimination affect the context of stress-related perceptions revealed that relative deprivation and social closure affect perceptions of resources to deal with stressors for disadvantaged socioeconomic groups, while John-Henryism affects engagement in stressors for middle-SES Blacks and relative deprivation affects perceptions of resources for low-SES Blacks.

Discussion

Before engaging in regression analyses for research questions one and two, correlations and means testing were conducted to examine relationships between variables and to confirm or disconfirm expected study group variances in dependent variables. Race was expected to be strongly associated with SES, and also associated with other study variables. However, findings revealed a relatively weak association between race and SES, as well as a lack of association between race and nearly all other variables. These findings were consistent with the subsequent results of the regression analyses, which found that race did not account for any statistically significant variance in any of the stress measures.

In retrospect, the weak association between race and SES could be explained by the study design itself. According to the US Census Bureau (U.S. Census Bureau, 2000) and Healthy People 2010 (U.S. Department of Health and Human Services, 2000), in the year 2000 African Americans made up 12% of the total population but nearly 30% of those who lived below the

poverty level, whereas Whites made up 75% of the total population but less than 10% of those who lived below the poverty level. By creating a study design that actively recruited equal numbers of Blacks and Whites from approximately equally matched SES groups, the resulting ratio of nearly 1:1 low-SES Blacks to low-SES Whites was in stark contrast to the 3:1 ratio of low-SES Blacks to low-SES Whites in the general population, thus the association between these two variables was subsequently weakened by artificially creating equal proportions between the two racial groups.

The lack of association between race and nearly all other variables, and the fact that race did not account for any statistically significant variance for any of the stress measures, is more difficult to explain. There are numerous publications that discuss racism as a source of stress (Anderson, 1991; Carroll, 1998; Clark et al., 1999; Contrada et al., 2000; Krause, 1987; Krieger et al., 1993; Sanders Thompson, 1996; Ulbrich et al., 1989; Utsey, 1998). The concept that racism could contribute to health outcomes also continues to be promoted, with a recent article in the *Boston Globe* stating that “more than 100 studies – most published since 2000 – now document the effects of racial discrimination on physical health” (Drexler, 2007).

Though no publications were found which specifically discussed racial/ethnic differences for the SRRS-R, DHS, or TES stress measures used for this study, a study by Turner and Avison (2003) utilized similar life events, chronic stressors, and traumatic events checklists and found that African Americans scored higher on all of these stress measures when compared to Whites, and the differences were statistically significant for all but the traumatic events measure. The authors further found that ethnic differences in total stress were observed within each SES category. Thus, similar racial findings were expected for this study.

It could be argued that life events, daily hassles, and traumatic events checklists such as those used in this study are too racially generic (or too Euro-centric) to include stressors that are specific to the African-American racial experience, failing to capture exposures to both individual and institutional forms of racial stress (Thoits, 1983). However, the PSS, a measure of global perceived stress, was specifically designed to capture, among other things, “stress from events not listed on a particular life-events scale” (Cohen et al., 1983), which could presumably include stress from racial discrimination. Indeed, norms testing of the PSS, with 2387 respondents, showed that minority race status was associated with reports of perceived stress and scores for Blacks were significantly higher than scores for Whites (Cohen & Williamson, 1988). Thus, the expectation of higher stress scores for Blacks than Whites was based on some precedent in the literature.

Studies comparing Black and White racial groups for stress and stress-related health outcomes have been inconsistent in their findings (Williams & Williams-Morris, 2000) with some noting an association between experiences of racism and subjective distress (Sanders Thompson, 1996), or associations with disadvantaged racial status and stress (Turner & Avison, 2003), and others noting no relationship between disadvantaged racial status and vulnerability to stress (Neff, 1985) or financial strain and self-reported health (Krause, 1987). Researchers frequently argue that these inconsistencies are due to flaws in study designs. For example, authors have argued that the following elements of study design could weaken or distort subsequent findings:

- 1) studies that only include one type of checklist (e.g., life events or daily hassles), because different types of checklist measures capture different types of stressors, and

- studies that use only one measure are capturing only a small portion of the stressors experienced by the study population (Meyer, 2003; Turner & Avison, 2003);
- 2) studies that use only checklist stress measures, because all types of checklist stress measures have been criticized for neglecting the appraisal part of the stress process by presuming, rather than confirming, that checked events are perceived as stressful to the respondent (Cohen et al., 1983);
 - 3) studies that do not examine SES differences within racial groups, because there can be a great deal of within-group variability explained by differences in SES (Clark et al., 1999; Ulbrich et al., 1989);
 - 4) studies that examine discrimination but do not compare different racial groups, because results can only speak to the variation of discrimination within the racial group studied, but not the variation between racial groups (Meyer, 2003);
 - 5) studies that focus on assessing discriminatory stress at the individual level, because neglecting institutionalized sources of racial stress, which could be ubiquitous within a racial group, could result in little variability to study unless compared to other racial groups (Meyer, 2003). Some have also argued that this structural form of discriminatory stress could even be unrecognized as a source of discrimination by members of the racial group affected, yet still result in negative outcomes (Clark et al., 1999; Meyer, 2003).

Based on these arguments, the current study was specifically designed to avoid these weaknesses by: 1) combining multiple types of checklist measures (life events, daily hassles, and traumatic events), 2) including a perceived stress measure to capture appraisals of overall stress as well as exposure to stressors, 3) examining socioeconomic status variations within racial

groups, 4) comparing Black and White racial groups, and 5) focusing on institutionalized racism rather than individual racism by using race as a proxy for structural forms of racial stress rather than a scale to measure individually perceived racial discrimination.

Despite these accommodations in the study design, race was found to have no significant relationship to stress outcomes. This does not mean that structural forms of racism do not still exist today. As discussed in chapter two, institutional mechanisms of social closure based on race can result in restricted access to employment, affordable and safe housing, quality education, reliable transportation, and quality healthcare. Demographic data for this study confirmed the continued presence of many of these mechanisms by revealing the LS Blacks still had lower levels of employment, home ownership, and educational attainment than LS Whites, though only home ownership differences were statistically significant, and there were no racial differences in these areas for MS groups.

Qualitative data suggest that racism may only be perceived to be relevant as an important source of stress for middle-SES African-American men in the work environment. This group indicated a high degree of engagement and goal-striving through John Henryism, or the desire to achieve equal outcomes in an unequal environment by striving more than others. Racial structures of inequality were recognized in both Black groups and among both genders, but aside from the limited arena of work stress, racism did not appear to be an underlying source of stress for these groups, nor did it appear to contribute to the appraisal of stressors by influencing the degree of importance, amount of control, or perceived resources available to deal with stressors.

Thus if racial structural inequality can still be documented and is still recognized among disadvantaged racial groups, but has no influence on general stress exposure checklists, global perceived stress, or the stress appraisal process for important stressors, then African Americans

may be engaging in more powerful coping mechanisms to counteract and neutralize the stressful effects of racism. Indeed, many authors offer a variety of possible coping mechanisms that may be utilized by African Americans in dealing with perceived racism, from John Henryism, social support, religious participation, acceptance, denial, group identity, to fatalism (Clark et al., 1999; Plummer & Slane, 1996; Ulbrich et al., 1989; Williams & Williams-Morris, 2000).

A second part of research question one was to investigate if class discrimination contributes to chronic stress. Here, findings were more consistent with the study's a priori theory, revealing that the low-SES groups have higher scores on each of the stress measures than the middle-SES groups, and SES accounts for a significant amount of variance in traumatic events, perceived stress, and total stress exposures. This indicates that, consistent with prior research findings, the low-SES in our society have increased exposure to a variety of stressful events, especially traumatic events such as witnessing violence or growing up in a household where a parent is unemployed (Aneshensel, 1992).

Perceptions of stress are also higher among the low-SES, which is again consistent with prior research (Cohen & Williamson, 1988). Qualitative data provide context for this finding by revealing that LS may affect the appraisal process by influencing the perception of resources available to deal with stressors. Both LS groups reflected that, compared to groups with more money, they felt they had limited access to a variety of social and financial resources that would provide them better access to financial management, childcare, healthcare, transportation, and employment. Thus, higher perceived stress among low-SES groups may result from the combination of increased exposure to stressors and fewer resources to deal with those stressors.

It is important to recognize that poverty itself may not be the primary source of increased exposure to stressors or decreased perceived resources. The social mechanisms that create

opportunities for some to generate or protect their wealth often simultaneously deprive others of equitable opportunities. The relative deprivation that LS groups experience by comparing their stressors and resources to those of more privileged groups contributes to the perception of inequality, thus enhancing the potential that stressors will be attended to and appraised as stressful.

This perception of stress is of vital importance, because it is the perception that is most likely to contribute to stress-related illness. In adding the final element to the biopsychosocial model of this study, research question two explored the biological implications of psychosocial stress by investigating which variables accounted for variance in the stress-related illnesses for which there is a racial or SES disparity. Findings revealed that total exposure to stressors did not explain any additional variance in stress-related illness burden beyond the variance explained by perceived stress, indicating that perceptions of stress are a more accurate reflection of vulnerability to stress-related illness. This finding is again consistent with previous research (Cohen et al., 1983; Sapolsky, 1998).

The qualitative portion of the study was conducted to explore the psychological appraisal process of different population groups, as well as to provide further depth and insight into the social context of the quantitative data findings regarding exposures and perceptions of stress. The appraisal process was assessed by asking questions regarding the degree to which participants perceived they had control over their stressors, how important they perceived the stressors were in their lives, and what kinds of resources they perceived they had to deal with their stressors. Relative deprivation was assessed by asking participants to compare these answers to the answers that might be provided by different racial and SES groups.

In general, explorations of the important elements of the appraisal process – control, engagement, and resources – revealed a wide variety of perspectives within each group. This is consistent with Aneshensel's (Aneshensel, 1992) argument that stress outcomes do not vary by social group due to specific vulnerabilities inherent to that group. Thus, LS groups are not likely to have more stress and stress-related illness because they are inherently prone to interpreting events as being out of their control more often than MS groups.

There was one consistency within and between the groups regarding the appraisal process, and that was the perception of resources when compared across economic groups. LS groups perceived that they had fewer resources to deal with stressors than MS groups, and MS groups concurred. As mentioned above, this is consistent with prior research findings regarding higher exposure to stressors and fewer resources to deal with stressors for those in the lower SES groups (Aneshensel, 1992).

The qualitative portion of the study also afforded the opportunity to further review the social context of stress experiences within different racial/SES groups. The photovoice element of the study initiated the discussion of sources of stress by asking participants to document their stressors with pictures and then discuss them during the focus groups. Twelve stress themes were identified using the photovoice technique, with four themes mentioned by all groups (health problems, family, finances, and drugs and alcohol), one theme mentioned by three groups (neighborhood), two themes mentioned by two groups (work and traffic), and four themes mentioned by one group each (social climate, depression caused by others, business, and maintenance problems).

Further descriptions of these themes revealed areas of commonalities and differences between groups. For example, some themes, such as health problems and family, were not only

mentioned by all groups, but described in a similar fashion, indicating that these were equal-opportunity stressors.

Other themes that were mentioned by some groups—but not all—reflected topics identified in chapter two as mechanisms of structural inequality through social closure or relative deprivation. Neighborhood stress, mentioned by both LS groups and the MSB group, mirrors the social closure of historical and de facto housing segregation (based on both race and SES), which results in increased poverty, crime, and deterioration (Massey & Denton, 1993). The maintenance problems theme (mentioned only by the LSB group) was closely related to the neighborhood theme in that it related to rental properties that were not properly maintained, resulting in a decreased sense of safety for the residents. The transportation theme, mentioned only by the LS groups, indicates the social closure experienced by those who do not have access to reliable forms of personal transport, and the lack of resources that represents, both literally (limited access to jobs, healthcare, etc.) and figuratively (living without a car in a society where most have one) (Kawachi & Kennedy, 2002). The social climate theme, mentioned only by the MSB group, reflected both the social closure and relative deprivation of Blacks in the corporate work environment of the South, where unionization is much weaker and attitudes of slavery still exist (Grant & Wallace, 1994). The business theme, mentioned only by the LSB group, discussed the stress of accessing social services such as welfare, social security, public transportation, and healthcare from a hospital for the indigent, and the relative deprivation involved in accessing such services that others receive without the wait and indignities.

The financial stress theme was a multi-faceted topic with different implications for different groups. Both LS groups discussed a lack of resources, likely due to the social closure mechanisms that blocked them from adequate education, employment, and fair wages (Bartley &

Owen, 1996; Fischer et al., 1996). The MSB group discussed the social closure of restricted access to resources such as health and disability insurance, while the MSW group focused on a different part of the appraisal process by discussing their frustrations with not exerting the control over their resources that they felt they should.

Triangulation of quantitative and qualitative data revealed some important perspective and caveats for the interpretation of the data. As indicated in Figure 1.2 of Chapter 1, the data were triangulated by comparing the sources of stress identified in the qualitative phase of the study with individual items from the stress scales used in the quantitative phase of the study. Comparison of the themes to items on events checklists revealed what some authors have already argued, that most checklists do not include events that are equally relevant to all ethnic or SES groups (Thoits, 1983). Specifically, the business and maintenance themes mentioned by the LSB group were not included on the checklists, and the social climate theme mentioned by the MSB group was only tangentially related to two general questions regarding discrimination.

Just as checklists devised to measure exposure to stressful events cannot accurately capture differences in stress between groups if the scales do not accurately reflect the different experiences of the groups, a list of qualitative themes of different types of stress also cannot accurately reflect the differences between groups unless that same list is presented to each group for comment. For example, initial interpretation of the qualitative data indicated that some themes, such as work and traffic, may not have had much relevance to the LS groups, since both themes were only mentioned by the MS groups. However, a comparison of means for work and traffic items from the stress scales revealed that there was no statistical difference between population groups for these topics. Thus, the fact that the LS groups did not mention these topics

did not mean that they were not a source of stress for these groups, they were perhaps simply not as important as some of the other topics mentioned.

A similar exploration of stress scale items relevant to the themes identified in the qualitative phase of the study provided several opportunities for triangulation of quantitative and qualitative data. Findings revealed three themes with a statistically significant difference between groups: neighborhood, transportation, and finances. These findings were consistent with the overall quantitative results of the study in that most of the differences between groups were based on SES differences, with the remaining differences crossing both race and SES, between the LSB and MSW group. This confirms that SES plays a more primary role in population group differences in stress experiences than race does. It is interesting that the three themes with a significant difference were consistent with the structural inequality themes identified before the study began, and also showed group differences within the qualitative phase. These findings indicate further support for the a priori theory that: a) discrimination is perpetrated through institutionalized mechanisms, b) these mechanisms of discrimination specifically affect the resources stage of the appraisal process, resulting in the perception of stress, c) the perception of psychological stress then creates a biological reaction which, when repeated over time, creates and exacerbates illness.

Limitations

This study has several limitations. First, the study population consisted of a convenience sample of participants approached in doctor's offices. Though the study was generally successful in creating equitable income and wealth matches across racial groups, it is possible that unexpected study findings were due to some unknown artifact specific to populations recruited

from this venue. A randomized sample could provide a study population that is both equitable and perhaps more representative of the general population, better ensuring that any unexpected findings are indeed more representative of the population as a whole.

Second, the eligibility criteria for this study did not exclude respondents who have mental illness. In administering the survey and conducting the focus groups, a few respondents mentioned diagnoses of bipolar disorder or schizophrenia, and it was observed that some of these participants produced responses that proved to be outliers on the stress scales in comparison to others in the study. Though participants with depression and anxiety should be included in future stress research because of the close relationship between these conditions, excluding or at the least documenting and examining the data of those with other forms of mental illness could reduce the potential for outliers.

Third, findings from the qualitative phase of the study were weakened when the number of focus groups was reduced from two focus groups per population group to one focus group per population group. Having two focus groups for each racial/SES group would have helped to identify consistencies and differences within these groups, such as whether certain themes were consistently mentioned or left out. This would have especially strengthened triangulation of the data. Additional focus groups within each racial/SES group were simply not possible for this study, given rates of participant involvement, but future research projects should more aggressively address this problem by either increasing sample size and/or offering more substantial compensation for participants.

Fourth, it is likely that sample size also limited findings for the health disparities portion of the study. Though the sample size used for this study provided adequate power to detect statistically significant differences between groups for the dependent variables in question, it

may still have been too small to detect some important population-based differences. For example, eleven stress-related illnesses were included in the study because they have been cited in the literature as a source of racial or SES disparities in health outcomes. However, it is likely that several of the illnesses did not have sufficient numbers to detect statistically significant differences in means. A larger sample size could provide a better opportunity to detect more delicate differences between population groups.

Finally, the cross-sectional design of the study did not allow for causal relationships to be explored between variables. A longitudinal study could better document the timeline assumed by the a priori theory for this study and examine the directional relationship between stress exposures, perceived stress, and stress-related illness.

Future Directions

Future research on the subject of stress and health disparities could benefit from additional tools to detect individual discrimination, institutional discrimination, and the stress of discrimination. When this study was originally conceived, scales that were available to measure discrimination often focused exclusively on a specific population group (e.g., African Americans) and therefore could not have been administered to both Black and White populations. In the interim, more scales have become available, providing an opportunity for individual discrimination measures to be included in the mix (Sellers & Shelton, 2003). Measuring individual racism across racial and SES groups could help clarify the presence or absence of perceived racism and how it is related to perceived stress for different population groups.

Although a variety of stress scales were used for this study, beyond a few random items, none were useful in truly capturing the stresses of institutionalized discrimination discussed in chapter two. Some scales have been developed to measure specific outcomes of institutionalized discrimination, such as environmental stress from deteriorating neighborhoods (Schulz *et al.*, 2000). The development of a scale that could build on this progress and capture stress from multiple sources of institutionalized discrimination, such as education, employment, housing, and transportation, could be a significant advancement to the field, especially if it could be used to compare across racial and SES population groups. A scale that captures exposure to institutionalized discrimination could provide opportunities for comparisons between individual and institutionalized discrimination and their separate and combined effects on perceived stress and stress-related illness.

It may also be necessary to develop an alternate scale to capture perceived stress in a manner that would be sensitive to the experiences of discrimination. If life events, daily hassles, and traumatic events inventories are unlikely to consistently include items specific to the experiences of individual discrimination, a global perceived stress scale should be able to capture the overall stress produced by such events. However, the PSS used for this study was designed to capture three components central to the stress experience: the degree to which respondents find their lives unpredictable, uncontrollable, and overloading (Cohen *et al.*, 1983). Taking the example of racial discrimination, it is possible that many African Americans could feel that racial discrimination is in fact predictable, that it is controllable by restricting activities or interactions, and that it is not overloading, yet still experience stress, resulting in a form of perceived stress that has not yet been captured. The definition of stress cited in chapter one referred to environmental demands that tax or exceed one's adaptive capacity. Perhaps the stress

of racial discrimination is less a result of unpredictable, uncontrollable, or overloading experiences and more a result of experiences that persistently require adaptation by modifying activities or interactions such as driving habits, shopping habits, speech patterns, styles of dress, hairstyles, food choices, music choices, etc. to accommodate the preferences or expectations of the privileged majority culture. Developing a stress scale that could measure overall perceptions of stress yet be sensitive to challenges to adaptive capacity could perhaps better capture the perceived stress of discrimination.

Future research could also benefit from comparing coping mechanisms between racial and SES groups. Many researchers have proposed that a lack of racial differences in stress scale outcomes could be due to racial variations in coping mechanisms. Comparisons between racial/SES groups could verify or dispute these theories and clarify which coping techniques are most effective for each group. Explorations of potential differences in expectations between racial/SES groups could also shed light on coping practices. For example, Blacks living in the historical Black Belt may have low expectations of equitable racial practices. As overt racism diminishes over time, expectations could be worse than actual outcomes, resulting in less stress. Conversely, Whites living in the historical Black Belt may still have expectations of racial privilege. As structural supports for racism decline over time, expected privileges could diminish, resulting in increased stress. Studies that carefully compare individual and institutional sources of discrimination, perceived stress, expectations, and coping mechanisms could further explore this possibility.

More research is needed to explore the relationship between individual and institutionalized discrimination as it relates to perceived stress and stress-related illness. Is it in fact necessary that institutionalized discrimination be perceived as discrimination to produce a

stress response? Do those who perceive more individual discrimination also perceive more, or have a higher sensitivity to, institutionalized discrimination?

More attention is also needed to continue to explore the relationship between racial and class discrimination. Are structural forms of racial discrimination replaced by structural forms of socioeconomic discrimination over time? How much do structural forms of racial discrimination vary by SES? Is class discrimination perceived to be as relevant to overall perceived stress as racial discrimination?

Finally, future research should strive to consistently include measures of SES whenever exploring the topics of population variances in stress, the stress of racism, or racial health disparities for illnesses that are stress-related. It is possible that by not including SES measures, previous studies that reported racial differences have masked the vulnerabilities of low-SES White populations and underestimated the resiliency of middle-SES Black populations.

Conclusion

In conclusion, the findings from this study indicate that racial structural inequality can still be documented and is still recognized among African Americans. However, aside from racial discrimination in the workplace for middle-class African-American men, race itself was not found to have an influence on general stress exposure checklists, global perceived stress, the stress appraisal process for important stressors, or stress-related illnesses previously known to display racial disparities for this group. It is possible that African Americans utilize a variety of coping mechanisms, such as religious participation and group identity, which neutralize the negative effects of any race-related discrimination. It is also possible that historical mechanisms

of institutionalized race discrimination have resulted in socioeconomic circumstances that make SES more relevant as a stressor for African Americans today.

Socioeconomic findings confirmed the study's a priori theory that low-SES groups are exposed to more stressors and have higher levels of perceived stress. Qualitative data suggest that these differential exposures and stress appraisals are a result of structural discrimination which limits social and financial safety net resources for low-SES populations through mechanisms such as social closure and relative deprivation.

Higher perceived stress was further found to contribute to higher stress-related illness burden, especially as it relates to hypertension, depression, and anxiety. Additional research is needed to further explore the relationship between stress, discrimination, and illness, utilizing a greater sample size and more sensitive survey instruments.

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APPENDIX A. CONSENT FORM

Understanding Stress Consent Form

Title of Study: Chronic Stress and Health Disparities: Investigating the Roles of Race and Class Discrimination

Project Director: Holly Avey, M.P.H., Department of Health Promotion and Behavior, University of Georgia. Phone: 404-616-7561.

Project Advisor: David DeJoy, Ph.D., Department of Health Promotion and Behavior, University of Georgia. Phone: 706-542-4368.

What is this study about?

I am being asked to volunteer for a research study with the University of Georgia.
The study is about the kinds of things that cause people stress.

Why is this study being done?

This study will help researchers understand what causes my stress.
This will help researchers understand why different groups of people might get sick from stress.
This will help researchers improve care for people who are sick from stress.
The results of this study will be published so others can learn about the findings.

What is involved in the study?

There are two parts to this study.

Part One

If I help with this study, I will be asked to do these things today:

- Answer questions about my age, gender, education, and health
- Answer questions about whether I am married, employed, or have children
- Answer questions about my race
- Answer questions about my income
- Answer questions about my stress

This part will take about 20-30 minutes.

Part Two

I might also be asked to volunteer for Part Two of the study.

Part Two is made up of three stages:

1) Orientation meeting

- Attend an orientation meeting to learn more about Part Two of the study.

The orientation meeting will take about 30 minutes.

It will happen on another day.

2) Take pictures

- Use a disposable camera to take at least 6 pictures of things, people, or events that cause me stress.
- Give this camera to one of the researchers so they can develop the pictures.
- Meet with one of the researchers to look at my pictures after they are developed and choose one or two that I will discuss in a group.

This will be on my own time.

3) Focus group meeting

- Attend a meeting with other people to talk about the things that cause me stress. This part will take 3-4 hours with a free meal at the end.

The focus group meeting will take place at a location near where I live.

The researchers will show the pictures I select to the group and ask me to talk about my pictures.

The researchers will also ask everyone more questions about the kinds of things that cause them stress. They will tape record the meeting and write down what everyone says.

What are the risks of the study?

I may be uncomfortable with some of the questions.

If I am upset after answering the questions and would like to talk to someone, the researchers can refer me to psychological services in my community.

I will be responsible for any fees for psychological services.

Are there benefits to taking part in the study?

Answering the questions may make me feel better.

It may feel good to talk about my problems,

or to learn that other people have the same kinds of problems and I am not alone.

Choices:

I know that it is my choice to take part in the study.

I can agree to take part in Part One of the study but not in Part Two.

There will be no problems if I quit the study at any time.

I can ask to have all of the facts about me given back to me.

I can also ask to have all of the materials and information about me taken from the files or destroyed.

Will my answers be private?

If I choose to volunteer for this project, my answers will be kept private.

For Part One I will be given a code number.

This number will be used on all of the forms I fill out.

My answers may be combined with other people's answers and shared with others.

They will only see the group answers.

For Part Two, I will choose a code name.
The pictures I take may be shared with others.
If I take any pictures of other people
these pictures will only be shared with others
if I have gotten their permission first
or if their images are blurred so that they cannot be identified.

Will my answers be private?

What I say in the group may be shared with others.
But they will not know who said these things or who took the pictures.
They will only see my code name.
The tapes from the meeting, the pictures that I take, and any materials with my name on them
will be stored in a locked cabinet.
The tapes and other materials will be destroyed after ten years, by January 2016.

If it is needed to protect my welfare,
some facts about me might be shared with others without my written consent.
Examples might be if I were hurt and I needed to see a doctor, or if required by law.

What are the costs? What will I get?

If I choose to take part in Part One,
I will get \$20 for my time.
My name will also be entered in a raffle
to win a gift certificate for a local spa, restaurant, movie theater, or grocery store.

If I choose to take part in Part Two,
I will get \$20 for my time.
The researchers will help me pay for transportation.
They will give me two MARTA tokens or validate my parking
on the days I come to the meetings.
They can not help me pay for transportation
if I do not come to the meeting by MARTA or park a car in the parking garage.

I will also get a free meal and drinks at the end of the second meeting.

What if I have questions or problems?

If I would like more information about this study,
I can call or write the study director at any time.

Name: Holly Avey

Phone number: 404-616-7561

Mailing address: Grady Health System, Office of Health Promotion, 80 Jesse Hill Jr. Dr. S.E.,
P.O. Box 26101, Atlanta, GA 30303

E-mail address: hollyavey@earthlink.net

Ms. Avey is a student at the University of Georgia.
Her teacher for this project is David DeJoy, Ph.D.
I can call Ms. Avey's teacher at 706-542-4368.

Follow-Up

If I would like to read a report or the typed notes from the meeting,
I can ask Ms. Avey for a copy. This may take several weeks.

If I sign below I agree to volunteer for Part One of this study.
I have been given a copy of this form.

Volunteer

Date

Project Director

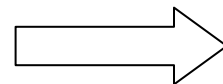
Date

If I am selected, I agree to take part in Part Two of this study.

Circle yes or no: YES / NO.

Sign your initials here _____.

If yes, please provide contact information on the next page.



Additional questions or problems regarding your rights as a research participant should be addressed to The
Chairperson, Institutional Review Board, University of Georgia, 612 Boyd Graduate Studies Research Center,
Athens, Georgia 30602-7411; Telephone (706) 542-3199; E-Mail Address IRB@uga.edu

I understand that the researchers will use this page
to link my survey information
with my name and focus group pictures.
Only the researchers will know my private survey answers.
My answers will still be combined with other people's answers
before they are shared with the public.
Only my code name will be shown with my pictures.

If I do not want my name connected to my survey answers,
I will tear this page off and take it with me.

I can be contacted for Part Two of the study at the following number and address:

Phone #1: _____

Phone #2: _____

Complete Mailing Address:

For researcher use only. Do not write below this line.

AA EA

LSE M/USE

PSS _____

APPENDIX B. QUANTITATIVE SURVEY INSTRUMENT

Section A – Tell Us About You

1. How old are you? _____

2. What is your gender?
☐ Female
☐ Male

3. What is the highest grade or year of school that you completed?
☐ Never attended / kindergarten only
☐ Grade 1-8 (elementary / junior high school)
☐ Grade 9-11 (some high school)
☐ High school graduate or GED
☐ 1-3 years of college
☐ 4 or more years of college

4. How do you describe yourself? (Check all that apply.)
☐ American Indian or Alaska Native
☐ Asian
☐ Black or African American
☐ Hispanic or Latino
☐ Native Hawaiian or Other Pacific Islander
☐ White
☐ Other _____

5. Where did you grow up? _____
City/State or Country (if not U.S.)

Section A – Tell Us About You

6. In the past twelve months, have you been married or in a relationship with a partner?
- ☐ Yes
- ☐ No
7. In the past twelve months, have you been employed?
- ☐ Yes
- ☐ No
8. Do you or your partner have children?
- ☐ Yes
- ☐ No

Section B – Tell Us About Your Health

Has a doctor or other health professional ever told you that you have:

8. Asthma or chronic bronchitis

☐ Yes

☐ No

→ If yes, do you still have asthma or chronic bronchitis?

☐ Yes

☐ No

9. Cancer or a malignancy of any kind

☐ Yes

☐ No

→ If yes, do you still have cancer or a malignancy of any kind?

☐ Yes

☐ No

10. Depression

☐ Yes

☐ No

→ If yes, do you still have depression?

☐ Yes

☐ No

11. Anxiety

☐ Yes

☐ No

→ If yes, do you still have anxiety?

☐ Yes

☐ No

Section C – Tell Us About Your Living Arrangements and Family Income

1. How many people lived in your home in 2004? _____
2. How many adults? _____
3. How many children under the age of 18? _____
4. What was the total combined income of all members of this family in 2004? \$ _____
5. Do you (or anyone else in your family living there) own the (home / apartment), pay rent, or what?
 - ☐ Own
 - ☐ Rent
 - ☐ Other _____
6. If owned, could you tell me what the present value of your house / apartment is – how much would it bring if you sold it today? \$ _____

Please fill in the blank with the amount, if you know.

If you do not know for sure, check one of the boxes below for a general range.

- ☐ \$0-\$24,999
- ☐ \$25,000-\$49,999
- ☐ \$50,000-\$74,999
- ☐ \$75,000-\$99,999
- ☐ \$100,000-\$149,999
- ☐ \$150,000 or more

Section C – Tell Us About Your Living Arrangements and Family Income

7. Do you have a mortgage on this property?

- ☐ Yes
- ☐ No

8. If yes, about how much is the remaining principal on this mortgage?
(How much do you still owe?)

\$ _____

Please fill in the blank with the amount, if you know.



If you do not know for sure, check one of the boxes below
for a general range.

- ☐ \$0-\$4,999
- ☐ \$5,000-\$9,999
- ☐ \$10,000-\$14,999
- ☐ \$15,000-\$19,999
- ☐ \$20,000-\$24,999
- ☐ \$25,000-\$49,999
- ☐ \$50,000-\$74,999
- ☐ \$75,000-\$99,999
- ☐ \$100,000-\$149,999
- ☐ \$150,000 or more

Section D – Tell Us About Events in the Past Twelve Months

How many times, in the past twelve months, did each of the following happen to you?

1.	Death of a spouse / mate	_____
2.	Death of close family member	_____
3.	Major injury/illness to self	_____
4.	Detention in jail or other institution	_____
5.	Major injury/illness to close family member	_____
6.	Foreclosure on loan/mortgage	_____
7.	Divorce	_____
8.	Being a victim of crime	_____
9.	Being the victim of police brutality	_____
10.	Infidelity	_____
11.	Experiencing domestic violence/sexual abuse	_____
12.	Separation or reconciliation with spouse/mate	_____
13.	Being fired/laid-off/unemployed	_____
14.	Experiencing financial problems/difficulties	_____
15.	Death of close friend	_____
16.	Surviving a disaster	_____
17.	Becoming a single parent	_____
18.	Assuming responsibility for sick or elderly loved one	_____
19.	Loss of or major reduction in health insurance/benefits	_____
20.	Self/close family member being arrested for violating the law	_____
21.	Major disagreement over child support/custody/visitation	_____
22.	Experiencing/involved in auto accident	_____
23.	Being disciplined at work/demoted	_____

Section D – Tell Us About Events in the Past Twelve Months

How many times, in the past twelve months, did each of the following happen to you?

- | | | |
|-----|--|-------|
| 24. | Dealing with unwanted pregnancy | _____ |
| 25. | Adult child moving in with parent or parent moving in with adult child | _____ |
| 26. | Child develops behavior or learning problem | _____ |
| 27. | Experiencing employment discrimination/sexual harassment | _____ |
| 28. | Attempting to modify addictive behavior of self | _____ |
| 29. | Discovering/attempting to modify addictive behavior of close family member | _____ |
| 30. | Employer reorganization/downsizing | _____ |
| 31. | Dealing with infertility/miscarriage | _____ |
| 32. | Getting married/remarried | _____ |
| 33. | Changing employers/careers | _____ |
| 34. | Failure to obtain/qualify for a mortgage | _____ |
| 35. | Pregnancy of self/spouse/mate | _____ |
| 36. | Experiencing discrimination/harassment outside the workplace | _____ |
| 37. | Release from jail | _____ |
| 38. | Spouse/mate begins/ceases work outside the home | _____ |
| 39. | Major disagreement with boss/co-worker | _____ |
| 40. | Change in residence | _____ |
| 41. | Finding appropriate child care/day care | _____ |
| 42. | Experiencing a large unexpected monetary gain | _____ |
| 43. | Changing positions (transfer, promotion) | _____ |
| 44. | Gaining a new family member | _____ |
| 45. | Changing work responsibilities | _____ |

Section D – Tell Us About Events in the Past Twelve Months

How many times, in the past twelve months, did each of the following happen to you?

46. Child leaving home _____

47. Obtaining a home mortgage _____

48. Obtaining a major loan other than home mortgage _____

49. Retirement _____

50. Beginning/ceasing formal education _____

51. Receiving a ticket for violating the law _____

Section E – Tell Us About Hassles in the Past Month

Hassles can be anything from little annoying things to big pressures or problems. They can happen a few times or many times.

On the following pages are a number of ways in which a person can feel hassled.

How many times, in the past month, were you hassled by each of the following things?

- | | | |
|-----|--|-------|
| 1. | Misplacing or losing things | _____ |
| 2. | Troublesome neighbors | _____ |
| 3. | Social obligations | _____ |
| 4. | Inconsiderate smokers | _____ |
| 5. | Health of a family member | _____ |
| 6. | Not enough money for clothing | _____ |
| 7. | Not enough money for housing | _____ |
| 8. | Concerns about owing money | _____ |
| 9. | Concerns about getting credit | _____ |
| 10. | Concerns about money for emergencies | _____ |
| 11. | Someone owes you money | _____ |
| 12. | Financial responsibility for someone who doesn't live with you | _____ |
| 13. | Cutting down on electricity, water, etc. | _____ |
| 14. | Smoking too much | _____ |
| 15. | Use of alcohol | _____ |
| 16. | Personal use of drugs | _____ |
| 17. | Too many responsibilities | _____ |
| 18. | Decisions about having children | _____ |
| 19. | Non-family members living in your house | _____ |
| 20. | Care for pet | _____ |

Section E – Tell Us About Hassles in the Past Month

How many times, in the past month, were you hassled by each of the following things?

21.	Planning meals	_____
22.	Problems getting along with fellow workers	_____
23.	Customers or clients give you a hard time	_____
24.	Home maintenance (inside)	_____
25.	Concerns about job security	_____
26.	Concerns about retirement	_____
27.	Laid-off or out of work	_____
28.	Don't like current work duties	_____
29.	Don't like fellow workers	_____
30.	Not enough money for basic necessities	_____
31.	Not enough money for food	_____
32.	Too many interruptions	_____
33.	Unexpected company	_____
34.	Too much time on hands	_____
35.	Having to wait	_____
36.	Concerns about accidents	_____
37.	Not enough money for health care	_____
38.	Financial security	_____
39.	Silly practical mistakes	_____
40.	Physical illness	_____
41.	Side effects of medication	_____
42.	Concerns about medical treatment	_____
43.	Difficulties with getting pregnant	_____

Section E – Tell Us About Hassles in the Past Month

How many times, in the past month, were you hassled by each of the following things?

- | | | |
|-----|---|-------|
| 44. | Sexual problems that result from physical problems | _____ |
| 45. | Sexual problems other than those resulting from physical problems | _____ |
| 46. | Concerns about health in general | _____ |
| 47. | Friends or relatives too far away | _____ |
| 48. | Preparing meals | _____ |
| 49. | Auto maintenance | _____ |
| 50. | Filling out forms | _____ |
| 51. | Neighborhood deterioration | _____ |
| 52. | Financing children's education | _____ |
| 53. | Problems with employees | _____ |
| 54. | Problems on job due to being a woman or man | _____ |
| 55. | Declining physical abilities | _____ |
| 56. | Concerns about bodily functions | _____ |
| 57. | Rising prices of common goods | _____ |
| 58. | Not getting enough rest | _____ |
| 59. | Not getting enough sleep | _____ |
| 60. | Problems with aging parents | _____ |
| 61. | Problems with your children | _____ |
| 62. | Problems with persons younger than yourself | _____ |
| 63. | Problems with your lover | _____ |
| 64. | Difficulties seeing or hearing | _____ |
| 65. | Overloaded with family responsibilities | _____ |
| 66. | Too many things to do | _____ |

Section E – Tell Us About Hassles in the Past Month

How many times, in the past month, were you hassled by each of the following things?

67.	Unchallenging work	_____
68.	Concerns about meeting high standards	_____
69.	Financial dealings with friends or acquaintances	_____
70.	Job dissatisfactions	_____
71.	Worries about decisions to change jobs	_____
72.	Trouble with reading, writing, or spelling abilities	_____
73.	Too many meetings	_____
74.	Problems with divorce or separation	_____
75.	Trouble with arithmetic skills	_____
76.	Gossip	_____
77.	Legal problems	_____
78.	Concerns about weight	_____
79.	Not enough time to do the things you need to do	_____
80.	Television	_____
81.	Menstrual (period) problems	_____
82.	The weather	_____
83.	Hassles from boss or supervisor	_____
84.	Difficulties with friends	_____
85.	Not enough time for family	_____
86.	Transportation problems	_____
87.	Not enough money for transportation	_____
88.	Not enough money for entertainment and recreation	_____
89.	Shopping	_____

Section E – Tell Us About Hassles in the Past Month

How many times, in the past month, were you hassled by each of the following things?

90. Property, investments or taxes _____

91. Not enough time for entertainment and recreation _____

92. Yardwork or outside home maintenance _____

93. Concerns about news events _____

94. Noise _____

95. Crime _____

96. Traffic _____

97. Pollution _____

Section F – Tell Us About Events in Your Lifetime

Did any of these events happen before you were 18 years old?

1. Did you ever have a major illness or accident that required you to spend a week or more in the hospital?
☐ Yes
☐ No
2. Did your parents get a divorce?
☐ Yes
☐ No
3. Did you have to do a year of school over again?
☐ Yes
☐ No
4. Did your father or mother not have a job for a long time when they wanted to be working?
☐ Yes
☐ No
5. Did something happen that scared you so much you thought about it for years after?
☐ Yes
☐ No
6. Were you ever sent away from home because you did something wrong?
☐ Yes
☐ No
7. Did either of your parents drink or use drugs so often or so regularly that it caused problems for the family?
☐ Yes
☐ No
8. Were you regularly physically abused by one of your parents?
☐ Yes
☐ No

Section F – Tell Us About Events in Your Lifetime

Did any of these events happen at any time during your life?

9. Has one of your parents died?
☐ Yes
☐ No
10. Have you ever seen something violent happen to someone or seen someone killed?
☐ Yes
☐ No
11. Have you ever been in a major fire, flood, earthquake, or other natural disaster?
☐ Yes
☐ No
12. Have you ever had a serious accident, injury, or illness that was life threatening or caused long-term disability?
☐ Yes
☐ No
13. Have you ever been either sexually abused or sexually assaulted?
☐ Yes
☐ No
14. Have you ever been divorced or ended a relationship with someone you were still in love with?
☐ Yes
☐ No
15. Has a spouse, child, or other loved one died?
☐ Yes
☐ No
16. Has one of your children ever had a near-fatal accident or life-threatening illness?
☐ Yes
☐ No

Section F – Tell Us About Events in Your Lifetime

Did any of these events happen at any time during your life?

17. Have you ever been in combat in a war, lived near a war zone, or been present during a political uprising?
☐ Yes
☐ No
18. Have you ever discovered your spouse or partner in a close relationship was unfaithful?
☐ Yes
☐ No
19. Have you ever been physically abused by your current or a previous spouse or partner?
☐ Yes
☐ No
20. Has your spouse, partner, or child been addicted to alcohol or drugs?
☐ Yes
☐ No

Section G – Tell Us About Your Stress in the Last Month

The questions in this scale ask you about your feelings and thoughts during the last month.

In each case, you will be asked to check how often you felt or thought a certain way.

Although some of the questions are similar, there are differences between them and you should treat each one as a separate question.

The best approach is to answer each question fairly quickly. That is, do not try to count up the number of times you felt a particular way, but rather check the option that seems like a reasonable estimate.

For each question, choose from the following alternatives:

- ☐ never
- ☐ almost never
- ☐ sometimes
- ☐ fairly often
- ☐ very often

1. In the last month, how often have you been upset because of something that happened unexpectedly?
 - ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often

2. In the last month, how often have you felt that you were unable to control the important things in your life?
 - ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often

Section G – Tell Us About Your Stress in the Last Month

3. In the last month, how often have you felt nervous and stressed?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often
4. In the last month, how often have you felt confident about your ability to handle your personal problems?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often
5. In the last month, how often have you felt that things were going your way?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often
6. In the last month, how often have you found that you could not cope with all the things that you had to do?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often

Section G – Tell Us About Your Stress in the Last Month

7. In the last month, how often have you been able to control irritations in your life?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often
8. In the last month, how often have you felt that you were on top of things?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often
9. In the last month, how often have you been angered because of things that happened that were outside of your control?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often
10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?
- ☐ never
 - ☐ almost never
 - ☐ sometimes
 - ☐ fairly often
 - ☐ very often

APPENDIX C. LIVABLE WAGE STATISTICS

Table C.1. How much does it cost to live in Atlanta?

Monthly Costs	1 adult, 2 children *	Single Person
Housing	\$878	\$720
Child care	\$301	0
Food	\$345	\$168
Transportation	\$78	\$265
Health Care	\$313	\$69
Miscellaneous	\$241	\$122

Table C.2. Self-sufficiency wage

Hourly	\$12.68	\$9.71
Annual Wage	\$26,779	\$20,518

Source: <http://atlantalivingwage.org>

APPENDIX D. SAMPLE INDUCTIVE CODING AND ANALYSIS FROM PILOT DATA

Table D.1. Categories and themes.

Categories created from codes	Themes created from condensing the categories
Medical / Health Roles/responsibilities Emotions Lack of control Race Service at Grady Want / Need from Grady Social services Pharmacy	Medical
Relationship Emotions Shared experiences / comparisons Race	Relationship
Finances Retirement Race SES Social services	Finances
Roles/responsibilities	Inter-relatedness of medical / relationship / finance stress
Coping techniques Pharmacy	Coping
Consequences Caregiver / health of others	Consequences

APPENDIX E. SAMPLE NARRATIVE ANALYSIS OF PILOT DATA

Table E.1. Lady's story about relationships. (Co-narrator: Chuckles.)

Abstract	My home situation. The person that I'm living with, he just doesn't understand the problem that I'm going through with my health. And he's always unhappy with everything that's done. It's just always some problem with him.
Orientation	Before I met this gentleman, my husband died. So I took about 3 months before we started living in together. I had my own place and then they move me into his, which he own a home. And then, with the money and things, out of all the years I worked and put in to there, that's what hurts so much. Cause I done put all my time and money into it and helped kept this house up, bought new things for this house and did all this. We've been together for about 18 years. We say husband because after 18 years you ain't got to have the papers anymore. I try to do things. I paint. I get this little paint with numbers, me and my granddaughter, we do that. I have a dog. I go out and see my dog, I have cats, fishes. I have things to try. The kids was there before him. And it's like this right here. I will love my family. I will love my sisters whether they come see me or call me. I love my children. And I love my granddaughter.
Complication	We've talked about things that happened in the past, he always talk about the things in the past and about my kids is no good and people telling him things which I know is untrue. And always accusing my granddaughter and me of stealing. Me of taking all the dishes and everything out of the house or tearing up everything. It was okay. But then, just put it like this, all hell broke loose. When I was working I was making five, six hundred dollars a week. Everything was fine. If he'd a just said then, "Okay this gotta be done this way," I'd a got a place for us. But time it was that I hurt myself 2 years ago, I wasn't able to work anymore, that's when everything started. Everything is just went down hill. But then when I tell him I'm not going anywhere, if he give me back my money that I put into this place, I would go. Take me to court. But you don't want to just argue and he just say, "Why don't you go to another room?" I walk to another room, he's in that room. I get in the car and go somewhere. I go outside. I get my granddaughter and go with me. "Oh you grab your granddaughter. You do this right here. That's all you care about. You don't love me. You just love your children." I tell him I love him and God loves you too. "He don't love anybody. He don't love nothing." HA: What causes relationship stress? CHUCKLES: Perhaps not complying with their desires. LADY: One side is always wanting to be controlling. One side is always controlling and always right. Never will say they're sorry when they do something wrong and they know they wrong. CHUCKLES: I think part of the reason is losing your own self-control. And leaving that job up to somebody else. You give up that right, and then you want to reverse it. I think we start in a relationship, that's one of the reasons why you start in a relationship, because you see, the two of you are balancing, getting along. And all of a sudden, like you said, fear. That's when the snake will crawl in and start disintegrating the whole thing. And then you feel like you're gonna lose. Now that's my personal opinion.
Evaluation	I need to be able where I could get a place for me and my granddaughter. I can't understand why a person can be so evil. He does not care. Just long as his, what he wants. And he wants me to just serve him. You could be sitting there, and then all of a sudden, "Well, where is this?" I'm like, why can't he just go look for something? Just look for something? Just looking for something? But long as I'm comfortable, he have to disturb me. He doesn't even want me to talk to my kids on the phone. [Begins to sob audibly.] And he wants me to just stop loving my family. I can't do that. My family was there before he was. He was a only child. So he don't know. Even his own children. Do you understand me? His own children won't come around. You have this person that knows everything, but doesn't know anything, you know what I mean? He could quote the Bible back to back, but so can the devil. And so I say I'm fighting with the devil. At 81 years old he ought to thank God for being here. And he has prostate cancer, and so he ought to be thanking God for being alive. When he was sick I quit my job to take care of him, and now that I'm sick it's always, you know. I have to do everything for myself. Makes me angry. Makes me very angry. CHUCKLES: To me, it breaks down to – Once, you made the way. Now, you're in the way. LADY: Hm. CHUCKLES: We talked about being able to push the right buttons. Sounds like he found your buttons, you know. LADY: Well, okay, you're right. He finds them

	<p>sometimes. But it's not, I say 40% of the time he can find those buttons. 40% of the time. Cause 60% of the time I'm in control. 40% of the time he can find those buttons to push. 60%, I got control. I got most of the control, but he can find those buttons. I give him about 40, 35 to 40% of the time he can find those buttons to push. CHUCKLES: When I listen to Lady I think to myself, what is he really doing? He's pushing his stress off on you and making you responsible for his stress. To me. Now that's just my opinion. Because that's the way my man was doing me. And I'd much rather. Well I'm not gonna go to no shelter or nothing like that. I'll pawn everything I got first. In a sense. I don't know. I'm not in her situation. I think this is part of the stress, at the same time, because you don't see a light at the end of the tunnel. You don't even know if you'd recognize the tunnel if you saw it, in a sense. I feel like my stress isn't half as bad as yours [looking at Lady] in a sense. LADY: Turning your life over to someone and then they just shred it. They say they gonna do these things, it's alright . . . just turning your life over to someone and they say, "You don't have to worry. It's gonna be alright." Until that time come, and it's just like a ticking bomb and then all of a sudden you waiting for the other shoe to fall. All the time. And that falls with fear. They comfort you and say, "Well it's gonna be alright. Don't worry. It's gonna be alright." And then the next thing you know . . . You go to sleep, everything okay, the next morning you wake up and like you're like, what the hell happened? Excuse my language. I'm serious. You went to bed, you slept in his arms, and everything was fine. And see basically, with my situation, my relationship is that . . . my husband has prostate cancer. And he can't perform sexually. And I say that frustrates him. And he takes it out me because, you know, it's not my fault. That's basically one other thing that I didn't put into that. And he doesn't realize that that's not all that a relationship is. If he just walked up and just hugged me and touched me and say, "I love you. I care." It . . . It's just that I would like that once just to be where he does that. But he don't say that word. He just doesn't say it. Just take me. Just hold me, sometime.</p>
Result	<p>When I have money I have to try to replace those things, which I don't tear up, just try to keep peace for now. But that still doesn't work. It's just constantly [pauses, starts to cry]. It's tearing me apart. And I get tired of getting up, cooking all the time. Standing when I can't stand. When I'm half falling down all the time. That's not helping my problem, my medical problem. And when I feel bad and I be hurtin so bad that I just can't get out of bed to get to the bathroom. And all he wants to do is breakfast. And I'm like damn breakfast! If you want it today, you're gonna get it yourself. I'm just not gonna do it anymore. I just quit. I just stopped. And that's when he start thinking that I was thinking more of my granddaughter. But it's not that. This pain in my back, this is not something that I made up. And when I get real stressed out I just fall on my knees, whether he's there or not, and pray. And he leaves. And that's when I know I'm beating the devil. But sometimes it gets where you get crying and you get angry and you go to spewing out words. But I try not to. But when it get to a certain point, I could take it and take it and take it, and then all of a sudden [snaps fingers] I go off. I don't mean to. I don't want to. But it happens.</p>
Coda	<p>That's basically my stress there. That's basically my stress. And not being able to take care of myself now. It's hard. [sobs] That's just what my life is like. So that's basically it.</p>

Table E.2. Lady's story about finances. (Co-narrator: Rich.)

Abstract	My granddaughter is [living with my husband and I] and I don't have no means of getting a place for [my granddaughter and I] to be right now. For us to live at.
Orientation	[My granddaughter]'s seventeen. She's JROTC. She won, they won three third place awards Saturday and she has three stripes on each shoulder with a star. She's got As and Bs in school. She just joined the church, she was baptized. She feel better about herself. And she is doing good. She's named after me and then she is, [lowers her voice] she looks like me too, she thinks she's gorgeous. She thinks she's God's gift to men [laughs]. But she is gorgeous. She wants to go to DeVry. She calls me her beautiful angel. That's [smiles with eyes closed]. No matter how I look, "Hi you beautiful angel." She is just sweet. That's what keeps me going. That keeps me going. And that's what I need. Someone around that's like she is. Because she is an angel. She's an angel from God.
Complication	I need to be able where I could get a place for me and my granddaughter because I had got her out of foster care one time and I'm not going to throw her back out in the street. I'm not gonna throw her out there to someone and put her somewhere. I did it before. I left her because she was doing good because I was sick. The lady said that she was having sex and was pregnant and all this, and then I went and got her back. And then when I took her to the doctor she'd never had sex and all that. No, I didn't see none of this coming. None of this coming. This lady took and brought her to us in the middle of the night on the side of the street in the dark. In the dark, she brought her to us. She was gonna be there a weekend but then she said she wanted her to, she had to get out. Even whether she had sex or not. So the next day, I told [my husband] I said, "Well I'm going on and get her clothes." "Okay." If he had never agreed for her to come back, I never woulda did that. But to agree and then all of a sudden it just [slaps hands together]. But I didn't see none of this other stuff coming. I can't find the right place at the right price for me and my granddaughter. If I could find the place for me and my granddaughter, I would do it. If I could, and was able, to find a reasonable place, with the little money that social security give me, and the little check she gets, by the time we find something in the market now, you would have no food, you would have no light or no gas. Most of the places now cost you six, seven hundred dollars a month. I get \$532, she get \$148. And they give us \$92 worth of food stamps. How can you live off that?
Evaluation	That is very hard. And I pay, I take and I pay for the room she in, \$180 a month, and then pay light, and gas, and water bill there, and buy the grocery for us to eat, and he eats part of it too. So you see what I'm saying? How that hurts? It hurts. It really hurts. How is that hurting me? Because she would suffer. We would suffer. She would suffer. I would suffer. She wouldn't have enough clothes, food, wouldn't have heat. RICH: If [your husband] dies, what are you gonna do then? If financially, if you're unable to move out and to do the things that you should be able or need to do for your granddaughter . . . well I was just I guess asking, what would you do later? LADY: What would I do later? And I had a place for me and my granddaughter? Oh. [She closes her eyes. Big smile comes across her face.] It'd be the most beautiful thing.
Result	I try to make sure that she has all the supplies and things that she needs for school. She needs, the things she needs. I don't care about myself.
Coda	

Table E.3. Lady's story about health. (Co-narrators: Chuckles and Rich.)

Abstract	Two years I've been coming here [to Grady]. Two years. And they haven't got anything done about my back.
Orientation	CHUCKLES: How did you get injured, may I ask? LADY: I fell. See I was working. I was a produce clerk, regular stock clerk. Lifting stuff like 50 pound and a butcher all the same. One day I went to go out to the dock to check in a truck, and fell like this and hit that. I already had a little chipped bone in the back, with a little arthritis. And then all of a sudden, got a bulging disk out of there. I don't know. Now I got tissue growing outa all kinda spots. And they don't know what they donna do with it. Fatty tissue. I done lost control mostly of, it's just my balance. I'm losing my balance. And this leg right here, it's just really, just there. Now I have bulging disk, okay? Now I got mass of fatty tissue growing round my spine. And that's cutting off my oxygen. I don't have reflexes in this leg. All I want them to do is just try to do something.
Complication	When you tell them about [about the loss of balance], and they send you to these clinics, and the worst thing to make you angry about that, it takes you 4 months to even get to a clinic. They get appointments, they gave me appointments to go to the pain clinic, I took them up there, they never did see me. Never did see me. Never did. And they still keep sending appointments to places. And I'm not being seen. And if you do get an appointment, it's going to be another year before they reply. And it's been 2 years. And nothing has been done. They done gave me one medication after another, and they had to take me off that because my body got immune to it and it doesn't work anymore. It takes too long in between appointments. You gotta take all these pills, then some of them doesn't work, and then they just prescribe more and more, and then they say well you can't be on too much pain for a muscle relaxant because you'll get addicted. Duh! You're not trying to get addicted, you just want the pain to go away to be able to sleep. One peaceful night. And get up one morning. One morning. Without falling down. They don't want to give me a walker. They wants me to try to walk up straight. Someone else gave me this cane to try to help me. I could be just standing there, just bam, I'm falling. So what are they gonna do, they gonna wait till I break all my bones? So that's my take on that.
Evaluation	They do not, they don't think it's serious. They don't think it's serious. They don't give . . . I don't think they take good care of you when they know that you really sick. A person can come in here and just have sneeze and they'll take care of them better than a person that what you get and you're in severe pain. they don't wanta, they just, "Well, you know. It ain't nothing we could do. We could make another appointment for this." What the heck is that? And I been going through this two and a half years. I just want something done. I want them to take care of me. Before I lose control of my whole body. The whole bottom side. It's ridiculous that they just don't, take time, it take that long to get appointments. It doesn't make sense. You shouldn't have to have appointments stretched out 4 months, 3 months, and they know that you have a problem with your back. This is the most stress. With this pain. RICH: For me, Lady, I pray for you and I feel you, I understand. But, on the other hand, for me, I've always got excellent, excellent service. I mean for me, I've always gotten excellent care. The doctors, the reason why I'm here, and for my other, we're doing preventative treatment for me. I've got great doctors and they've always gone the extra mile. I've got nothing but praises for Grady. I love this hospital. That's just me. My doctors have always gone the extra mile. We sit down for the plan that's good for me, and what works medically, and I've gotten in every clinic on time. I've just got nothing but praises for Grady. But I got a great doctor. I've had excellent doctors here. LADY: But what I'm saying, I'm not saying it's the doctors. I'm saying the appointment times in between there to get the treatment that I need to take care of me. The doctors are fine. The doctors are fine. I'm not saying. It just takes too long to get in between the appointments to see the regular doctors that you need to see to go ahead on and get this stuff done. I want them to take care of my back. If I could get my problems solved with my pain and get them to go ahead on and do what they gonna do, one would say they gonna operate, which they say they gonna have to operate anyway, if they just get this done and just show me that they done got to that point and they done all got together and made that one decision that this is what's gonna be done, and then that'd take a whole lotta stress off me. Because I know, okay, I got to have surgery. I let that go. Then I know how to deal with that. But if you keep trying to send me from one place to another, one person

	<p>saying one thing, and they sending me to another place cause that place, if they would all get together, for some reason for me, and just do that and just combine this one thing for me, and do whatever they gonna do with this back, and take care of this disk and this fatty tissue that they say is tumerous, and do that, then I'll be okay. Then I know where I have to go. Pull together and get that one key there and unlock that door and just say well okay this is what we're gonna do. That's all I'm lookin for. If I could get where I get this part, where I'm free of all this pain so much, and go to doin for myself, believe my relationship will change. And I can get out and help with the garden or rake a leaf. Then, all the rest of it will come into place. But when you can't do these things, and it seem like it's all on one person, naturally you get stressful. So if I could just get this one thing together, and everybody just get together and say what they gonna do, all the rest of my problems will be solved. HA: It also sounded like one of the sources of your stress was the amount of time between appointments. LADY: Yes, that too. That's what I'm saying if they just get together and quit stretchin out my appointments so far. That's stressful too. But like I said if they all get together and just say, I know they can look at this thing, they say well we gonna get these doctors together and have a conference. Like she was saying, I think we look at TV, we think things supposed to work like that but it doesn't. If we could get the doctors just to get a conference and look at these pictures and look at these things and say that that's what we gonna do. Or just say well we're gonna hospitalize her for a day and then all these doctors come in and do their thing instead of having to wait for appointment to appointment to appointment. And that would cut down on my stress. And all the rest of it will fall into place. I believe that strongly. That's what I believe.</p>
Result	<p>I can't get down in the tub like I wanna. Oh! That is very stressful. And you in severe pain, and you sitting there, and you crying cause you in severe pain. If they'd a did this [appointments] earlier, maybe I wouldn't a became just total disabled. But they didn't. It took this long. And I'm disabled. You have all these MRIs, all these X-rays I done taken. If you see my file and pull it up on the chart, you'd see how many MRIs I done had in the past 2 years. All the X-rays. They know what it is. They know what it is. But then, it's just, "You got to wait this long. You got this month, then you got to wait two more months, because this clinic right here, they can't get your appointment till two or 3 months or more, or 3 or 4 months." You see what I'm talking about? My regular doctor now, I see him every 4 months. Because there's nothing else he can do. He's trying to get me to all the other doctors. And it's taking that long a time. By the time I get to him, I still won't be done got to those other regular doctors. And see I got spine appointment next week. They sent me to rheumatology, okay I'm going to that. Can't never get to the pain clinic. I don't know why is that. And I done took four appointments up there, I took them personally. And then again, the doctor, that's right, say well I'm gonna try to get it done again. Right now I have one doctor saying this, one doctor saying that, one doctor saying the other, and then naturally I'm gonna be stressed.</p>
Coda	<p>It's going on 3 years. And that's too long. It's too long to be in pain like that. It's too long. That's what I had to say.</p>

APPENDIX F. FIGURE FROM SAMPLE NARRATIVE ANALYSIS OF PILOT DATA.

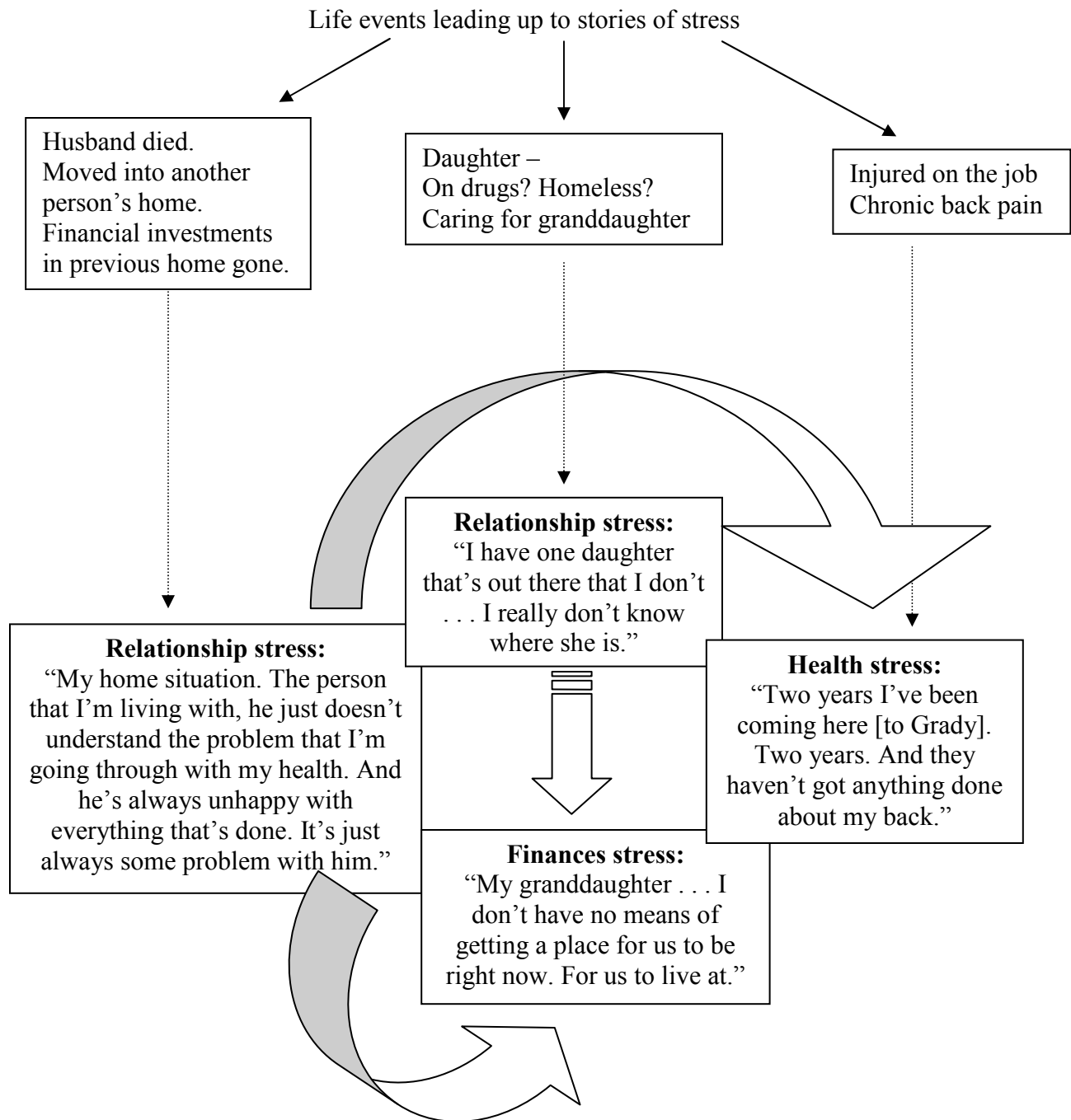


Figure F.1. Lady's stories: The importance of context in stress experiences.

APPENDIX G. SAMPLE PHOTOVOICE DATA.



Figure G.1. Photo by Cheerful

“This picture has caused me a great deal of stress . . . This is . . . the entrance to my residence . . . It would be like six or seven teenaged boys sitting on the steps. They would . . . leave their . . . liquor bottles, beer cans, on the steps and litter bags of potato chips, popcorn, whatever. It was just annoying and a nuisance. I’m a single person living there in this apartment and approaching a group like this was stressful, to say the least . . . I remember leaving my apartment . . . and there was one young man . . . sitting close to the rail . . . so when I got close enough, I asked him he could please step aside because I needed to hold on to the rail to walk down the steps. And he did move over toward the wall so I could walk past him. And then I turned around and I said, ‘You know, it’s against the rental policy for anybody sitting on the steps like this.’ I said, ‘This can be very hazardous to me if I . . . might trip and fall over somebody’ . . . So I asked would he just please leave the building. And when I turned around, as I was talking with him and looking in his face, his eyes looked glassy. I could smell like street drugs. . . . When I passed by to go back up the stairs I made sure and hurried up and locked my door, because I didn’t want him following behind me into my apartment. I looked out my peephole to see if he was still sitting there and he was and a few minutes thereafter I went back and checked my peephole and he was gone.”



Figure G.2. Photo by Baby Girl.

“Bills [are stressful]. Not being able to pay them. Not like you want to. I’m not working now, but I used to. It’s hard not having the money and not being able to pay it out . . . People call me all the time. ‘When are you going to pay this?’ ‘When are you going to pay that?’ If I had the money, you would have it, you know? That’s stressful. And then my nagging husband. He leave all the household stuff to me. He said, ‘Why you didn’t do this?’ ‘Why you didn’t do that?’ Especially when he sees all the late notices. ‘I thought you did this.’ I did what I could, you know. I’m saying I don’t have a job now. It’s hard. . . I hate depending on other people, because they hurt my feelings when they say no. I hate being told no, too. If I don’t have a job, like okay. My kids need this, my kids need that, because they’re growing up and it’s like, ‘Okay, what am I going to do?’ And I hate it . . . Used to go out, take them to the movies, have fun. It’s like now I don’t have no money. I have to ask my dad, which I hate. Or my brother, he knows I don’t have no money . . . It’s hard when you’re used to having money and spend it like you want to spend it. It’s like now I have to count every penny. If I get my check or something, it’s already spent. I’m broke. Because I’ve got to pay the phone bill, my insurance. And other than that, a couple of dollars to buy the boy a pair of shoes. For the first time I got my eyebrows arched. That’s the first time I’ve did something for myself in, I swear, a year. For a year I’ve never done nothing for myself.”



Figure G.3. Photo by Cute Girl.

“I’m stressed out about all the medication I’m taking. I’m taking about . . . 12 different pills. Some of them I’m taking twice a day. And I’m taking this medication and they can’t find out what’s wrong with me. It’s been 3 years. They said I have lupus-like symptoms, but they don’t want to call it lupus. But I’m taking all the lupus medications. And it’s really stressing me out because I’m taking all of this medicine and they can’t seem to find out what’s wrong. And I’ve been waiting for my disability for 3 years. And the first time I was denied, they was telling me that I’m able to go to work and from January of last year to now, I have been in the hospital like 12 times. Because it flares and you never know when it is going to flare up. And I stay in the hospital sometimes like 4 or 5 days. And it just really bothers me – and they tell me I can work.”



Figure G.4. Photo by Black.

“This is a picture of my mom and my daughter. The biggest stress about this picture is my mom. As you can see, she is in a wheelchair. She had a stroke about 12 years ago. And within that 12 years, I have been taking care of my mom by myself and, for the last 2 years, mom had got worser . . . She gets mad at me because she can’t get around like she used to. . . For the past 2 years, I’ve been unable to work because I have to keep a closer eye on her. And, what the stressful part about it is, when I be wanting like do stuff on my own or take a break or if I’m burnt out, I can’t get nobody to help me. My daughter, she’s 12. She help me . . . My mom be getting on her nerves so bad that sometimes she has to go outside and scream. I said, Well, I understand, but we’ve got to take care of mamma, because, see, nobody else here help us, right?’ . . . She goes to dialysis like Tuesdays, Thursdays, and Saturdays, those are the breaks we have. We have like 4 hours to do what we want to do . . . but when my mom come back home, it’s all back again. . . And then my daughter, she gets on my nerves so bad. She’s like, ‘Mamma, can I do this? Can I do that? Can I go here? Can I go there?’ She’s so used to me working and being able to do a lot of stuff with them, taking them out to the movies or to the mall or just giving them money where they can just go and buy and do the things they want to do, I can’t do that no more. I mean, I just have to stay home with mamma. That’s my biggest thing, my biggest stress of all, because it’s just like my whole life changed within the last. My whole life just changed.”

APPENDIX H. RECRUITMENT SCRIPT

Recruitment Script:

Hello. My name is Holly Avey. I'm a health educator and I teach stress management at a local hospital. I'm also a graduate student at the University of Georgia doing a research project on stress.

The research study is about the kinds of things that cause people stress. This will help researchers better understand why different groups of people might get sick from stress so that we can improve care for people who are sick from stress. The study has been reviewed by the Institutional Review Board of the University of Georgia and all participants will be given a consent form to review before they agree to the study. Participation is entirely voluntary.

There are two parts to the study. The first part is just filling out some forms to answer questions about yourself and the different kinds of stress you might have experienced.

Some people will be asked to do a second part of the study where you attend an orientation meeting, get a disposable camera to take pictures of the kinds of things that cause you stress, and then attend a focus group to talk about a couple of your pictures.

If you agree to do the first part, it should take about 20-30 minutes, you can fill the papers out today, and when you're done I will give you \$20 for your time. I will also enter your name in a raffle to win a gift certificate for a spa, restaurant, movie, or grocery store.

If you are asked to do the second part and you agree to do that too, you will be reimbursed for transportation for both meetings, and during the focus group meeting you will receive a free meal and \$20 for your time. You will also get to keep copies of any pictures that you take.

Would you be willing to help us better understand how stress affects people's health by taking part in this study?

APPENDIX I. QUALITATIVE DATA THEMES AND CATEGORIES

Table I.1. *Health-Related Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Medical	<ul style="list-style-type: none"> • Look at my skin
	Problems	<ul style="list-style-type: none"> • Doctor won't tell you what's going on • I just found out I had cancer • So many pills • My pump • Not to know when I'm going to have a seizure
Low-SES Whites	Health	<ul style="list-style-type: none"> • She has lots of health problems
		<ul style="list-style-type: none"> • Medication
Middle-SES Blacks	Health	<ul style="list-style-type: none"> • She snores
	Related*	<ul style="list-style-type: none"> • You want to live longer • I have cancer
Middle-SES Whites	Personal	<ul style="list-style-type: none"> • He's unhealthy
		<ul style="list-style-type: none"> • Lack of willpower • When you're a heavy person • A hidden form of depression • Trying to figure out what was wrong

* In vivo theme

Table I.2. *Family Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Family	<ul style="list-style-type: none"> • When my [family members] died • They do not help her • Thinking about putting her in an old folk's home • Is my children going to be taken care of
Low-SES Whites	Domestic	<ul style="list-style-type: none"> • She's always needing something • We have been estranged
Middle-SES Blacks	Family	<ul style="list-style-type: none"> • Everybody was looking to me • I wasn't around my own family • She moves things • He hasn't taken care of it yet • You're not my father
Middle-SES Whites	Family	<ul style="list-style-type: none"> • You can't just turn your back on family • Suicide • ADHD / chronic depression / bipolar

Table I.3. *Financial Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Bills	<ul style="list-style-type: none"> • Pay this and that • Phone get cut off • When you can't even buy a bubble gum
Low-SES Whites	Finance	<ul style="list-style-type: none"> • Bills just started piling • The economy is very bad here • I really can't afford to buy a car • I have no help to watch my son
Middle-SES Blacks	Finance	<ul style="list-style-type: none"> • In the hospital with no insurance • They promised us the property would be ready • My disability people
Middle-SES Whites	Money*	<ul style="list-style-type: none"> • No action to pay back

* In vivo theme

Table I.4. *Transportation Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Transportation	<ul style="list-style-type: none"> • I have to depend on MARTA ... they're always going to be late • Bus driver ... some of them have an attitude • You ain't got no car
Low-SES Whites	Trying to find a ride*	<ul style="list-style-type: none"> • I just want a car

Table I.5. *Traffic Stress*

Race/SES Group	Themes	Categories
Middle-SES Blacks	Traffic	<ul style="list-style-type: none"> • Traffic in Georgia • It's different down here • Accidents
Middle-SES Whites	Personal	<ul style="list-style-type: none"> • Don't let them in • Half an hour and that's like two miles

Table I..6. *Work Stress*

Race/SES Group	Themes	Categories
Middle-SES Blacks	Work*	<ul style="list-style-type: none"> • Constantly being fired ... being hired • Sunday night • Managers trying to fire me • How you are looked down upon • Forced to move to accomplish retirement • No other progression • Bypassing the ones that have longevity
Middle-SES Whites	Work	<ul style="list-style-type: none"> • Do perfect work • Inspections and certifications • Turnover • That knot in your stomach • It was a combination of all of the things • Way of catching anyone • I felt like I was doing the proper thing • It's hard to get people to do their jobs

Table I.7. *Social Climate Stress*

Race/SES Group	Themes	Categories
Middle-SES Blacks	Social	<ul style="list-style-type: none"> • They can't accept that here
	Climate	<ul style="list-style-type: none"> • Unionization down South is not as strong • Here they don't care • Some people will treat you like you're still in slavery

Table I.8. *Drug and Alcohol Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Drugs	<ul style="list-style-type: none"> • Being clean • Get out of my life
Low-SES Whites	Drugs &	<ul style="list-style-type: none"> • He has a problem
	Alcohol	<ul style="list-style-type: none"> • Being clean
Middle-SES Blacks	Substance	<ul style="list-style-type: none"> • Being clean
	Abuser*	
Middle-SES Whites	Family	<ul style="list-style-type: none"> • He had some drug problems

* In vivo theme

Table I.9. *Neighborhood Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	The	• The train
	Community I	• The people there
	Live In*	
Low-SES Whites	In the	• Living in a duplex is not the best thing
	neighborhood*	• The kids around there
Middle-SES Blacks	In the	• The neighbor next door
	neighborhood*	• Bad guy in the neighborhood
		• The cultural thing

* In vivo theme

Table I.10. *Depression Caused By Others Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Depression	• The house man tends to worry people
	Caused by	
	Others	

Table I.11. *Business Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Business	<ul style="list-style-type: none"> • You're going to have to be patient

Table I.12. *Maintenance Problems Stress*

Race/SES Group	Themes	Categories
Low-SES Blacks	Maintenance Problems	<ul style="list-style-type: none"> • The man still hasn't gotten it fixed

APPENDIX J. NARRATIVE ANALYSIS

Table J.1.

Group: MSB

Storyteller: Jeffrey

Inductive Themes: Drugs and Alcohol / Family / John Henryism

Abstract	The choices I made got me incarcerated. The drug use, the juvenile delinquency.
Orientation	I came from a loving home, they did everything they needed to do for me ... the social aspect was my family was middle class and we lived in a lower class neighborhood. I was the outcast because I was smart ... We were socially well off and everybody else was on welfare, getting food stamps so they resented me ... I felt I had to lower myself in order to ... [Bill: be accepted.]
Complication	Coming up in the 50s; I was bussed in 1964 out of my neighborhood to a predominantly White/Jewish school and at 8 or 9-years-old and it was a very traumatic experience. The reason I say that is because I hadn't really thought that I was any different than any other kids. There were White kids in my neighborhood ... early on in the 50s there were White families and Black families. It wasn't so segregated as it is now and there wasn't prejudice so much like we tend to think prejudice in the South. The only thing that separated us back then were economic lines. I mean there were White kids in my school and we hung out with them and we did the same thing as they did and I think they had the same problems that we had, but once it was brought to my attention that I was going to be treated by the world, because once I stepped out of my little safe neighborhood the whole situation changed and because of how it affected me, you know, being called the "N" word you're 9-years-old and going home and telling your parents and they're appalled at ... "What do you mean? We chose this new life for you to go to this better school and this is what you're having to go through?" So then everything from that point on was two steps ahead, two steps ahead. You've got to work harder and the parents were just as bad as the dog-gone teachers because they're on your ass all day long about you got to compete with these people and I think part of that is what led the rebellion.
Complication	My youngest brother died when he was 28 in 1988; my oldest son died when he was 9 in 1987. Those incidents along with the job stress led me to all that other crazy stuff along in my early childhood.
Evaluation	I have no concept of family; absolutely none because of my choices and when I got disconnected from my family.
Result	By the time I got to college; check this out, I was President of the Black Student Union, ROTC, President of Military Fraternity. Now this is after being in a gang from like Junior High School and I hit it, I

	<p>was like a schizophrenic, you know what I'm saying? I was a gangster at home and an educator during the daytime and by the time I got to college I was on every club, chess club, you name it but the people after school got so under my skin trying to lead both lifestyles that I made a choice to go with the other group and my parents were like devastated when I dropped out of school. There was no reason for me to drop out other than they were calling me a punk and a sissy. You don't need that, we make enough money selling pot and stealing cars and doing what we did.</p>
Coda	<p>I got clean 15 years ago ... I talk to my mom and dad every day ... I just can't imagine what happened to me, it just didn't make no sense</p>

Table J.2.

Group: MSB

Storyteller: Purple Hayes

Inductive Theme: Neighborhood / Drugs and Alcohol / John Henryism

Orientation	My parents really stressed education more than the other parents did. So the school I went to, we had government housing project there, we had kind of okay houses here, and we had our neighborhood, which was pretty nice.
Complication	But what would happen is that if you brought your books to school you got beat up. So my mom would say if you don't take your books to school, we are going to beat you up!
Evaluation	So I thought I'd take a chance.
Result	After like 8 months I got tired of getting my butt beat every day so I started doing sit ups, I started doing push ups, I went into the library and got me a little book on judo ... my dad he was in WWII. He was ... very politically incorrect. I made this little dummy and I'm out there in the driveway flipping it and he went, "You're Jap fighting!" But when I went back to school the very next day some guy swung at me and the next thing you know I had swung him over my shoulder and he was laying on the floor and people were, "Purple Hayes, hey Kung Fu!" ... So it got to the point that I started to enjoying fighting. So for the next year and a half I got in fights every day but I was winning these fights, not getting my butt whipped and sometimes it was three, sometimes it was five and most of the time I was winning. I was putting a hurt on people. I learned how when people are chasing you, you run up the steps and you turn around and you pick up the first guy and throw him down the steps. You'll knock the rest of them down then you go down there and stomp them in their ass.
Complication	Then I did something that was not of my character but trying to fit in with the other guys in the neighborhood. I started selling drugs ... trying to fit in.
Evaluation	Thank God I never got caught; thank God it was just pot and not anything more serious.
Result	So I kind of came to my senses and went on and finished college and kind of quit doing that and turned my life around. But it was me lowering myself just to try to fit in ... just to take my books to school every day and people knew if you messed with my books you get your butt whipped. But still trying to fit in, I kind of got into some of those habits.
Coda	One of the things that gets reinforced to me every day that I made the right decision is that about 6 to 8 months I'll get a phone call that one of those guys I grew up with they're having his funeral on Saturday. So most of the guys that I grew up with are dead, you know, or in

	prison, but most of them are dead. I've been to funerals of guys that I've known since kindergarten and you go to their funerals and you sit there and you think about all of the fun times you had together, whether it was good or bad and then you sit back and think that could have been me.
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Figure J.1. Photo by Bill Young: family

Table J.3.

Group: MSB

Storyteller: Bill Young

Inductive Theme: Family / Drugs and Alcohol

Orientation	[referring to picture] you're looking inside my bedroom ... that's all my family ... that's my mother ... the lady in the picture with the Black and White on... my daddy ... he's the one laying down ... in a small picture on there ... yeah he's in a coffin ... that's me in the middle there right up under him with the cowboy hat on
Complication	when I was born my mother fell down a flight of steps ... my daddy didn't care, he ... had gotten drunk and left Valdosta, Georgia and hitch-hiked to Florida ... he left me at birth; he left my mother
Result	I left home when I was 13-years-old... I had my own apartment at 14 and a car and I drove myself to work and I went to school. I was determined to be somebody ...
Coda	I'm your child. You left me, I didn't need you. I did this on my own.

Abstract	That's my grandson the little dude in the blue down at the bottom ...
Orientation	I wasn't a good guy when I came from the military ... I couldn't get work ... I took to the streets, I sold drugs, I trafficked cocaine ... I got two sons and ... I raised them well ... They never knew what I did; I never brought drugs into my house. I had an apartment and a house. I kept my drugs at the apartment, at my home the PoPo, the police, can't come there. You're not coming around my children ... I left my family for ten years. I did ten years in prison ... they were not allowed to come there. They didn't know where daddy was;

	daddy was gone out working because I was still taking care of them from inside.
Complication	both of my sons are in Federal prison right now for following behind me ... My oldest boy caught thirteen years, my youngest boy caught nine
Evaluation	It stresses me out, knowing that they got kids. I've never seen none of my grandchildren; I only want pictures
Result	... I'm taking care of my grandkids from here, with the property, the stuff that ... I accumulated, I'm using it now to take care of their kids because they're not able to take care of their own kids sitting in the Federal penitentiary
Coda	... I have five grandkids and my dad didn't do nothing for me ... he was not there for me ...

Orientation	... That's my brother in the little round picture up top ...
Complication	my mother is disabled, my sister is disabled, my wife is disabled, I'm disabled and my brother ... his wife left him in a financial ruin ... he's got what you call an aneurysm; and they said he was going to die ... So he's with me, he gotta come to me.
Evaluation	... everybody in this picture they always leaned on me ... what is stressing out so much now is, now that I've got them all together
Result	Now it's like, they call me daddy because they feel like I brought the whole family back together again
Coda	My daddy ... he's dead and gone and resting in his grave, I got his children; I'm taking care of them when he never took care of me

APPENDIX K. QUANTITATIVE ITEMS FOR TRIANGULATION

Health-Related Stress Theme

Life Events Items

- Major injury / illness to self
- Loss of or major reduction in health insurance / benefits

Daily Hassles Items

- Health of a family member
- Physical illness
- Side effects of medication
- Concerns about medical treatment
- Sexual problems that result from physical problems
- Concerns about health in general
- Declining physical abilities
- Concerns about bodily functions
- Not getting enough rest
- Not getting enough sleep
- Difficulties seeing or hearing
- Concerns about weight
- Menstrual (period) problems

Traumatic Events Items

- Did you ever have a major illness or accident that required you to spend a week or more in the hospital?
- Have you ever had a serious accident, injury, or illness that was life-threatening or caused long-term disability?

Family Stress Theme

Life Events Items

- Death of a spouse / mate
- Death of a close family member
- Major injury / illness to close family member
- Infidelity
- Experiencing domestic violence / sexual abuse
- Separation or reconciliation with spouse / mate
- Becoming a single parent
- Assuming responsibility for sick or elderly loved one
- Self / close family member arrested for violating the law
- Major disagreement over child support / custody / visitation
- Dealing with unwanted pregnancy
- Adult child moving in with parent or parent moving in with adult child
- Child develops behavior or learning problem

Family Stress Theme (continued)

Life Events Items (continued)

- Dealing with infertility / miscarriage
- Getting married / remarried
- Pregnancy of self / spouse / mate
- Spouse / mate begins / ceases work outside the home
- Finding appropriate child care / day care
- Gaining a new family member
- Child leaving home

Daily Hassles Items

- Decisions about having children
- Care for pet
- Planning meals
- Difficulties with getting pregnant
- Sexual problems other than those resulting from physical problems
- Friends or relatives too far away
- Preparing meals
- Problems with aging parents
- Problems with your children
- Problems with your lover
- Overloaded with family responsibilities
- Problems with divorce or separation
- Not enough time for family

Traumatic Events Items

- Did your parents get a divorce?
- Did your father or mother not have a job for a long time when they wanted to be working?
- Were you regularly physically abused by one of your parents?
- Has one of your parents died?
- Have you ever been divorced or ended a relationship with someone you were still in love with?
- Has a spouse, child, or other loved one died?
- Has one of your children ever had a near-fatal accident or life-threatening illness?
- Have you ever discovered your spouse or partner in a close relationship was unfaithful?
- Have you ever been physically abused by your current or a previous spouse or partner?

Finances Stress Theme

Life Events Items

- Foreclosure on loan / mortgage
- Experiencing financial problems / difficulties
- Loss of or major reduction in health insurance / benefits
- Failure to obtain / qualify for a mortgage

Daily Hassles Items

- Not enough money for clothing
- Not enough money for housing
- Concerns about owing money
- Concerns about getting credit
- Concerns about money for emergencies
- Someone owes you money
- Financial responsibility for someone who doesn't live with you
- Cutting down on electricity, water, etc.
- Not enough money for basic necessities
- Not enough money for food
- Not enough money for healthcare
- Financial security
- Financing children's education
- Rising prices of common goods
- Financial dealings with friends or acquaintances
- Not enough money for transportation
- Not enough money for entertainment and recreation

Transportation Stress Theme

Daily Hassles Item

- Transportation problems

Traffic Stress Theme

Daily Hassles Item

- Traffic

Work Stress Theme

Life Events Items

- Being fired / laid off / unemployed
- Being disciplined at work / demoted
- Employer reorganization / downsizing
- Changing employers / careers
- Major disagreement with boss / co-worker
- Changing positions (transfer, promotion)
- Changing work responsibilities
- Retirement

Work Stress Theme

Daily Hassles Items

- Problems getting along with fellow workers
- Customers or clients give you a hard time
- Concerns about job security
- Concerns about retirement
- Laid off or out of work
- Don't like current work duties
- Don't like fellow workers
- Problems with employees
- Unchallenging work
- Job dissatisfactions
- Worries about decisions to change jobs
- Hassles from boss or supervisor

Social Climate Stress Theme

Life Events Items

- Experiencing employment discrimination / sexual harassment
- Experiencing discrimination / harassment outside the workplace

Drugs and Alcohol Stress Theme

Life Events Items

- Attempting to modify addictive behavior of self
- Discovering / attempting to modify addictive behavior of close family member

Daily Hassles Items

- Smoking too much
- Use of alcohol
- Personal use of drugs

Traumatic Events Items

- Did either of your parents drink or use drugs so often or so regularly that it caused problems for the family?
- Has your spouse, partner, or child been addicted to alcohol or drugs?

Neighborhood Stress Theme

Life Events Item

- Being a victim of crime

Daily Hassles Items

- Troublesome neighbors
- Neighborhood deterioration
- Crime

Maintenance Stress Theme

Daily Hassles Items

- Home maintenance (inside)
- Yardwork or outside home maintenance

Table K.1. *Triangulation of Qualitative and Quantitative Data*

Theme	LSB	LSW	MSB	MSW
Health	X [2]	X [1]	X	X [2]
Life Events items	1.03 (1.77)	1.40 (4.29)	.68 (1.96)	1.36 (4.14)
Daily Hassles items	53.93 (68.48)	54.10 (64.94)	27.97 (35.71)	48.77 (58.28)
Traumatic Events items	3.31 (.78)	3.38 (.75)	3.58 (.66)	3.51 (.69)
Family	X	X	X [5]	X [2]
Life Events items	18.33 (71.24)	19.30 (54.83)	16.03 (63.53)	10.73 (44.01)
Daily Hassles items	30.60 (53.73)	37.60 (54.23)	16.14 ^a (25.37)	38.94 ^a (53.45)
Traumatic Events items	14.28 ^{bc} (1.94)	14.29 ^{de} (1.87)	15.38 ^{bd} (1.65)	15.11 ^{ce} (1.64)
Finance	X [2]	X [4]	X [1]	X
Life Events items	21.87 (75.15)	25.04 (73.61)	10.09 (46.96)	13.57 (53.45)
Daily Hassles items	78.06 ^f (123.20)	84.54 ^g (107.72)	47.20 (106.14)	34.77 ^{fg} (68.82)

^aFamily daily hassles: $F(3, 303) = 3.37, p = .02$. Significant differences between MSB & MSW groups.

^{bcd}Family traumatic events: $F(3, 306) = 7.07, p = .00$. Significant differences between ^bLSB & MSB, ^cLSB & MSW, ^dLSW & MSB, and ^eLSW & MSW groups

^{fg}Finance daily hassles: $F(3, 303) = 4.69, p = .00$. Significant differences between ^fLSB & MSW, ^gLSW & MSW group

Theme	LSB	LSW	MSB	MSW
Transportation	X [1]	X [1]		
Daily Hassles item	5.54 ^{hi} (9.48)	3.30 ^j (7.99)	1.02 ^h (2.75)	.49 ^{ij} (2.90)
Traffic			X [1]	X [1]
Daily Hassles item	4.28 (9.28)	3.86 (7.62)	5.91 (9.81)	4.33 (8.70)
Work			X	X [5]
Life Events items	2.61 (4.62)	2.62 (5.55)	3.03 (4.77)	2.31 (4.09)
Daily Hassles items	9.65 (20.27)	19.90 (38.57)	18.86 (31.03)	18.70 (38.72)
Social Climate			X [1]	
Life Events items	.15 (.56)	.46 (2.27)	.66 (1.96)	.19 (1.42)
Drugs and Alcohol	X	X [1]	X	X
Life Events items	.63 (1.85)	2.98 (8.01)	2.00 (6.59)	2.62 (10.71)
Daily Hassles items	6.24 (12.40)	7.02 (13.09)	2.39 (6.30)	3.43 (8.20)
Traumatic Events items	3.31 ^k (.82)	3.19 (.74)	3.62 ^k (.55)	3.34 (.71)

^{hi}Transportation daily hassles: $F(3, 302) = 12.00, p = .00$. Significant differences between ^hLSB & MSB, ⁱLSB & MSW, ^jLSW & MSW groups

^kDrugs and alcohol traumatic events: $F(3, 306) = 4.04, p = .01$. Significant differences between ^kLSB & MSB groups

Theme	LSB	LSW	MSB	MSW
Neighborhood	X [4]	X [1]	X [1]	
Life Events item	.43 (2.48)	.52 (2.80)	.11 (.53)	.10 (.49)
Daily Hassles items	7.29 ⁿ (14.20)	5.32 (12.98)	4.37 (10.10)	2.55 ⁿ (5.59)
Maintenance Problems	X [3]			
Daily Hassles items	6.24 (12.48)	12.13 (19.08)	4.29 (6.51)	4.28 (7.93)
Depression Caused by Others	X [1]			
Business	X [1]			

ⁿNeighborhood daily hassles: $F(3,300) = 3.19, p = .02$. Significant difference between LSB & MSW groups