A CROSS-ETHNIC EXAMINATION OF A STRESS RESISTANCE MODEL

BY

Kasaan E. Holmes

ABSTRACT

This study utilized stress resistance theory to investigate a cross-cultural comparison of the stress process, specifically investigating the impact of ego-resilience, ethnic identity and religious coping on multiple sources of stress and life quality testing a mediated moderator model. While previous research suggested that ego-resilience, ethnic identity, and religious coping served as stress-buffering variables, this study examined religious coping and ethnic identity as potential moderators. Participants completed the Ego-resilience Scale (ER89), Perceived Stress Scale (PSS), Index of Race-Related Stress-Brief Version (IRRS-B), Derogatis Stress Profile (DSS), World Health Organization Quality of Life Scale-Brief Version (WHOQOL-Bref), Multi-Ethnic Identity Measure (MEIM), and the Brief Religious Coping Measure (Brief RCOPE). Evidence for simple mediation was found. Ego-resilience predicted life quality as mediated through perceived stress across all three groups. Neither ethnic identity nor religious coping moderated the relationship between ego-resilience and life quality, although these variables had a direct impact on life quality across all three groups. Additionally, race/ethnicity differentiated the impact of specific stressors (i.e., race-related stress, emotional reaction to stress, environmental events) on life quality.

TABLE OF CONTENTS

        Stress and Ethnicity

        Race-Related Stress

        Stress Perception

        Perceived Stress and Life Quality

        Stress Resistance and Stress Buffering Models

        Ethnicity and Resilience

        Ego-resilience

        Ethnic Identity

        Religious Coping

        Cultural Stress-Buffering Models

LIST OF TABLES

Tables

CHAPTER 1

INTRODUCTION

Research over the last several decades has provided substantial evidence that stress can have both negative physical and psychological implications such as cardiovascular disease, anxiety (Sapolsky, 1998; Holsoer, 2001), and depression (Ghorbani, Krauss, Watson, LeBreton, 2008; Schwartz et al 1978). Although minorities are generally underrepresented in research, there is evidence that stress has a differential impact across ethnic groups (Karlsen & Nazroo, 2002; McCord & Freeman, 1990; Thoits, 1991; Williams, Neighbors, & Jackson, 2003). This may be in part because minorities are often more likely to be member of a lower socio-economic status (SES) (National Research Council, 2006), which may result in higher levels of exposure to chronic stressors when compared to Caucasian Americans. However, there is evidence that even after matching for SES, different racial/ethnic groups respond differently to similar stressors (Kubiak, 2005). This differentiation of response to stress groups based on racial/ethnic group membership indicates that race and ethnicity, independent of SES also affects how one responds to stress and the different protective factors that are utilized across ethnicities.

While research over the last several decades has been focused on the negative consequences of stress, a growing body of literature has examined protective factors that buffer the harmful effects of stress. *Stress-buffering* models provide evidence that psychological and social resources protect an individual from stressors (Lin & Ensel, 1989; Brennan &Moos, 1990). There is a growing body of evidence that ethnic identity and religious coping serve as protective factors (Holmes & Carter, Gunthert, *in prep.*;

Utsey, Geisbrecht, Hook, and Standard, 2008) but the majority of research on ethnic identity has been with an African American population. Hispanic Americans are now the largest minority group in the United States, and they experience many of the daily stressors that also disproportionately affect African Americans (Araujo & Borrell, 2006; Arcia, Keyes & Gallagher, 1994; Canino, Gould, Prupris, & Shaffer, 1986; Centers for Disease Control and Prevention, 1999). Thus, more research on stress and protective factors (including ethnic identity and religious coping) including Hispanic populations is warranted.

Research has found that religious coping leads to positive outcomes for Caucasian Americans, Hispanic Americans, and African Americans. However, most studies examined religious coping alone as a protective factor for one specific stressor (e.g. cancer diagnosis), so we know less about the generalizability of religious coping as a stress resistance variable for a multitude of stressors, or how it may interact with other protective factors. Thus, a more comprehensive understanding of how religious coping may work with other stress resistance variables is needed to understand how multiple protective factors may work together when faced with multiple stressors.

A recent study by Holmes & Carter found that ego-resilience was a positive predictor of life quality as mediated through perceived stress with an African American population (Holmes & Carter, Gunthert, *in prep.*). This study also examined the additive nature of ethnic identity and religious coping above and beyond ego-resilience. Contrary to the author's hypotheses, neither ethnic identity nor religious coping interacted to increase the strength of the relationship between ego-resilience and overall life quality. However, ethnic identity moderated the relationship between ego-resilience and the

quality of social relationships, while religious coping moderated the relationship between ego-resilience and physical health. Furthermore, independently, both ethnic identity and religious coping were positive predictors of overall life quality for African Americans. This study elucidated the complexity of examining protective factors influenced by culture, and it is important to expand on this research to understand the relationship among these variables for other racial/ethnic groups.

While the study by Holmes & Carter found evidence that ego-resilience has a significant impact on stress perception, it is still unclear how, or why, this relationship occurs. It may be that highly ego-resilient individuals may experience a similar number of stressful events when compared to their less ego-resilient counterparts, but they perceive the events as less stressful because they also perceive that they have the ability to cope with the stressor (i.e., internal resources). It is also possible that individuals who score higher on ego-resilience manage their environment in a way that results in fewer actual external stressors, and therefore they report lower levels of stress when compared to individuals who are less ego-resilient. The current study hopes to explain why highly ego-resilient individuals may perceive less stress when compared to their less ego-resilient counterparts.

To clarify this relationship, this study will examine a cross-ethnic stress resistance model to determine if ego-resilience is a negative predictor of stressful events (e.g. environmental stress), and perceived stress in a diverse sample of Caucasian-Americans, Hispanic- Americans, and African- Americans.

Stress

Stress is an internal or external pressure that can lead to psychological or physiological distress when an individual's internal or external resources are exceeded by the demands of their environment (Aldwin, 1994). Stress can have negative psychological and physical responses. Stress can be objective or subjective. Objective stressors are the actual events someone experiences (e.g. divorce, death of a loved one) while subjective stress is the extent to which someone may appraise an event as stressful or distressing. Stress has been linked to a decline in cardiovascular functioning, decrease in the immune system (Glaser, Sheridan, Malarkey, Maculum, & Keicolt-Glaser, 2000; Sapolsky, 1998), and increase in digestive disorders (Armata & Baldwin, 2008). People who report higher stress levels are more likely to experience depression (Sapolsky, 1998; Holsoer, 2001) and anxiety (Ghorbani, Krauss, Watson, LeBreton, 2008; Schwartz et al 1978). The current study will investigate objective stressors (environmental events), including a specific source of stress that may be more relevant for minority populations (race-related stress), and subjective stress by examining perceived stress, and emotional responses to stress (i.e., anxiety, hostility, and depression). This study aims for a more comprehensive measurement by measuring multiple sources of stress.

Stress and Ethnicity

Certain stressors (i.e., race-related stress) may be more likely to affect specific racial or ethnic groups for a number of reasons. For instance, African Americans and Hispanic Americans are more likely to experience chronic stress and adversity because they are members of a minority group and are also more likely to have a lower

socioeconomic status. Previous studies have found that these groups are more likely to live in single-parent homes, experience language barriers, discrimination, and acculturative stress (Araujo & Borrell, 2006; Arcia, Keyes & Gallagher, 1994; Canino, Gould, Prupris, & Shaffer, 1986; Centers for Disease Control and Prevention, 1999). One study found that African American women reported more neighborhood concerns than Caucasian women (Kubiak, 1995), which may indicate that they are on average experiencing more stressful events in their neighborhoods than White Americans. One study measured cortisol, one of the key hormones that is released in response to stress in a large sample of African American, Hispanic, and Caucasian participants. They found significant differences in cortisol levels by both race and socio-economic status (SES), highlighting the differentiation of stress responses for both variables.

Research has established that SES often matters when examining stress, specifically lower SES often results in a stressful living environment, which disproportionately affects minority groups. One study examined the environmental stress on parenting behaviors and depression with Mexican American mothers and fathers (White, Roosa, Weaver, Nair, 2009). For women, they found that economic hardship was positively associated with depression and the mother's self-reported warmth behaviors. For fathers, economic hardship and sense of danger in the neighborhood were both strong predictors of depression, explaining 40% of the variance in the father's depressive symptomology, and in turn affected warmth behaviors (by both father self-report) towards the child.   Another study (Kotchick, Dorsey, Heller, 2005) found that neighborhood stress was a significant predictor of psychological distress (depression, hostility, and anxiety) and in turn related to fewer positive parenting strategies in a

sample of African American single mothers. The aforementioned studies highlight the

deleterious effects of neighborhood stress associated with lower SES because they are

related to poorer mental health outcomes and also because they adversely affect

parenting, which is another source of stress for parents.

Race-Related Stress

      A unique stressor that primarily affects ethnic minorities is race-related stress.

Race-related stress includes "race-related transactions between individuals or groups and

their environment that emerge from the dynamics of racism that tax or exceed existing

individual and collective resources or threaten well being" (Harrell, 2000; pg.45.) There

are three types of race related stress that are often measured. *Individual* racism refers to

discrimination experienced by the individual. *Institutional* racism refers to prejudice

practices embedded in social institutions, and *cultural racism* refers to the denigration of

one's cultural norms or practices. Race-related stress has been shown to be negatively

correlated with psychological well-being for African Americans (Broman, 1997; Clark

et.al, 1999). One study found that African Americans experience higher levels of

individual and cultural race-related stress than Latino Americans and Asian Americans

(Utsey, Chae, Brown, Kelly, 2002), and higher institutional race-related stress when

compared to Latino but not Asian American participants. Although this study explained

differences in levels of experienced race-related stress based on ethnicity, one cannot

conclude that race-related stress is not a relevant construct for other minority groups. In

fact, Utsey and colleagues found that race-related stress was a significant predictor,

accounting for 13% of the variance in overall life quality for all three groups combined,

indicating that race-related stress is related to life quality for all three groups (Asian Americans, Latino Americans, and Hispanic Americans). However, this study did not separately examine the association between race-related stress and quality of life across all three ethnic groups, limiting our understanding of how this association may be either different or similar for African Americans, Latino Americans, or Asian Americans. The current study will examine these associations across ethnic groups, to clarify this relationship for Hispanic Americans and African Americans.

One study examined race-related stress and quality of life in an ethnically diverse sample of Latino immigrants (Flores, 2008). The author found that Black and Trigueno (of a multi-racial ancetrsy) Latinos report higher levels of race-related stress than white Latinos. The Black Latino group was most adversely affected by race-related stress. She also found that higher levels of attachment to their ethnic group, social support, and an ability to navigate between different cultures was adaptive and related to lower levels of depression for all participants. Flores' study highlights the importance of considering the variance in race and ethnicity within the Hispanic culture, which may also affect the types of stress they experience, ultimately leading to different mental health outcomes. The current study will ask the Hispanic/Latino participants to identify their racial and ethnic background to investigate potentially different stress reactions based on race and ethnicity within the Hispanic/Latino population.

Harrell (2000) argued that race-related stress is a unique stressor for ethnic groups, and therefore must be considered in multicultural stress models. However, some studies with ethnic minorities (African Americans and Hispanic Americans) measured stress by including a checklist of stressful events that did not include race-related stress

(Brennan & Moos, 1990). Furthermore, studies that include race-related stress study this stressor independent of more global stressors, thus limiting interpretation of how multiple types of stress impact different ethnic groups. The current study will investigate a comprehensive stress model by including race-related stress and general environmental stressors (i.e., domestic, vocational, and health) to examine how they all impact well being.

Stress Perception

Early stress theory by Lazarus and Averill (1972) stated that cognitive appraisal is essential in the stress process because it is a mediator between the stressful situation and the response a person will have to a particular stressor. They further defined two types of cognitive appraisals. Primary appraisal refers to judging whether a situation will have a positive or negative outcome. Secondary appraisal refers to the potential resources (internal and external) a person has available to handle a potential stressor. Internal resources can include factors such as intelligence, coping styles, and interpersonal skills. External resources can be financial resources or support from family and friends. In turn, both types of cognitive appraisals affect how people perceive various stressors, which in turn affects how stress impacts the individual. More recent studies have defined perceived stress as the subjective experience of various stressors (Kreitler, Peleg, & Ehrenfield, 2007). This current study focuses on internal resources (ego-resiliency, religious coping, and ethnic identity), which may affect stress perception.

Within this current study, there is a distinction between *overall perceived stress,* and *environmental events*. Participants responding about their *specific stressors* will

appraise a stressor (e.g. vocational) by indicating the extent to which they feel "stressed" by a particular stressor. Thus, measurement of stress includes overall perceived stress and one's response to particular event. *Life events* are specific events endorsed by a checklist, whereby the participant will endorse if the stressor (e.g. divorce) is present or absent, so stress perception is minimally at play because it only refers to the recognition of the occurrence of a particular event, and not an appraisal of how stressful they perceive the event to be. By measuring environmental events, we will be able to assess the presence or occurance of specific events, to determine if stress resistance variables also decrease the likelyhood of people experiencing potentially stressful events. On the other hand, *overall perceived stress* refers to one's appraisal of the toll of all of the current stressors in one's life. Hence, overall perceived stress refers to reflection of the distress one experiences in relation to the sum of all of their stressful experiences.

Perceived Stress and Life Quality

High levels of perceived stress have been linked to lower quality of life across different populations; ranging from a sample of doctoral students (Peters, 2008), to cancer patients (Kreitler, Peleg, & Ehrenfield, 2007), to veterans of World War II and the Korean War (Hart, 2006).

Hart (2006) found that perceived stress had a positive relationship with psychiatric symptoms and negative relationship with quality of life. Hart examined the relationship between post-traumatic stress symptomology in aging veterans of World War II and the Korean War. Quality of Life was assessed by individual's perceptions of their overall quality of life, giving an overall score summed from 4 domains– psychological

health, environment, physical health, and social relationships (World Health Organization

Quality of Life Scale; WHOQOL-BREF). As perceived stress increased, post-traumatic

stress symptoms increased. An increase in perceived stress and post-traumatic stress

symptoms were also linked to poorer mental health quality of life.

Kreitler and colleagues found that perceived stress had the most direct impact on

quality of life was when compared to health stress and social stress (Kreitler, Peleg, &

Ehrenfield, 2007). They also found self-efficacy served as a protective factor that helped

mitigate the impact of stress. The authors used a sample of cancer patients, and assessed

health stress by measuring stage of the disease, treatment, and disease duration. Fifty

percent of the population reported that they were recent immigrants, but unfortunately the

author did not report the race or ethnicity of the participants. Social stress included self-

reports about immigration status, employment status, and age. They measured quality of

life across multiple domains --negative emotions, disorientation, cognitive functioning,

positive emotions, physical state, health, physical pain, self-image, sense of control, sense

of coping, and meaningfulness. Self-efficacy was defined as a personality disposition

that allows individuals to influence their own cognition and mood to shape their

environment. They found that the relationship between social stress, health stress, and

quality of life were mediated by perceived stress and self-efficacy, repectively. Perceived

stress had a significant main effect on overall quality of life. Health stress only impacted

quality of life through perceived stress. Self-efficacy was directly related to quality of

life, and also indirectly, by an inverse effect on perceived stress.

The abovementioned study by Kreitler and colleagues highlighted the importance

of including perceived stress in stress models (as opposed to only examining a checklist

of potential stressors) because negative health outcomes are more strongly associated

with perceived stress than a certain type of stressor. However, we do not know which

ethnic/racial groups the study represented because race and ethnicity was not reported;

although, given that 50% of the sample had a recent immigrant stautus, it may be that this

study included a minority sample. The lack of reporting of race/ethnicity also limited

cross-cultural comparisons. Nonetheless, the study by Kreitler and colleagues does

provide evidence that certain psychological variables may serve to protect one from the

negative impact of stress by predicting lower levels of perceived stress. The current

study will examine ego-resilience as a psychological variable instead of self-efficacy, and

incude a cross-cultural comparison of these relationships.

Resilience

Resilience has been defined as a coping process that influences an individual's

ability to function despite experiencing chronic stress and adversity (Egeland, Carlson, &

Sroufe, 1993). It has also been defined as a personality characteristic that is relatively

stable; people who possess trait resilience readily utilize adaptive coping processes.

Leipold and Greve (2009) define resilience as part of the coping hierarchy, whereby

successful coping may be stable, and in turn, results in resilience.

A resilient individual utilizes internal and external resources to mediate their

interactions with the environment. An internal resource includes adaptive coping methods

and indicates healthy psychological functioning (Khlonen, 1996). Less resilient

individuals may think in more rigid terms and have fewer available internal resources.

Highly resilient individuals may have more access to external resources due to their

positive attitude and the ability to adapt to their environment (Khlonen, 1996). As a result of these different coping methods, highly resilient individuals and individuals who are less resilient can have very different reactions to the same situation (Feitelberg, 2007).

Stress Resistance and Stress Buffering Models

One function of resilience is that it serves to buffer the negative consequences of stress. Resilient individuals are often able to function effectively in even adverse environments (Block & Block, 1980), which may be attributed in part to the way in which they cope with stress. However in many studies, resilient participants' level of internal stress and external stressors are usually not assessed, giving little insight into how they manage their environment. It is unknown if resilient individuals are able to function well despite high levels of internal stress, or if they are able to manage their environments in ways that reduce the amount of internal and external stress they experience, which would support a stress buffering or stress resistance model. For the purposes of this study, stress resistance and stress buffering models are synonymous because the literature has provided no relevant distinction between these two terms.

Lin and Einsel (1989) proposed one of the first stress-buffering models. They posited that personal resources might have the ability to buffer the negative consequences of stress. Lin and Einsel posited that both psychological resources and social resources are important variables that serve as stress buffers. The current study will test this model examining ego-resiliency (psychological resource) as a stress buffer by predict lower levels of perceived stress.

There is a growing body of research that indicates that some individuals are able to buffer the negative effects of very stressful experiences or even have positive outcomes from seemingly traumatic events (Calhoun and Tadeschi, 1989; Affleck, Tennen, & Gershman, 1985; Schafer &Moos, 1992). The term post-traumatic growth refers to an individual who believes they have gained something positive from a very stressful and negative acute event. Bonanno (2005) studied participants who experienced a traumatic life event, but who did not develop a post-traumatic disorder. While the participants did experience some distress shortly after the event, they expressed significantly less negative emotions related to the traumatic event and reported more positive emotions than individuals who experienced the same traumatic event. Post-traumatic growth research provides evidence for a process of resilience that buffers the effects of traumatic events, however, it does not account for an understanding of the resilience process for everyday stress since acute stressors have been the focus in the post-traumatic growth research.

Brenan and Moos (1990) provided evidence for Lin and Einsel's stress buffering model which included multiple stressors. They measured participants' negative events over one year, and assessed depression prior to and after exposure to negative events. They found that an increase in exposure to negative events lead to a decrease in psychological functioning. Individuals who had less exposure to negative events were more likely to improve functioning over a one year time period. However, 30 percent of the participants who were exposed to high number of stressors were able to improve functioning over the year. This high stress group had an increase in personal and social resources. This process is defined as *stress resistance,* whereby people are able to utilize

coping processes to increase resources while under high stress to improve functioning.

Ethnicity and Resilience

There is evidence that African Americans, Caucasians, and Hispanics use different coping styles, thus predicting different psychological responses to stress (Kudadjie-Gyamfi & Magai, 2008). However, fewer studies have examined how ethnicity may affect the relationship between stress and resilience.

There is some evidence that ethnicity may impact the process of resilience. Baez (2000) examined coping processes with African American women as a mediator of stress, anxiety, depression levels, and resilience. He examined specific individual coping styles (emotion-focused and problem-focused coping) and coping reactions within the family. He defined positive coping skills as "coping methods that predicted lower levels of anxiety and depression." Problem-focused coping was concurrently used with emotion-focused coping for the African American women and the combination of these coping styles was linked to resilient functioning, which lead to it being defined as a positive coping technique for African American women. Previous research with Caucasian Americans indicated that the utilization of problem-focused coping as a single construct (without the use of emotion-focused coping) predicted the best psychological functioning. Baez points out that the unique utilization of combined coping styles within this group of African American women should lead to an interpretation of coping styles in the context of culture. These findings are relevant to the current study because it not only provides support for resilience as a stress resistance variable, but also indicates that this process may be unique depending on ethnic group membership.

        One explanation for the different psychological outcomes from similar stressful events across racial/ethnic groups has been the overrepresentation of minorities in lower SES groups. However, there is evidence that African Americans have different psychological outcomes from stressful events than White Americans in similar situations, even when matching for socioeconomic status. Kubiak (2005) examined vulnerability factors for experiencing PTSD in a sample of socially disadvantaged women with a prior history of trauma. The participants completed self-report forms identifying the types of stressors they experienced over a one year time period. Kubiak found that employment discrimination increased the likelihood of developing PTSD for White Americans, but had no significant impact on African American women. This difference in psychological outcomes indicates that race/ethnicity may play a role in how one perceives a similar stressor, yet we know little about why or how ethnicity affects coping processes, or one's perception of a stressful event. It could be that African American women on average had previously learned ways to cope with discrimination because they experienced discrimination more frequently when compared to Caucasian women. Relatedly, Caucasian women might not have had ample experience with discrimination to develop resources to buffer the negative effects of this specific stressor. The aforementioned study indicates that the African American women were able to utilize resources that allowed them to buffer the negative psychological consequence of employment discrimination, even with a history of multiple traumas, indicating the presence of resilience in the group of African American participants. The current study hopes to expand on our understanding of protective factors across ethnic groups, as we know even less about resilience in Hispanic/Latino Americans.

<u>Ego-resilience</u>

Factor analysis has shown that most of resilient functioning can be accounted for by five components, which are included in the measurement of *ego-resiliency*. These five components include an "(1) optimistic, positive, and energetic outlook and approach to life"; "(2) productive activity, (3) persistence in the face of adversity, (4) initiative and independence; (5) "the capacity for close relationships and for being insightful and socially perceptive", such as "skilled expressiveness…being at ease in social settings, and being skilled in interacting with others" (Khlonen, 1996). Conversely, when opposite aspects of these components are represented (limited social skills, brittleness, withdrawal), it correlates with maladaptive functioning (Shonk, S., Cicchetti, D., Flores, E., 2001; Cicchetti, D., Rogosch, A., 2005).

Ego resiliency is a construct derived from an extensive assessment of a resilient personality (Block & Block, 1980), and is the extent to which an individual is able to "modify one's behavior in accordance with contextual demands" and represents an internal resource that involves coping and a cognitive approach that is strongly associated with resilience (J.H. Block, J. Block, 1980). This person can adapt to their environment and function effectively despite external stressors. Conversely, someone who is "ego-brittle" represents a deficit in ego-resiliency; they lack internal resources and under-utilize a flexible approach to their environment. An ego-brittle person may be confined to using only existing schemas even though they may be maladaptive (Hart, Daniel, Keller, et.al, 1998). Ego-resiliency is thought to be a key component of resilient functioning because an individual high in ego-resiliency can function effectively in

multiple environments despite high levels of stress (J.H. Block, J. Block, 1980). For this study, ego-resiliency will be measured to assess resiliency because it has been shown to have the strongest correlation with overall resilient functioning (Khlonen, 1996).

Theoretically, individuals who have high ego-resiliency are able to function effectively in stressful environments. Thereby, ego-resiliency serves as a stress resistance variable because it promotes successful adaptation when one is faced with various stressors.   However, there is a limited understanding of how ego-resilience influences the subjective experience of stress, and yet empirical evidence indicates that how one perceives the stressors they experience greatly affects the reaction they will have to those stressors (Aldwin, 1982; Lazarus & Folkman 1984; Lazarus, 1991).

Spangler (1997) examined how ego-resiliency influenced the physiological and psychological responses to exam. The author found no differences in state anxiety before the exam between groups who had high and low levels of ego-resilience; however, participants who scored high in ego-resiliency had lower anxiety after the exam compared to participants who scored low on ego-resiliency. Interestingly, individuals who scored high on ego-resiliency had higher cardiac activation during the exam, but lower cardiac activation after the exam compared to less ego-resilient participants. The author explained that these responses occurred because individuals high in ego-resiliency have the ability to down-regulate their anxiety, while individuals who were less ego-resilient did not. The author further stated that these findings support the theory of ego-resiliency as being a personality variable that allows one to be flexible and adaptive (i.e. they could recover more quickly from an anxiety provoking task).

The current study proposes that the finding of an ability to down-regulate emotions in the ego-resilient group provides evidence that there will be a positive relationship between ego-resiliency and overall psychological health. Ego-resiliency did not predict perceived stress on either task, and the author attributed this finding to be task specific. Although ego-resiliency did not predict perceived stress for this study, the current study hypothesizes that ego-resiliency predicts perceived stress because the current study will ask participants to rate stress over a longer time period (over the past month). One study found that positive emotions mediated the relationship between trait resilience and adjustment to daily stress (Ong, Bergman et.al, 2006).

Studies examining ego-resiliency in ethnic adult populations have been primarily limited college student populations (Utsey et.al, 2008; Brown, 2008). One study examined the relationships between ego-resilience, optimism, race related stress, and distress in an older African American adult population (Baldwin, Jackson, Okoh, Cannon, 2011). A median split comparison of ego-resiliency indicated that the participants who scored higher on ego-resiliency had more positive expectations for the future and greater reported optimism when compared to participants who scored lower on ego-resiliency. The group who scored higher on ego-resiliency were overall less distressed; reporting less somatization and generalized anxiety than the less resilient group. Interestingly, reported individual racism was a negative predictor of ego-resilience, while cultural racism was a positive predictor of ego-resilience. These mixed results indicate that ego-resilience may be a positive response to cultural racism, while individual racism has a negative impact on ego-resilience. Professional African American participants reported higher levels of race-related stress and scored higher on

ego-resilience when compared to blue-collar African American participants. Although this study was conducted on a small sample of elderly African Americans (n=52), it provides support for ego-resilience as a stress buffer for African Americans across the lifespan. The study also underlines the importance of studying race-related stress in a professional group of African Americans, which is an understudied area.

<div align="center">Cultural Moderators in a Stress Buffering Model</div>

<u>Ethnic Identity</u>

Slavin et.al (1991) argued that culture will impact the coping processes utilized to deal with various stressors (Slavin, Rainer, McCreary, Gowda, 1991), and that ethnic identity should be examined as a way to measure culture's impact on the stress process. Ethnicity can be defined as a group of individuals with a shared identity that can be historical, cultural, or membership in a religious group (Carter et al, 1996). Ethnic identity is the extent to which an individual perceives him/herself to be a member of an ethnic group. Ethnic identity attempts to capture an individual's developed sense of affiliation with his or her ethnic heritage, and the degree that an individual attempts to explore the meaning of his or her ethnicity (Phinney, 1992). One dimension of ethnic identity is that individuals participate in practices and activities related to their culture, which provides a type of culture-specific social support which may in turn explain its link to adaptive coping and resilience because resilient individuals often solicit social support.

Ethnic identity has often been used to understand its relationship to adjustment and psychological well-being (Phinney and Kohatsu, 1997). Carter and colleagues found that a higher level of ethnic identity is associated with lower levels of depression and

anxiety for African Americans (Carter, Sbrocco, Lewis, Freedman, 2001; Carter, Sbrocco, Miller, Suchday, Lewis, Freedman, 2004). A strong ethnic identity has often shown to be a predictor of psychological well-being, and a buffer against psychological distress.

Utsey (Utsey, Chae, Brown, Kelly, 2002) found that ethnic identity (measured by the Multi-ethnic Identity Measure; MEIM) was the best predictor positive predictor of quality of life when compared to gender, ethnicity, and race-related stress. He found that African Americans had significantly higher ethnic identity scores than Hispanic Americans and Asian Americans and higher reported quality of life when compared to Asian Americans, despite having the highest level of race-related stress. Utsey and colleagues also found that ethnic identity accounted for the most variance in life quality when compared gender, ethnicity, and race related stress. Although African Americans were found to have higher ethnic identity scores when compared to Hispanic Americans, this does not necessarily mean that ethnic identity is not a protective factor for the Hispanic/Latino population. In fact, Utsey found that for both African Americans and Hispanic Americans, there is a strong link between ethnic identity and quality of life, indicating that ethnic identity may moderate stress resistance, (i.e., resilience) for both groups. The current study hopes to provide more information about the protective nature of ethnic identity for both populations.

Religious Coping

Studies have provided mixed results about religious coping; it has been associated with both positive and negative outcomes. Furthermore, results have varied

across ethnicities. Religious coping has been defined as the extent that one uses spiritual or religious thoughts or behaviors to cope with various stressors. Some earlier studies labeled religious coping to be a passive style of coping (Carver, Scheier, & Weintraub, 1989; Lazarus & Folkman, 1984), which is thought to be a less desirable coping style. However, earlier studies did not examine religious coping as a separate construct. A few items of religious coping were embedded in coping measures, limiting the analysis of religious coping as a separate construct. Minority populations were also underrepresented in coping research; therefore comparisons of religious coping based on ethnicity were not possible.

Newer studies have examined religious coping as a separate construct, and found religious coping to be an active coping approach and linked to a psychological well being (Abraido-Lanza, Vasques, Echeverria, 2004), and physical health (Pargament, 1997). One study found that religious coping moderated the effects of an intervention aimed at improving psychological well-being for care givers of dementia patients for Hispanic and African Americans, but not Caucasian Americans (Lee, Czaja, Schulz, 2010). Thus, religious coping may be a protective coping strategy and resource for both African Americans and Hispanic Americans, while it may not be an additive resource for Caucasian Americans. On the contrary, there is some evidence that religious coping can also lead to positive outcomes for Caucasian Americans. One study with a predominately Caucasian sample found a significant curvelinear relationship between religious coping and depression with among spouses of people with lung cancer (Abernethy, Chang, Seidlitz, Evinger, Duberstein, 2002). Interestingly, this study found that moderate levels of religious coping predicted lower levels of depression above and beyond perceived

control and self-efficacy.

Dunna and Obrien (2009) examined the relationship between religious coping and psychological health in a sample of Latino immigrants. Their sample reported high levels of religious involvement, with fifty percent of their sample attending church at least once a week; relatedly they reported strong religious support networks. They did not find that positive religious coping predicted psychological health (i.e., anxiety and depression) above and beyond reports of perceived stress. Aspects of negative religious coping (i.e., punishing God, reappraisal of God's power) were positively correlated with perceived stress.

Brasfield (2008) interviewed a population of rural Caucasian American and African American mothers who were coping with the stress of raising children with special needs. The mothers identified religious coping as a source of resilience. The current study will examine religious coping in a diverse sample to further understand how religious coping may vary across cultures.

More recent studies have differentiated between positive religious coping which may buffer the effects of stress, and negative religious coping, which is linked to negative outcomes (Wortmann, Park, & Edmonson, 2011). Park (2005) described the potential mechanisms of positive religious coping, stating that it may facilitate an adaptive response to stress by (a) "providing means to make more benign attributions", (b) "helping the individual to see the positive aspects of a stressful situation", and (c) "facilitating perceptions of stressful related growth". The Brief RCOPE is a measure that was developed to assess both positive and negative aspects of religious coping (Pargament, Feuille, Burdzy and 2011). According to Pargament and colleagues, positive

religious coping methods reflect a secure relationship with a transcendent force, a sense of spiritual connectedness with others, and a benevolent worldview. In contrast, negative religious coping methods reflect underlying spiritual tensions and struggles within oneself, with others, and with the divine.

Holt and colleagues (2011) examined multiple meditational models to determine the role of religious involvement as a predictor of functioning in a sample of African American adults who recently experienced a major life stressor (a cancer diagnosis). They found that although religious beliefs and behaviors were not predictive of physical functioning, they were predictive of emotional functioning. They found that the relationship between religious behaviors (i.e., church attendance and involvement in church activities) and emotional functioning were mediated by positive affect, which explained for 80% of the relationship between the predictor and response variable. These results indicate that religious behaviors in part lead to a positive affective state, which in turn leads to emotional well-being. Several studies examine the role of religiosity as a potential stress-buffer in a medically-ill population, but fewer studies have examined the role of religious coping as a buffer for day-to-day stressors. Our study will explore religious coping as a buffer for daily stressors (i.e., home, health, vocational, and race-related stress) in a multi-ethnic sample. The authors proposed that similar relationships should be studied in a Caucasian and Latino sample, and we hope to expand on the literature in this area.

Cultural Stress-Buffering Models

Utsey and colleagues (Utsey, Geisbrecht, Hook, and Standard, 2008) hoped to

find support for a combined sociocultural and stress suppressing model by including culturally relevant factors that may influence the impact of stress. They used a sample of 214 African American adults in a university setting to examine both race-related stress and life events as predictors of psychological distress in hopes to gain a more comprehensive understanding of the impact of multiple stressors for African Americans. Participants endorsed the life events they experienced over the past year, ranging from minor violations of the law to the death of a spouse. The authors found that racial stressors alone were a better predictor of psychological distress than combined life events experienced over the past year. The authors also examined factors that may buffer the impact of stress by examining ego-resiliency as a psychological variable and racial pride, religious coping, and social-familial resources as cultural factors. Ego-resiliency significantly negatively predicted psychological distress. The authors found that cultural resources (racial pride and religious coping) were positively correlated with ego-resiliency. Ethnic identity (which is a similar construct) and religious coping will be examined in the current study.

We will not examine social-familial resources in this study because the aforementioned study did not find them to be significant predictors of psychological stress, or to be positively correlated with ego-resiliency. One of the objectives of the abovementioned study was to compare the effects of race-related stress and negative life events. Finding race-related stress as the most significant predictor of psychological distress is an important finding, and this study will determine if these findings can be replicated. The current study will also compare the effects of race-related stress and environmental events for Hispanic Americans and Caucasian Americans to determine

which stressors may be most detrimental for these populations as well. The current study

will also focus on factors (ego-resilience, religious coping, and ethnic identity) that

influence *stress perception* in addition to general stressors and race-related stress.

Overall, the abovementioned authors found support for a cultural stress- resistance model

with African Americans, and the current study hopes to provide support for a multi-ethnic

model.

One study to date has found evidence that ego-resilience has a significant

influence on stress perception in a sample of African American participants (Holmes,

Carter, Gunthert, in prep.) Holmes et.al found that ego-resilience predicts overall life

quality as mediated through perceived stress. Contrary to the authors' hypotheses,

neither ethnic identity nor religious coping moderated the relationship between ego-

resilience and overall life quality. Rather, when considering ego-resilience, religious

coping was no longer a significant predictor of life quality, while ethnic identity remained

a unique predictor for overall life quality above and beyond ego-resilience for this

population. This indicates that religious coping may be a facet of ego-resilience for

African Americans. Although ethnic identity does not interact with ego-resilience to

further enhance overall life quality, ethnic identity remains a unique contributor,

indicating that it is even more important as a resource for African Americans with lower

levels of ego-resilience.   Interestingly, ethnic identity moderated the relationship

between ego-resilience and social relationship quality, highlighting the importance of

examining the relationships among cultural variables across all four quality of life

domains.

The current study will expand on the abovementioned study in two ways. First,

this study will include a sample of Hispanic Americans and Caucasians to determine if perceived stress also mediates the relationship between ego-resilience and quality of life for other racial groups. It is important to understand the relationships among these variables for a more diverse sample. The abovementioned study found that people who scored higher on ego-resilience were more likely to have better physical health, psychological health, social relationships, and environmental quality when compared to people who scored lower on ego-resilience. This study hopes to determine if this trend also exists for Hispanic Americans and Caucasian Americans. Thus, the current study could provide evidence that ego-resilience is a broad stress resistance variable with some generalizability. Next, the current study will conduct a cross-cultural examination of ethnic identity and religious coping as stress resistance variables, to determine their relationship with life quality. Finally, this study aims towards a more comprehensive understanding of the impact of multiple sources of stress on life quality for a diverse sample. By measuring multiple sources of stress, this study hopes to provide an understanding of the types of stressors that most adversely impact overall life quality for African Americans, Caucasian Americans, and Hispanic Americans, while also determining protective factors (ego-resilience, ethnic identity, religious coping) that may buffer the negative effects multiple sources of stress.

Study Aims and Hypotheses

Hypothesis: Differences in Study Variables
across Racial/Ethnic Groups

Based on previous literature, we predict that the African American and Hispanic group will have higher ethnic identity scores via the MEIM-R and race related stress scores via the IRRS-B when compared to the Caucasian group. Predictions about differences in IRRS-B and MEIM-R scores between the African American and Hispanic/Latino group will be withheld. We will conduct an exploratory analysis to determine if there are significant differences in scores for all other study variables (including religious coping, ego-resilience, total stress, perceived stress, emotional response to stress, environmental events, and total life quality) between the Caucasian, African American, and Hispanic/Latino group.

Hypothesis: Ego-resilience, Perceived Stress,
and Quality of Life

Perceived stress will be a partial mediator between ego-resiliency and quality of life for all three groups (Hispanic Americans, African Americans, and Caucasian Americans). To provide evidence for a mediator model, we will use three steps defined by Barron and Kenny (1986) to determine mediation. (See model 1 below.)

1) *Step 1*. Ego-resiliency will be positively correlated with quality of life.

2) *Step 2*. Ego-resiliency will be negatively correlated with perceived stress.

3) *Step 3*. Perceived stress will predict quality of life (using a linear regression model).   There will be a negative linear slope for the relationship between perceived stress and quality of life.

Hypothesis: Full Model: Ego-Resilience (ER89),
Environmental Factors (DSP-EF), Emotional
 Response (DSP-ER), Race-Related Stress

(IRRS-B), Ethnic Identity (MEIM-R), Positive Religious Coping (PRCOPE) and Negative Religious Coping (NRCOPE) as predictors of Life Quality (WHO-QOL BREF)

1) In a full model, with all predictor variables entered, ego-resilience will be a unique contributor (i.e., positive predictor) of life quality across all three ethnic groups.

2) The Environmental Factors domain of the DSP and the Emotional Response Domain will have a negative relationship with overall quality of life for all three racial/ethnic groups.

3) Race-related stress will be a unique contributor to overall above and beyond environmental stress and emotional response to stress for African Americans and Hispanic Americans, but not for Caucasian Americans.

4) Ethnic identity will have a significant positive relationship with overall life quality for Hispanic Americans and African Americans but not for Caucasian Americans given all other variables entered into the model. (No specific predictions will be made based on minority status).

5) Positive religious coping will have a significant positive relationship with overall life quality for Hispanic Americans, African Americans, and Caucasian Americans given all other variables entered into the model.

6) Negative religious coping will have a significant negative relationship with overall life quality for Hispanic Americans, African Americans, and Caucasian Americans given all other variables entered into the model.

<u>Hypothesis: Environmental Factors (DSP-EF)</u>
<u>Domain, Emotional Response to Stress</u>
<u>(DSP-ER) Domain, and Race-Related</u>
<u>Stress (IRRS-B) as Predictors of</u>
<u>Perceived Stress (PSS) across</u>
<u>Ethnic Groups</u>

Race-related stress will be a positive predictor of perceived stress along with

emotional response to stress, and environmental factors for the Hispanic and African

American groups but not for the Caucasian group. Environmental factors, and emotional

response to stress will be significant predictors of perceived stress for the Caucasian

group.

<u>Hypothesis: Stress-Resistance/Amplifier</u>
<u> Model: Ego Resilience, Ethnic Identity</u>
<u>and Positive and Negative Religious</u>
<u>Coping as predictors of Quality of Life</u>

In a model, with only potential stress resistance variables and a stress amplifier

entered as predictors, we hypothesize that ego-resilience, and positive religious coping

will be positive predictors of life quality for all three groups, while additionally, ethnic

identity will be a positive predictor of life quality for African Americans and

Hispanic/Latino Americans, which would provide support for a stress-resistance model.

Negative religious coping will be a negative predictor of life quality for all three groups,

which will provide evidence that it is a stress amplifier.

<u>Exploratory Analyses: Moderators</u>

We will conduct an exploratory analysis to determine if ethnic identity, positive

religious coping, or negative religious coping moderates the relationship between ego-

resilience and life quality or ego-resilience and perceived stress.

CHAPTER 2

METHOD

Recruitment

A convenience sample of a combination of college and community participants

was recruited online. Inclusion criteria included those between the ages of 18 to 65 years

and who self-identified as Caucasian, African American or Hispanic/Latino. The college

sample attended a mid-sized university located on the east coast and were recruited

through a posting on an electronic campus daily newsletter. Community participants

were recruited online through advertisement via the funnel e-mail method, postings on

social network sites, online newspapers, and emails to members of community

organizations. Participants emailed the principal investigator their preferred email

address after completing the study to be entered into the raffle to win $200 (odds 1:50).

Measures

Ethnic Identity: Multigroup Ethnic Identity
 Measure- Revised (MEIM-R)

The MEIM-R is a commonly used measure of ethnic identity. The MEIM-R

(MEIM-R; Phinney, 2007) is a 14- item measure assessing two aspects of ethnic identity-

- exploration and commitment. Commitment involves one's sense of belonging or

attachment to their ethnic group. Exploration involves seeking information and

experiences regarding one's ethnicity. The MEIM-R uses as 5-point Likert-type scale

ranging from 1 (strongly agree) to 5 (strongly disagree) and lower scores on the MEIM

indicate a higher ethnic identity. Phinney and Ong (2006) found internal consistencies

using a multiethnic college sample (N=242) finding Cronbach's alpha coefficients of .83

for exploration and .89 for commitment.

Quality of Life: World Health Organization Quality of Life Scale (WHOQOL-BREF)

Quality of life will be measured by using the World Health Organization Quality

of Life Scale, the WHOQOL-BREF (Skevington, Lotfy, O'Connell, & WHOQOL

Group), which is a 26-item self-report scale measuring health and quality of life. Two

questions ask about overall quality of life and overall health. There are also four specific

domains including physical health (e.g. mobility, energy, and fatigue), psychological

health (e.g. negative feelings, positive feelings, and concentration) social relationships

(e.g. social support), and environment (e.g. financial resources, and opportunity for

acquiring new skills) using a 5-point Likert-type scale for each question. Higher scores

on each domain indicate higher quality of life within each domain, and a higher total

score indicates better overall quality of life.

Perceived Stress: The Perceived Stress Scale (PSS)

The perceived stress scale (Cohen, Kamarck, & Mermelstein, 1983) is a 14-item

self-report questionnaire that assesses an individual's perception of stress that they have

experienced over the past month (e.g., "In the last month, how often have you been upset

because of something that happened unexpectedly?"). It uses a 5-point Likert-type scale

ranging from 0 (never) to 4 (very often). The score from each response is summed to determine a total perceived stress score. This scale has been shown to have good internal consistency (Cronbach's alpha, .86; (Cohen et al., 1983).

Race-Related Stress: Index of Race Related
Stress--Brief Version (IRRS-B)

      The IRRS-B (Utsey, 1999) is a 22-item measure that was developed to assess stress experienced by African Americans in race-related experiences. Participants respond using a 5-point Likert-type scale ranging from 0 (*this never happened to me*) to 4 (*event happened and I was extremely upset*) to describe to how they are affected by racist experiences that they, or people close to them have experienced. The IRRS-B includes three types of racist experiences--cultural, institutional, and individual. Alpha coefficients were found for individual racism (.84), institutional racism (.85), cultural racism (.79), and global racism (.77; Utsey, 1999). The IRRS--B was significantly correlated with two subscales (cultural and individual racism) of the Perceived Stress Scale (Cohen, Karmarck, Mermelstein, 1983).   The IRRS-B was only validated in African Americans, although a recent study found gender, ethnic identity, family SES, and skin color to be predictive of IRRS-B scores in a Hispanic/Latino population (Cruz, 2011).   Another study found race-related stress to be predictive of intrinsic motivation in a combined sample of African Americans and Hispanic Latinos attending a predominantly White University (Reynolds, Sneva, Beehler, 2010).

The Derogatis Stress Profile (DSP; 1980, Derogatis, Fleming) is a 77-item self-report form derived from Lazarus' interactional stress theory (1966, 1981). The three interactional components of stress are environmental events, personality mediators, and emotional responses. These three domains overall make up 11 primary stress dimensions which are added to assess an overall quantitative global stress score for an individual which is called the Total Stress Score (TSS). The DSP aims for a comprehensive understanding of stress for an individual by assessing stress at a dimensional, domain (environmental events, personality mediators, and emotional response) and global level (Total Stress Score). DSP dimension and global scores are calculated with t scores. Norms were based on 1000 community residents ages 18 to 70 who were all employed when they completed the DSP. The DSP has acceptable test retest coefficients ranging from .72 for hostility to .92 for time pressure. Temporal stability was highest for personality mediator domains and lowest for emotional responses. Internal coefficients ranged from .93 for time pressure to .79 for vocational environment. Internal consistency for the three domain scores ranged from .83 to .88. To maintain power in study analysis and to address specific hypotheses, we will limit analyses using the Derogatis Stress Profile Total Stress Score (TSS), Environmental Events Domain (DSP-EF), and Emotional Response Domain (DSP-ER).

Ego Resilience: Ego Resiliency Scale (ER89)

Block and Kremen's (1996) Ego-Resiliency Scale (ER89) assesses trait variation in psychological resilience. Participants rate on a scale from 1 (*does not apply at all*) to 4

(*applies very strongly*) statements that describe how they typically interact with their environment. Higher total summed scores indicate higher levels of ego-resilience. The ER89 has been shown to be a valid measure of trait resilience as reflected by high correlations with both self-reports and observer ratings of adaptability to life events (Block and Kremen, 1996; Khlonen, 1996). The test–retest reliability (for those who completed the full 14-item version) was $r = .78$; and the internal reliability for the version completed at the experiment was $α = .72$.

Religious Coping: Brief RCOPE

The Brief RCOPE is a 14-item measure adapted from the original RCOPE (a 17-factor validated measure assessing the full range of religious coping methods) that addresses (1) positive religious coping strategies such as religious forgiveness, seeking spiritual support, collaborative religious coping, spiritual connection, religious purification, and benevolent religious reappraisals and (2) negative religious coping strategies which includes spiritual discontent, punishing God reappraisals, interpersonal religious discontent, demonic reappraisal, and reappraisals of God's powers. Both indexes for positive and negative coping is scored on a 4-point Likert-type scale with response options including ''not at all,'' ''somewhat,'' ''quite a bit,'' and ''a great deal.'' Scores also ranging from 7 to 28 on each index, indicated a range from low to high positive or negative religious coping. The Brief RCOPE has high internal consistency (Cronbach's alpha ranges from 0.81 to 0.90) and good discriminant validity .27.

CHAPTER 3

RESULTS

Demographics

There were 564 total participants (213 Caucasian, 178 African American, 173 Latino/Hispanic). 455 participants (81%) completed the study. Most of the participants were single (72%), lived in the eastern region of the United States (73%), and female (79%). The participants reported a wide range of incomes, ranging from less than $20,000 (29%) annually, to greater than 100,000 (20%), and a wide range of education levels, with 53% having a Bachelors degree or higher, and 40% reporting some college education. The mean reported age of all participants was 28 years, SD= 16.021 (African American mean= 32 years, SD= 16.71; Caucasian group mean= 30 years, SD= 14.37; Hispanic/Latino group mean= 24 years, SD= 15.69). See table 1 for demographics.

Analyses

Reliability Statistics

Chronbach's alpha statistic demonstrated good reliability for study measures. See table below.

<u>Examining the Potential for Confounding Variables</u>

To identify potential confounds, Spearman's rho correlations were used to determine if behavioral variables (ego-resilience, ethnic identity, positive religious coping, negative religious coping, quality of life, total stress, and perceived stress) were significantly correlated with demographic variables (age, education, or income).

<u>Table 1. Demographics</u>

GENDER	Male	Female				
Caucasian	39	139				
	22%	77%				
African American	37	176				
	17.4%	82.6%				
Hispanic/Latino	38	128				
	22.1%	75%				
MARITAL STATUS	**Single**	**Married**	**Divorced**	**Widowed**		
Caucasian	43	43	13	1		
	24%	24%	7.3%	.6%		
African American	160	48	4	1		
	75.1%	22.5%	1.9%	.5%		
Hispanic/Latino	126	31	10	1		
	73.3%	18%	5.8%	.6%		
REGION	**East**	**Midwest**	**South**	**West**		
Caucasian	113	40	20	4		
	63.1%	22.3%	11.3%	2.2%		
African American	170	26	11	4		
	79.8%	12.2%	5.2%	1.9%		
Hispanic/Latino	130	16	13	7		
	75.6%	9.3%	7.6%	4.1%		
EDUCATION	**Some HS**	**HS/GED**	**Some College**	**Associates Technical**	**Bachelors**	**Advanced Degree**
Caucasian	0	10	47	8	58	54
	0%	5.6%	26.3%	4.5%	32.4%	30.2%
African American	2	9	103	4	36	58
	.9%	4.2%	48.4%	1.9%	16.9%	27.2%
Hispanic/Latino	0	16	51	10	44	47
	0%	9.3%	29.7%	5.8%	25.6%	27.3%
INCOME	**>$20,000**	**$21-30,000**	**$31-50,000**	**$51-70,000**	**$71-100,000**	**<$100,000**
Caucasian	43	14	30	18	33	39
	24.0%	7.8%	16.8%	10.1%	18.4%	21.8%
African American	67	10	23	29	28	51
	31.4%	4.7%	10.8%	13.6%	13.1%	23.9%
Hispanic/Latino	47	13	32	26	28	19
	27.3%	7.6%	18.6%	15.1%	16.3%	11.0%

Table 2. Reliability Statistics

Variables	Caucasian	African American	Hispanic/ Latino	Combined Sample
		Chronbach's Alpha		
ER89*	.781	.750	.751	.767
PSS	.892	.909	.895	.899
DSP TSS	.776	.800	.731	.773
IRRS*	.859	.844	.839	.869
WHO-QOL BREF	.921	.911	.923	.934
MEIM-R*	.913	.904	.904	.915
PRCOPE*	.953	.926	.963	.963
NRCOPE*	.747	.836	,794	.810

Based on Spearman rho correlations, there were significant relationships between age and behavioral variables (see Table 3). Perceived stress scores decreased as age increased (r=-.255, p= .012), while ego-resiliency scores increased with age (r=.169, p<.001). The subsequent analyses will control for age when perceived stress and ego-resilience are entered into the regression model. Age was positively correlated with total QOL scores (r=.128, p=.023), so we will control for age in regression and correlation analyses. Age had no significant impact on, MEIM, PRCOPE, NRCOPE, or DSP scores; thus, age does not appear to be a confounding variable with respect to the aforementioned variables.

Spearman rho correlations indicated that people with more years of education were more likely to score higher on IRRS-B (r=.096, p<.041), although this may be due to the African American group reporting more years of education when the Caucasian

and Hispanic group. Further analyses indicate that there is a significant relationship between IRRS scores and years of education for the African American group only (r= .179, p= .032) while the relationship between IRRS and years of education for the Caucasian and Hispanic group are non-significant. Years of education was also positively associated with total quality of life (r=.147, p=.002).

Income was positively related to total QOL scores (r=.308, p<.001) and ER89 scores (r=.097, p<.05). There was a negative relationship between income and PSS scores (r=-.215, p<.001).

Table 3. Means and Standard Deviations

Variables	Caucasian		African American		Hispanic/ Latino	
	Mean	SD	Mean	SD	Mean	SD
ER89*	41.97	5.86	43.21	5.52	43.71	5.56
PSS	18.05	7.22	16.50	7.80	18.18	7.67
DSP TSS	127.74	31.65	122.21	30.68	129.68	32.97
DSP-EF Domain	32.83	11.60	33.04	11.04	32.43	11.79
DSP-ER Domain*	34.66	13.65	30.33	13.72	35.45	14.37
IRRS*	28.69	8.193	52.84	14.48	41.27	15.25
WHO-QOL BREF	98.56	14.23	98.11	15.78	96.17	16.90
MEIM-R*	29.51	6.925	38.95	5.885	36.03	7.27
PRCOPE*	12.62	6.62	21.05	6.33	17.56	7.69
NRCOPE*	8.40	2.50	10.19	4.18	9.25	3.37
AGE	29.94	14.37	31.36	1.32	23.80	15.61

ER89= ego-resilience, PSS= perceived stress, DSP TSS= total stress, DSP-EF= environmental factors, DSP-ER= emotional response, IRRS= race-related stress, WHO-QOL BREF= quality of life, MEIM= ethnic identity, PRCOPE= positive religious coping, NRCOPE= negative religious coping

Table 4. Correlations

Variable	2	3	4	5	6	7	8	9	10	11	12	13
1. ER	**-.431	**-.510	**-.486	**-.522	*.103	**.201	**.448	*.091	**-.113	**.031	**.105	**.096
2. PSS	-----	**.753	**.755	**.563	**.075	**-.111	**-.692	-.062	**.281	*.088	**-.228	*-.105
3. DSP-TSS		-----	**.895	**.778	**.128	**-.130	**-.741	-.061	**.299	*.092	**-.182	**-.159
4. DSP-ER			-----	**.598	.072	**-.116	**-.679	**-.103	**.269	**.144	**-.183	**-.191
5. DSP-EF				----	*.087	**-.138	**-.707	-.065	**.221	-.021	**-.167	*-.094
6. IRRS-B					----	**.500	**-.197	**.331	**.270	**-.294	.030	*.105
7. MEIM-R						-----	**.128	**.418	**.139	**-.161	.049	*.089
8. WHO-QOL BREF							----	.060	**-.313	-.047	**.309	**.158
9. PRCOPE								-----	**.326	**-.190	*.080	*.094
10. NRCOPE									----	*-.113	-.025	-.048
11. Race/Ethnicity										----	*-.078	-.067
12. Income											-----	**.186
13. Education												

 *denotes significance p<.05, **denotes significance p<.01

Multiple Comparisons

ANOVA's by race were conducted to determine if there were significant

differences in scores on study variables between racial/ethnic groups. Results indicate that there is a significant difference in ego-resilience via ER89 scores (F(2, 550)= 4.81, *p<.01),* ethnic identity via MEIM-R scores (F(2, 460)= 85.65, *p<.01)*, race-related stress via IRRS-B scores, (F(2, 453)= 146.38, *p<.01)*, positive religious coping via PRCOPE scores (F(2, 464)= 63.21, *p<.01)* , negative religious coping via NRCOPE scores (F(2, 464)= 11.57, *p<.01)*, and emotional response to stressors via DSP-ER domain scores (F(2, 485)= 6.052, *p<.01)* between groups. There were no differences in perceived stress via PSS scores, total stress via DSP-TSS scores, quality of life via WHO-QOL BREF scores, or environmental factors via DSP-EF scores between groups.

Tukey's Post Hoc analyses were conducted to determine the significant differences in study variables between the Caucasian, African American, and Hispanic groups. Tukey's Post Hoc analyses indicated that the Hispanic/Latino group had higher ER89 scores when compared to the Caucasian group (mean difference= 1.75, p<.01). These results indicate that on average, the Hispanic/Latino group reported higher ego-resilience when compared to Caucasian Americans. The African American group did not significantly differ from the Hispanic/Latino or Caucasian group on ER89 scores although the mean ER89 scores between the African American and Hispanic/Latino group approached significance (mean difference=1.25, p=.079). Study hypotheses predicted that both African American and Hispanic/Latino participants would score higher on ethnic identity via the MEIM and race-related stress via the IRRS-B when compared to the Caucasian participants. Hypotheses for scores between the African

American group and Hispanic-Latino group were withheld. In support of study

hypotheses, both the African American and Hispanic/Latino group participants had

significantly higher IRRS-B scores (mean difference—AA= 24.15, p<.01; H/L= 11.57,

p<.01) and MEIM (mean difference—AA= 9.44, p<.01; H/L= 6.53, p<.01) scores when

compared to the Caucasian group. The African American group had significantly higher

MEIM-R scores (mean difference= 2.92, p<.01) and IRRS-B scores (mean difference=

11.57, p<.01) when compared to the Hispanic/Latino group. These results indicate that

both the African American and Hispanic/ Latino group reported experiencing

significantly more race-related stress and a stronger ethnic identity than the Caucasian

group. When compared to the Hispanic/Latino group, the African American group

reported significantly higher IRRS-B scores (mean difference= 11.57, p<.01) and higher

MEIM-R scores (mean difference= 2.922, p<.01) when compared to the Hispanic/Latino

group. These results indicate that African Americans report experiencing more race-

related stress and have a stronger ethnic identity that the Hispanic/Latino group. Tukey's

Post Hoc analyses indicate that the African American group had higher PRCOPE and

NRCOPE scores than both the Caucasian (PRCOPE-- mean difference= 8.43, p<.01;

NRCOPE—mean difference= 1.79, p<.01) and Hispanic/Latino group (PRCOPE-- mean

difference= 3.49, p<.01; NRCOPE—mean difference= .94, p=.05). The Hispanic/Latino

group reported higher PRCOPE scores when compared to the Caucasian group (mean

difference= 4.95, p<.01). These results indicate that African American participants

reported utilizing more positive and negative religious coping than the Hispanic/Latino

and Caucasian participants, while the Hispanic/Latino participants reported utilizing higher positive religious coping when compared to the Caucasian group. The African American group scored significantly lower on the DSP-ER domain when compared to the Hispanic/Latino group (mean difference= -5.11, $p<.01$) and the Caucasian group (-4.33, $p<.05$), indicating that African Americans reported experiencing less emotional response to stress (i.e., anxiety, hostility, depression) when compared to the Hispanic/Latino and Caucasian group. There was no significant difference in DSP-ER domain scores between the Hispanic/Latino and Caucasian group. Later analyses will further examine the impact of racial/ethnic group differences by entering race as an independent variable when examining relationships between predictor and outcome variables to further examine the impact of group differences in reported levels of ego-resilience, ethnic identity, race-related stress, positive religious coping, negative religious coping, and emotional responses to stress between groups. If race is a significant independent predictor in subsequent regression models, separate analyses will be ran for each racial/ethnic group.

Hypothesis: Testing Simple Mediation using
Regression Analysis

The first hypothesis proposed that the relationship between ego-resilience and overall quality of life would be mediated by perceived stress for all three racial/ethnic groups. According to Baron & Kenny, four conditions are necessary to establish mediation (using regression analysis): (1) The independent variable (ego-resiliency) has a significant relationship with the outcome variable (total QOL); (2) the independent

variable (ego-resilience) has a significant relationship with the mediator (perceived

stress); (3) the mediator (perceived stress) affects the outcome variables (total QOL),

while controlling for the independent variable (ego-resilience); (4) the relationship

between the independent variable (ego-resilience) and the dependent variable (total QOL)

should be weaker when the mediator is added. We will test for mediation while

controlling for potential confounds (education, income, and age).

After potential confounds (education, income, and age) were entered into the first

block, race/ethnicity was first entered into the regression model, and was not a significant

predictor of ego resilience scores (β=-.029, *ns*). Results show that (1) ER89 scores was a

significant and positive predictor (β=.420, *p* <.01) of quality of life, accounting for 16%

in life quality via the WHO-QOL BREF. (2) ER89 scores was a significant negative

predictor of PSS scores (β=-.408 p<.01). Ego-resilience accounted for 15% of the

variance in perceived stress scores. Refer to table 4. (3) An independent regression also

indicated that PSS scores was a significant negative predictor (β= -.632, *p* <.01) for

WHO-QOL BREF scores, accounting for 36% of the variance in overall quality of life.

Refer to table 5. (4) Results show that after perceived stress was taken into account, the

effects of ego-resilience (β=.204, p<.01), became weaker, yet still significant, providing

evidence for partial mediation. Race had no significant impact on these effects, as race

was a non-significant predictor in all four steps for mediation.   Separate analyses for

mediation were ran for each racial/ethnic group and medication was met independently

for each group.

Table 4. Regression with Ego-Resilience as the
Predictor Variable

Outcome	r^2	β	t	Sig.
Total QOL	.162	.409	9.983	.000
Perceived Stress	.164	-.408	-8.134	.000

Table 5. Regression with Perceived Stress as the
Predictor Variable

Outcome	r^2	β	t	Sig.
Total QOL	.355	-.632	-14.820	.000

Table 6. Regression with Ego-Resilience as a
Predictor while Controlling for Perceived Stress

Outcome	r^2 (PS/ER)	β (PS/ER)	t	Sig. (PS/ER)
Total QOL	.355	-.548	-12.133	.000
	.032	.204	4.622	.000

Next, (Step 4) the Sobel test was used to determine if the relationship between

ego-resilience was significantly weakened after perceived stress was taken into account.

The Sobel test statistic ($F (6, 311) = 4.67$) was significant ($p<.001$) therefore evidence for

partial mediation was met.

These results indicate that the study hypothesis for simple mediation was

supported.   Results indicated that for a multi-ethnic sample, ego-resilience predicts life

quality as partially mediated through perceived stress; thus, people who scored higher on

ego-resilience were more likely a higher quality of life as influenced through perceived

stress.

<u>Hypothesis: Full Model</u>

Study variables were entered into the regression model in a stepwise fashion to

examine the overall fit of the model after controlling for age, income, and education

(demographic variables). In a stepwise fashion, age, income, education, and race were

entered into the first block; ER89 was added into the second block; stressors were added

into the third block (PSS, DSP-EF domain, DSP-ER domain, IRRS); and MEIM,

PRCOPE and NRCOPE were entered into the fourth and final block. Within the full

model, ER89 scores was not a significant predictor of WHO-QOL BREF scores

considering all other variables in the model (β=.48, *ns*). One possible explanation is that

given that previous results indicated that ego-resilience is mediated by perceived stress,

ego-resilience is likely fully mediated by the stressors block, becoming non-significant

when the multiple stressors are added. Given that ER89 was a significant predictor of

quality of life in the block without the stressors added, this is a plausible hypothesis.

Positive religious coping was also not a significant predictor of WHO-QOL BREF scores

when entered into the full model (β=.034, *ns*). However, PSS (β=-.222, *p<.01*),

DSP-EF domain, (β=-.407, *p<.01*), DSP-ER domain (β=-.122, *p<.05*), IRRS-B (β=-.183, *p<.01*),

MEIM-R (β=.235, *p<.01)*, and NRCOPE (β=-.141, *p<.01*) scores were all significant predictors in the full model. Next we reran the models separately for each racial/ethnic group (while controlling for income, education, and age) to determine if race/ethnicity differentiates the relationship among variables. For the Caucasian group, the full model was significant, accounting for 79% of the variance in reported WHO-QOL BREF scores. Upon examining individual predictors in the full model, DSP-EF domain scores (β=-.531, *p<.01*), IRRS-B scores (β=-.111, *p<.05*), and NRCOPE (β=-.172, *p<.01*) scores were significant predictors of total QOL scores. ER89 was significant (β=.427, *p<.01*), in the first block which included the controlling variables (age, income, and education) and prior to adding the stress domain. Positive religious coping was not a significant predictor of total WHO-QOL BREF scores for the Caucasian American group (β=.052, ns). PSS scores approached significance (β=-.149, *p=.069*) as a predictor in the full model for the Caucasian group.

For the African American group, the full model was significant, accounting for 71% of the variance in QOL scores. In the full model, PSS scores (β=-.228, *p<.01*), DSP-EF scores (β=-.246, *p<.01*), DSP-ER scores (β=-.276, *p<.01*), IRRS-B scores (β=-.154, *p<.05*), and NRCOPE (β=-.158, *p<.05*) scores were significant predictors of total WHO-QOL BREF scores. ER89 scores (β=.002, ns), and PRCOPE scores (β=-.264, ns), were not significant predictors of WHO-QOL BREF scores given all other variables in the model. However, ER89 was a significant predictor (β=.374, *p<.01*) in the first block which included the controlling variables (age, income, and education) and prior to adding

the stress domain.

For the Hispanic/Latino American group, the full model was significant, accounting for 73% of the variance in reported WHO-QOL BREF scores. PSS scores (β=-.357, *p<.01*), DSP-EF domain scores (β=-.431, *p<.01*) were significant predictors of WHO-QOL BREF scores given all other variables entered into the model. IRRS-B scores (β=-.106, *ns*), MEIM-R scores (β=.015, *ns*) NRCOPE (β=-.049, *ns*), PRCOPE (β=.024, ns), were not significant predictors of WHO-QOL BREF scores given all other variables in the model. Following the trend of the Caucasian and African American group, ER89 scores was not a significant predictor of WHO-QOL BREF scores in the full model (β=.023, *ns*), but was a significant predictor in second block prior to the stress domain being added (third block) into the model (β=429, *p<.01*).

In partial support of study hypotheses, for the African American group, race-related stress and ethnic identity were unique predictors of life quality given all other variables; however, ethnic identity was not a unique contributor to quality of life scores for Hispanic Americans and Caucasian Americans. Surprisingly, race-related stress was a significant negative predictor of life quality for the Caucasian group, but not the Hispanic/Latino group, although it approached significance. For the African American and Hispanic/Latino group, emotional responses to stress had a unique impact on life quality (considering all other variables in the model), but not for Caucasians. Surprisingly, given all other variables entered into the model, ego-resilience was not a predictor of life quality when the stressors domain was added for all three groups.

The F change statistic was calculated to determine if each block was a unique contributor to the model across groups. For the Hispanic/Latino group, there was a significant F change when the ER89 block was added to the model (F change= 27.78, p<.01), accounting for 17% of additional variance in QOL scores (r squared change = .171). There was a significant F change when the stress block including PSS, DSP-EF, DSP-EF, and IRRS-B was added (F change= 25.18, p<.01), accounting for 30% additional variance in WHO-QOL BREF scores; however, the stress resistance/amplifier block including MEIM-R scores, PRCOPE scores, and NRCOPE scores did not result in significant F change (F change= .207, ns).

For the African American group, there was a significant F change when the ER89 block was added to the model (F change= 17.27, p<.01), accounting for 13% of additional variance in WHO-QOL BREF scores (r squared change = .126); there was a significant F change when the stress block including PSS, DSP-EF, DSP EF, and IRRS-B was added (F change= 25.58, p<.01), accounting for 38% additional variance in QOL scores; and, the stress resistance/amplifier block including MEIM scores, PRCOPE scores, and NRCOPE scores resulted in significant F change (F change= 9.78, p<.01), accounting for 9% of additional variance in QOL scores (r squared=.087).

For the Caucasian group, there was a significant F change when the ER89 block was added to the model (F change= 21.59, p<.01), accounting for 16% of additional variance in QOL scores (r squared change = .155); there was a significant F change when the stress block including PSS, DSP-EF, DSP EF, and IRRS was added (F change=

38.50, p<.01), accounting for 41% additional variance in QOL scores (r squared change = .414); and, the stress resistance/amplifier block including MEIM scores, PRCOPE scores, and NRCOPE scores resulted in significant F change (F change= 3.21, p<.05), accounting for 2% additional variance in QOL scores (r squared change=.024).

Table 7. Full Model with WHO-QOL Bref as Outcome:
Combined Groups

Δr^2	Predictor	β	t	Sig.
.151	Age	-.119	-3.234	.001
	Income	.159	4.499	.000
	Education	.071	2.121	.035
	Race	-.066	-1.849	.065
.161	ER89	.048	1.181	.239
.377	PSS	-.222	-4.328	.000
	DSP-EF	-.407	-9.536	.000
	DSP-ER	-.122	-2.215	.028
	IRRS-B	-.183	-4.576	.000
.024	MEIM-R	.116	2.931	.004
	PRCOPE	.001	.034	.973
	NRCOPE	-.141	-3.857	.000

Table 8. Full Model with WHO-QOL Bref as Outcome:
Caucasian Group

Δr^2	Predictor	β	t	Sig.
.200	Age	-.119	-1.984	.051
	Income	.103	1.764	.081
	Education	.056	.989	.326
.155	ER89	.094	1.373	.173
.414	PSS	-.149	-1.843	.069
	DSP-EF	-.531	-7.532	.000
	DSP-ER	-.120	-1.388	.169
	IRRS-B	-.111	-2.011	.048
.024	MEIM-R	.086	1.583	.117
	PRCOPE	.052	.914	.363
	NRCOPE	-.172	-2.825	.006

Environmental Factors (DSP-EF), Emotional Response (DSP-ER), and Race-Related Stress (IRRS_B) as Predictors of Life Quality (WHO-QOL BREF)

In a regression model with both DSP-EF domain, DSP-ER domain, and IRRS-B entered stepwise, race-related stress was a unique contributor to QOL above and beyond general stress and emotional response to stress for African Americans (β=-.162, p<.01) and Hispanic Americans(β=-.228, p<.01), and surprisingly, Caucasian Americans (β=-.105, p<.05).

Table 9. Full Model with WHO-QOL Bref as Outcome:
African American Group

Δr²	Predictor	β	t	Sig.
.114	Age	-.061	-.941	.349
	Income	.180	2.872	.005
	Education	.017	.258	.797
.126	ER89	.002	.026	.979
.384	PSS	-.228	-2.752	.007
	DSP-EF	-.246	-3.302	.001
	DSP-ER	-.276	-3.098	.003
	IRRS-B	-.154	-2.238	.028
.087	MEIM-R	.278	4.165	.000
	PRCOPE	-.016	-.264	.793
	NRCOPE	-.158	-2.509	.014

Hypothesis: Environmental Factors (DSP-EF) Domain,
Emotional Response to Stress (DSP-ER) Domain, and
Race-Related Stress (IRRS-B) as Predictors of
Perceived Stress across Ethnic Groups

Next, to determine the impact of environmental factors, emotional response to stress, and

race-related stress on perceived stress across groups, the authors' examined DSP-EF

domain scores, DSP-ER domain scores, and IRRS-B scores as predictors of PSS scores

across ethnic groups, by entering the predictors in a regression model. In accordance

with study hypothesis, DSP-EF scores (β=.164, *p<.01*), DSP-ER scores (β=.644, *p<.01*)

but not IRRS-B scores (β=.013, *ns*) predicted perceived stress scores for the Caucasian

Table 10. Full Model with WHO-QOL Bref as
Outcome: Hispanic/Latino Group

Δr^2	Predictor	β	t	Sig.
.257	Age	-.193	-2.883	.005
	Income	.207	3.276	.002
	Education	.109	1.760	.082
.171	ER89	.023	.313	.755
.304	PSS	-.370	-3.355	.001
	DSP-EF	-.431	-5.476	.000
	DSP-ER	.034	.300	.765
	IRRS-B	-.105	-1.690	.095
.002	MEIM-R	.015	.226	.822
	PRCOPE	.024	.373	.710
	NRCOPE	-.049	-.741	.460

group. For the African American group, both DSP-EF scores (β=.231, *p<.01*), and DSP-

ER scores (β=.592, *p<.01*) were significant predictors of PSS scale scores. Contrary to

study hypotheses, IRRS-B scores (β=.068, *ns*) did not significantly predict PSS scores for

the African American group. For the Hispanic/Latino group, DSP-ER scores (β=.699,

p<.01) was the only significant predictor of PSS scores, while the DSP-EF domain scores

approached significance (β=.137, *p=.055*). Race related stress was not a significant

predictor of perceived stress for the Hispanic-Latino group (β=-.016, *ns*).   These results

indicate that both environmental stressors and emotional responses to stressors contribute

to reported stress perception for the African American and Caucasian group, while only

emotional responses to stress significantly predicted perceived stress for the

Hispanic/Latino group.   Unexpectedly, race-related stress did not predict reports of

perceived stress above and beyond reported emotional responses to stress and

environmental stressors for any group.   For the Caucasian and Hispanic/Latino group,

race related stress alone did not predict reported perceived stress (H/L-- β=.096, *ns; C--*

β=.090, *ns*).   For the African American group, reported race-related stress as an

independent predictor did predict reported perceived stress (β=.263, *p<.01*).

Table 11. Environmental Factors (DSP-EF), Emotional
Response to Stress (DSP_ER) and Race-Related
Stress (IRRS-B) as Predictors of Perceived Stress:
Caucasian Group

r^2	Predictor	β	t	Sig.
.561	DSP-EF	.164	2.679	.008
	DPS-ER	.644	10.436	.000
	IRRS-B	-.013	-.264	.792

Table 12. Environmental Factors (DSP-EF), Emotional
Response to Stress (DSP_ER) and Race-Related Stress
(IRRS-B) as Predictors of Perceived Stress: African
American Group

r²	Predictor	β	t	Sig.
.595	DSP-EF	.231	3.477	.001
	DPS-ER	.592	8.595	.000
	IRRS-B	.068	1.206	.230

Table 13. Environmental Factors (DSP-EF), Emotional
Response to Stress (DSP_ER) and Race-Related Stress
(IRRS-B) as Predictors of Perceived Stress:
Hispanic/Latino American Group

r²	Predictor	β	t	Sig.
.629	DSP-EF	.137	1.933	.055
	DPS-ER	.699	9.841	.000
	IRRS-B	-.016	-.294	.770

Exploratory Analyses: Impact of Ego Resilience
(ER89) on Life Quality as Mediated by
Environmental Factors (DSP-EF) and
Emotional Response to Stress (DSP-ER)

In the full model, the impact of ego-resilience on life quality was no longer

significant considering the stressors block which consisted of environmental factors via

the DSP-EF domain, emotional response to stress via the DSP-ER domain, and race-

related stress via the IRRS-B. We hypothesized that ER89 was no longer a significant

predictor of life quality in the full model, likely because the stressors domain mediated

ego-resilience as a predictor of life quality. Thus, we will test for mediating effects of the

environmental factors and emotional response to stressors. Again, we will use Baron and

Kenny's method for mediation while controlling for potential compounds (education, income, and age). We will test for mediation with all three groups combined since the trend for hypothesized mediation held across all three groups. Race was entered as a factor to further test its effects. We will report on steps 2 through 4 given that step 1 was reported above in the first test for mediation.

After potential confounds (education, income, and age) were entered into the first block, race was entered into the second block for all four steps testing mediation. First, we tested emotional response to stress via the DSP-ER domain as a mediator of ego-resilience via the ER89 and life quality via the WHO-QOL BREF. Results show that ER89 scores was a significant negative predictor of DSP-ER domain scores (β=-.466 p<.01). Ego-resilience accounted for 20% of the variance in DSP-ER domain scores. Race was a significant predictor in this model (β=-.139 p<.01). DSP-ER domain scores was a significant negative predictor (β= -.632, p <.01) for WHO-QOL BREF scores, accounting for 34% of the variance in overall quality of life. Race was not a significant predictor of WHO-QOL scores in this model (β=-.034 p, ns). Results show that after DSP-ER domain scores was taken into account, the effects of ego-resilience (β=.161, p<.01), became weaker, yet still significant, providing evidence for partial mediation. These results indicate that ego-resilience has a significant impact on life quality as partially mediated by one's emotional response to stress. Race/ethnic group differentiates the relationship between ego-resilience and emotional response to stress; however, race did not have an overall impact on the meditational relationship.

Next, we tested environmental factors via the DSP-EF domain as a mediator of ego-resilience via the ER89 and life quality via the WHO-QOL BREF, while controlling for potential confounds (education, income, age) and examining race/ethnic group effects. Results show that (2) ER89 scores was a significant negative predictor of DSP-EF domain scores (β=-.502 p<.01). Ego-resilience accounted for 24% of the variance in DS-EF domain scores. Race was not a significant predictor in this model (β=.015, ns) (3) DSP-EF domain scores was a significant negative predictor (β= -.664, p <.01) for WHO-QOL Brief scores, accounting for 41% of the variance in overall quality of life. Race was not a significant predictor of WHO-QOL BREF scores in this model (β=-.057 p, ns). (4) Results show that after DSP-EF domain scores was taken into account, the effects of ego-resilience (β=.112, p<.05), became weaker, yet still significant, providing evidence for partial mediation. Race was not a significant predictor of WHO-QOL scores in this model (β=-.063 p, ns). These results indicate that ego-resilience has a significant impact on life quality as partially mediated by environmental factors for this multi-ethnic sample.

Our tests for mediation indicate that the way ego-resilience impacts life quality as mediated through stress is multi-factorial. Results indicate that ego-resilience predicts a positive relationship with life quality as mediated through environmental factors, how one perceives stress, and one's emotional response to stress.

<u>Hypothesis: Stress-Resistance/Amplifier Model:</u>
<u>Ego Resilience, Ethnic Identity and Religious</u>
<u>Coping as predictors of Quality of Life</u>

We ran a regression model with potential stress resistance variables (ego-resilience, positive religious coping, ethnic identity) and a potential stress-inducing variable (i.e. negative religious coping) to determine if they are unique contributors to life quality; while examining whether race/ethnicity differentiates these relationships. For the Caucasian group, ego resilience scores was a positive predictor of QOL scores (β=.452, *p<.01*) while NRCOPE scores were a negative predictor of QOL scores (β=-.404, *p<.01*). PRCOPE scores (β=.143, ns) and ethnic identity scores (β=-.116, ns) did not significantly predict QOL scores. For the African American group, ego resilience scores (β=.322, *p<.01*) was a positive predictor of WHO-QOL BREF scores. NRCOPE scores was a negative predictor of QOL scores (β=-.382, *p<.01*). PRCOPE scores (β=.019, ns) and surprisingly MEIM scores (β=-.134, ns) did not significantly predict WHO-QOL BREF scores. For the Hispanic/Latino American group, ego resilience scores (β=.365, *p<.01*) was a positive predictor of WHO-QOL BREF scores. NRCOPE scores was a negative predictor of WHO-QOL BREF scores (β=-.218, *p<.05*). PRCOPE scores (β=.125, ns) and ethnic identity scores (β=-.034, ns) did not significantly predict WHO-QOL BREF scores.

<u>Table 14. Ego Resilience (ER-89), Ethnic Identity</u>
<u>(MEIM-R) and Religious Coping (PRCOPE,</u>
<u>NRCOPE) as predictors of Quality of Life</u>

(WHO-QOL): Caucasian Group

r²	Predictor	β	t	Sig.
.272	ER-89	.403	6.142	.000
	MEIM-R	.091	1.320	.189
	PRCOPE	.136	1.936	.054
	NRCOPE	-.285	-4.129	.000

Table 15. Ego Resilience (ER-89), Ethnic Identity (MEIM-R) and Religious Coping (PRCOPE, NRCOPE) as predictors of Quality of Life (WHO-QOL): African American Group

r²	Predictor	β	t	Sig.
.272	ER-89	.369	5.189	.000
	MEIM-R	.071	.983	.328
	PRCOPE	.117	1.608	.110
	NRCOPE	-.364	-5.016	.000

Table 16. Ego Resilience (ER-89), Ethnic Identity (MEIM-R) and Religious Coping (PRCOPE, NRCOPE) as predictors of Quality of Life (WHO-QOL): Hispanic/Latino American Group

r²	Predictor	β	t	Sig.
.282	ER-89	.407	5.115	.000
	MEIM-R	.051	.649	.518
	PRCOPE	.104	1.306	.194
	NRCOPE	-.238	-2.978	.003

<u>Hypothesis: Testing Moderated Mediation using</u>
<u>Ethnic Identity and Religious Coping</u>

First, the direct effect of ethnic identity and religious coping on both the mediator (perceived stress) and the outcome variable (quality of life) was examined. Neither positive religious coping (β=-.091, p=.353, *ns*) nor ethnic identity (β=-.086, p=.379, *ns*) had a significant impact on the mediator (perceived stress). Religious coping and ego-resilience were significant positive predictors of quality of life (β=.295, p<.01, β=.378, p<.001 respectively), which may make it difficult to clearly define moderator effects (Preacher, 2007).

Regressions were used with interaction terms to test for the potential for moderated mediation using the methods by Muller (2003) since moderators may strengthen a mediating effect. For moderated mediation, the overall magnitude of the strength of the relationship between the predictor and outcome variable depends on the moderator variable (Muller, 2003). In the current study, a moderated mediation model would be supported if religious coping or ethnic identity has an overall effect on quality of life and perceived stress. In general, it is not necessary for there to be a moderator effect on the mediator for moderated mediation to occur. This rule applies to the current study, but we will still test ethnic identity and religious coping as moderators for both the mediator (perceived stress) and outcome variable (quality of life). All tests with

interaction terms were ran on centered data in order to address the potential for multi-collinearity.

Contrary to the study hypotheses, as a combined sample the interaction between ethnic identity and ego-resilience did not significantly predict perceived stress (β=.134, p=.219, *ns*) or overall quality of life (β=-.060, p=.522, *ns*).   Interaction terms between ethnic identity scores and ego-resilience scores were reran independently for each ethnic group and were also non significant.

With the combined sample, the interaction between ego-resilience and religious coping was not a significant predictor of overall quality of life (β=-.141, p=.108, *ns*). The interaction between ego-resilience and religious coping as a predictor of perceived stress (β=197, p=.051) approached significance. This indicates that there is a trend towards a mediated- moderator model, where the interaction between religious coping and ego-resilience does not have an overall effect on the outcome, but still explains the strength of the mediation.   We re-tested moderation independently across racial ethnic groups. There was a significant negative interaction between positive religious coping and ego-resilience as a predictor of life quality for the Caucasian group (β=-.230, p=.016). All other interaction terms for each ethnic group were non-significant.

CHAPTER 4

DISCUSSION

Our results provide support for a stress-resistance model. Based on theoretical

models, stress resistance occurs when the introduction of resources reduces one's vulnerability to experience the negative consequences of stress (Lin & Ensel, 1989; Brennan &Moos, 1990). Multiple studies have found that as independent predictors, ego-resilience, positive religious coping, and ethnic identity predicted psychological health. There is clear evidence that stress is related to psychological distress (e.g., Ghorbani, et.al, 2008), but less evidence about the effects of stress on life quality, especially in minority populations. To add to the existing literature, this study focused on the links between stress, protective factors and overall life quality in a multi-ethnic sample. The potential stress resistance variables examined in this study were ego-resilience via the ER89, positive religious coping via the Brief RCOPE, and ethnic identity via the MEIM. Although previous studies have provided evidence that independently, these variables buffer the effects of stress, no studies have examined them as potentially unique contributors in a full model.

A primary hypothesis was that ego-resilience would be a positive predictor of life quality as mediated through perceived stress for our Caucasian, African American, and Hispanic-Latino sample. The first aim was to provide evidence that there was a relationship between ego-resilience and life quality, given that no studies to date have examined the direct relationship between these two variables. Results suggest that ego-resilience has a positive relationship with life quality for all three ethnic groups. We also found that racial/ethnic group differentiates reported ego-resilience. Interestingly, participants who identified as Hispanic/Latino scored higher on ego-resilience when

compared to Caucasian Americans. Future research on factors that account for this difference is warranted.

This second aim was to explain why this relationship occurred by examining perceived stress through a meditational model, to support our hypothesis that ego-resilience impacts stress perception, and thus impacts life quality. As predicted, the relationship between ego-resilience and quality of life was mediated through perceived stress for the combined multi-ethnic sample. Race was not a unique contributor in this model, nor was their significant interaction effects for race, indicating that this relationship holds true across ethnic groups. These results indicate that individuals who have high ego-resilience perceive lower levels of stress and in turn, have a better overall life quality.   It is hypothesized that individuals perceive lower levels of stress because they have more internal resources that affect how they perceive they can cope with current stressors. One interesting result from exploratory analyses was that the relationship between ego-resilience and life quality was also mediated through both general stressors (reported environmental events) and emotional responses to stressors across ethnic groups. These results shed light on ego-resilience as a robust predictor of life quality across ethnic groups via its impact on stress perception, emotional response to stress, and general stressors. Given that no studies to date have examined the direct effect of ego-resilience on perceived stress, there is a lack of evidence in the stress resistance literature about how ego-resilient people manage stress. It was unclear if ego-resilience has an effect on stress perception, amount of daily stressors, or how one responds

emotionally to stress. The current study provided evidence for all of the above. This study supports the stress resistance theory of Brennen and Moos (1990). It is likely that individuals who are less resilient perceive the environment as more threatening because they have fewer (psychological) resources available to manage the environment, lack the skills to reduce the amount of stress they experience on a daily basis, and are more emotionally reactive when face with stress.

These results are contrary to the study by Spangler (1997) where ego-resilience did not predict perceived stress as it related to a specific task (test-taking). It is likely that since ego-resilience is a more stable trait, it is more predictive when measuring more generalized stress reactions. Future studies could examine the link between ego-resilience and stress perception overtime to provide further evidence in this area.

Results indicated that for African Americans and Hispanic/Latino Americans, ego-resilience is unique above and beyond the use of religious coping and ethnic identity. Ethnic identity and religious coping have been studied as cultural resources in the absence of ego-resilience when examining stress in the African American and Hispanic/Latino communities and these results highlight an important resource that has been overlooked. There is utility in finding predictors for life quality, given that African Americans and Hispanic Latino Americans disproportionately represent lower socioeconomic status groups and as a result often experience more daily stressors than other ethnic groups (Arcia, Keyes & Gallagher, 1994; Canino, Gould, Prupris, & Shaffer, 1986; Centers for Disease Control and Prevention, 1999), which negatively impacts life

quality.

There were no differences in reported perceived stress, total stress, quality of life, or environmental factors, between groups. These results were somewhat surprising given that previous research has identified multiple stressors that disproportionately affect Hispanic/Latinos and African Americans (Araujo & Borrell, 2006; Arcia, Keyes & Gallagher, 1994; Canino et.al, 1986; Centers for Disease Control and Prevention, 1999). One explanation for these findings is that our samples were similar in respect to factors that contribute to socio-economic status (i.e., income, education). Our samples were well-educated, and had a wide range of incomes (including being well-represented by incomes greater than $100,000 annually) across ethnic groups. Although it is well documented that Hispanic/Latinos and African Americans disproportionately experience higher levels of stress, many of these stressors are likely to be confounded by also disproportionally representing lower SES groups.

We examined the impact of environmental factors, (i.e., home, health, and work stress) emotional response to stress (i.e., anxiety, hostility, and depression), and race-related stress on perceived stress across groups. As expected, environmental stressors and emotional responses to stress, but not race-related stress predicted perceived stress scores for the Caucasian group. For the African American group, both environmental stressors and emotional responses to stress were significant predictors of perceived stress. Contrary to study hypotheses, race-related stress did not significantly predict reported perceived stress African American group, which suggests African Americans utilize

protective factors that have the specificity to buffer the negative affects of race-related stress. For the Hispanic/Latino group, emotional responses to stress was the only significant predictor of reported perceived stress, suggesting that Hispanic/Latinos utilize stress buffers for both general, and race-related stress. In sum, both environmental stressors and emotional responses to stressors contribute to reported stress perception for the African American and Caucasian group, while only emotional responses to stress significantly predicted perceived stress for the Hispanic/Latino group. Unexpectedly, race-related stress did not predict reports of perceived stress above and beyond reported emotional responses to stress and environmental stressors for any group.

Another interesting finding was that despite experiencing higher levels of race-related stress, having no differences in reported environmental stressors, and similar levels of perceived stress when compared to Caucasian and Hispanic Latino participants, African Americans were less negative emotional responses to stress (i.e., anxiety, hostility, depression). Although previous studies provided evidence for the harmful effects of race-related stress, these results indicate that while in the context of a broader stress resistance model, the African American participants effectively manage higher levels of race-related stress in addition to general stressors, as they are less emotionally responsive to stress when compared to Hispanic/Latinos and Caucasians.

In support of study hypotheses, both the African American and Hispanic/Latino participants reported experiencing higher levels of race-related stress when compared to Caucasian participants. These results further highlight the importance of measuring race-

related stress when assessing daily sources of chronic stress in African American and Hispanic/Latino populations. Of note, there are no published studies that compared levels of reported race-related stress across different racial/ethnic groups. In addition, only three studies to date have measured race-related stress in a Hispanic/Latino population (Cruz, 2011; Reynolds, Sneva, & Beehler, 2010, Lopez, 2005).

Future research on race-related stress in other ethnic minority groups is needed, as it is possible that race-related stress is a unique contributor to chronic stress for most ethnic minorities. One surprising result was that despite, on average, reporting lower levels of race-related stress when compared to African American and Hispanic/Latino participants, race-related stress had a significant negative impact on life quality for Caucasian participants. One explanation for these results is that given that Caucasian participants experienced race-related stress relatively less frequently when compared to the Hispanic/Latino and African American participants, they were fewer available resources to cope with this specific stressor, so that is still had a significant impact on life quality. It is also possible that the impact of race related stress varied based on different subgroups of participants who identified as Caucasian (i.e., Jewish, Italian) and future research in this area is warranted. As expected, race-related stress had a negative impact on life quality for African Americans, but surprisingly not for Hispanic/Latino Americans. In consideration of the lack of existing literature which could account for this discrepancy, it may be that despite experiencing higher levels of race-related stress (when compared to Caucasian Americans) and similar levels of race-related stress when

compared to African American, Hispanic Americans utilize unique protective factors which buffer the negative effects of race-related stress. For example, Hispanic/Latino Americans might have more familial support when compared to the African American group. Although both groups are of an ethnic minority, the race-related stressors experienced are likely to differ. It is may be that the types of racial stressors experienced by African Americans have a more negative impact on life quality when qualitatively compared to the racial stressors experienced by the Hispanic-Latino group. It may also be that the IRRS-B did not fully capture the types of racial stressors experienced by Hispanic/Latinos. It is important to note that the IRRS-B was initially designed for African Americans. For other racial/ethnic groups, it may not pinpoint the type of stressors they face. For example, IRRS-B does not include racial discrimination unique to immigrant populations, which may have been a factor for our Hispanic/Latino population.   Given that the negative relationship between race-related stress and life quality for the Hispanic-Latino group approached significance, it is also possible that with a larger n, a small effect in this relationship might be found.

The current stress literature was lacking a comprehensive stress assessment that included both general stressors (i.e., home, health, work stress) and race-related stress as sources of daily stress in ethnic minority populations, and our results support that a more comprehensive stress assessment is needed. Considering study findings, measures of daily stressors should include items pertaining to race-related stress, ethnicity-related stress, and or discrimination to improve measurement of stressors that people face in

addition to their response to perceived stress. An improved understanding of stressors and reaction to stressors related to being of an ethnic or racial group will help identify additional protective factors for these unique stressors. For example, results indicated that despite experiencing higher levels of race-related stress when compared to Caucasian participants, life quality was not negatively impacted (i.e., there were no differences in scores for life quality between groups).

The MEIM-R measures two factors—affirmation/belonging and exploration (Roberts et.al, 1999). Sense of belonging includes positive feelings towards one's ethnic group, while exploration involves interacting with members of one's ethnic group. Combined, we predicted that ethnic identification would be a positive predictor of life quality for participants who either identified as African American or Hispanic/Latino. A previous study found that ethnic identity was the best positive predictor of life quality when compared to gender, ethnicity, and race-related stress (Utsey, Chae, Brown, Kelly, 2002). Our results were similar; we found ethnic identity to be a stronger predictor of life quality when compared to the aforementioned variables (excluding gender), indicating that the protective factors which may be unique to one's culture have a greater impact on life quality than racial/ethnic-specific stressors, likely because these groups have found unique ways to cope with unique stressors.

As expected, African American and Hispanic/Latino participants reported a stronger ethnic identity when compared to the Caucasian participants. Although hypotheses for differences in the magnitude of ethnic identification between the African

American group and Hispanic-Latino group were withheld, it was somewhat surprising that African Americans reported a significantly stronger ethnic identity than Hispanics/Latinos. Considering the lack of empirical evidence in the existing literature which could provide explanation for these differences, one could have speculated that Hispanics would have had stronger ethnic identification given that a large proportion of their population includes immigrants, first generation, and second generation Americans, which could potentially result in being more connected to a different national heritage when compared to African Americans. Results suggest that African Americans perhaps have even stronger sense of belonging and community ties when compared to Hispanic/Latinos that in turn influences ethnic identification. However, results do not suggest that ethnic identity is not a unique protective factor for Hispanic/Latinos; rather results highlight a need for future research accounting for differences between these ethnic groups. Another factor for consideration is that the term Hispanic/Latino refers to a heterogeneous group, and it is possible that strength of ethnic identification may vary based on national heritage within the Hispanic/Latino culture.

Positive religious coping represents a "secure relationship with whatever one holds sacred", while negative religious coping is "reflective of tension, conflict, and struggle with the sacred" (Pargament, Fueille, & Burdzey, 2011). Whereas previous studies used the Brief RCOPE to measure religious coping as a response to life crises such as a medical illness (e.g., Ai et.al, 2009) or serious life event (e.g., Pargament et.al, 1998); research on the use religion to cope with daily stressors is limited. Hence, our

study aim was to examine the utility of religious coping as a protective factor that is potentially utilized in the face of daily stressors, and how it's impact on life quality in a multi-ethnic sample.

African American participants reported utilizing positive and negative religious coping more frequently when compared to both the Hispanic/Latino and Caucasian participants. Hispanic/Latino participants reported utilizing positive religious coping more frequently when compared to the Caucasian group. Results partially support previous research by Utsey and colleagues (2008). For African Americans and Hispanic/Latinos, religious and spiritual coping may serve as a positive coping resource because it is in line with positive thinking and acceptance (e.g. "praying for the best").

The study hypotheses that both religious coping and ethnic identity would moderate the effects of ego-resilience on total quality of life were not met. Rather, ethnic identity and negative religious coping served as independent predictors for ego-resilience and quality of life. Instead of religious coping and ethnic identity interacting with ego-resilience to predict overall life quality, each variable acts independently. Although they may be unique predictors of overall life quality, they may still be interrelated as protective factors.

All variables were added into a full model to understand which variables would contribute to unique variance in life quality while considering all variables entered into the model. Our results suggest that ethnicity/race differentiates how stress and stress resistance variables will influence life quality. For African Americans and Caucasian

Americans, race-related stress and negative religious coping had a significant negative impact on life quality (while considering all study variables in the model), but not for Hispanic/Latino Americans.

For all three groups, environmental stressors (home, health, work), emotional response to stress, were significant predictors of life quality. Perceived stress negatively impacted life quality for the Hispanic and African American participants, but not the Caucasian participants. Positive religious coping had no significant impact on life quality for all three groups.

In partial support of study hypotheses, for the African American group, race-related stress and ethnic identity were unique predictors of life quality given all other variables; however, ethnic identity was not a unique contributor to quality of life scores for Hispanic Americans and Caucasian Americans. Surprisingly, race-related stress was a significant negative predictor of life quality for the Caucasian group, but not the Hispanic/Latino group, although it approached significance. For the African American and Hispanic/Latino group, emotional responses to stress had a unique impact on life quality (considering all other variables in the model), but not for Caucasians.

One important consideration is that race-related stress measures not only reactions to events personally experienced, but also measures perceptions of racism in the environment, making its measurement susceptible to historical events. For example, events such as the presidential election and highly publicized racial profiling cases likely altered individuals' perceptions of racial stress, especially when considering forms of

institutional racism. It is possible that levels of race-related stress may have fluctuated daily (partially based on societal events), and given that data collection took place over a three month period, there may be some variability within groups based on when participants competed the IRRS-B.

One unexpected result was that within the full model (which included stress variables and protective factors), ego-resilience was not a significant predictor of life quality. We later presumed that ego-resilience was likely fully mediated by the stressors block which included perceived stress, emotional responses to stress, and stressful events, and subsequently through exploratory analyses, found support for this hypothesis. These results add to the existing literature because it provides an explanation for how ego-resilience affects quality of life as mediated though perceived stress, environmental stressors, and emotional response to stress. Our results suggest that highly ego-resilient individuals manage their environment in ways that predicts fewer environmental stressors (when compared to their less ego-resilient counterparts), potentially perceive events as less stressful, and have are emotionally reactive to stressful events. Results suggest that this multi-faceted approach to managing stress accounts for the variation in life quality.

For the African American participants, ethnic identity was a positive predictor of life quality given all other variables entered into the model. Ethnic identity may be unique in that it also includes a sense of belonging and pride in culture, which is not measured by ego-resilience. This reiterates the cultural model of stress resistance, whereby it is important to consider both cultural and psychological resources as

protective factors.

Despite the intriguing findings of this study, there are limitations. The study was conducted online, and although it included a broader demographic (in respect to age, income and education), it did not include a population of individuals who are unlikely to respond to internet research, and may not be generalizable across groups. The study consisted of a combined college and community sample. There may have been differences in responses between the community and college sample; however, data collection methods did not allow analyses of these differences. This study may also have limitations with respect to the demographic sample this study represents based on income and education. The African American participants reported more years of education than the Caucasian and Hispanic/Latino participants, which does not represent the national average. Generally, across all three groups, individuals with higher incomes and more years of education are over-represented in this sample. However, this study does provide useful information about stress and resiliency for this demographic. To date, there is no clear evidence that the stress buffering variables found in this study would be different for a different demographic. On the contrary, this study found no significant group differences in scores on ego-resilience, ethnic identity, or religious coping based on different education levels. This study also found that there was no significant relationship between income and ego-resilience, ethnic identity, or religious coping. An additional limitation is we limited our population to three racial/ethnic groups. Future research could include other ethnic groups to determine if ego-resilience, ethnic identity,

and religious coping are also stress resistance variables in other cultures. Nonetheless, it seems clear that ego-resilience serves as a stress resistance variable for all three groups. Results add to the existing literature in multiple ways by providing evidence that: (1) race/ethnicity impacts how one will respond to multiple sources of stress, and protective factors utilized vary by racial ethnic group; (2) ego-resilience is a robust psychological resource that serves as a stress resistance variable for this multi-ethnic sample through it's impact on stress perception, environmental stressors, and emotional response to stress.

REFERENCES

Abernethy, A. Chang, H. Seidlitz, L. Evinger, J. Duberstein, P. (2002). Religious coping among spouses of people with lung cancer. *Psychosomatics,(43) 456–463*.

Ai, A.L., Tice, T.N., Huang, B., Rogers, W., Bolling, S.F. (2008). Types of prayer, optimism, and well-being of middle-aged and alder patients undergoing open-heart surgery. *Mental Health, Religion, and Culture, 11, 131-150.*

Baez, Thomas. (2000). The effects of stress on emotional well-being and resiliency through mediating mechanisms of active coping skills and family hardiness (coping). *Dissertation Abstracts International Section A: Humanities and Social Sciences, 60(7-A), 2382.*

Baldwin, D., Jackson, D., Okoh, I., Cannon, R. (2011). Resiliency and Optimism: An African American Senior Citizen's Perspective. *Journal of Black Pschology, 37(1), 24-41.*

Barrett, P., Sondregger, R., Sondregger, N. (2001). Evaluation of an anxiety-prevention and positive-coping program (FRIENDS) for children and adolescents of non-English-speaking background. *Behavior Change, 18(2), 78-91.*

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173–1182.

Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and separateness. Journal of Personality and Social Psychology, 70(2), 349–361.

Block, J. (1982) Assimilation, accommodation, and the dynamics of the personality development. *Child Development,* 53, 28-295.

Block, J. & Block, J. H. (1980). The California Child Q-Set. *Consulting Psychologists Press.* (Original work published 1969).

Block, J., & Kremen, A. M. (1996). IQ and ego-resiliency: Conceptual and empirical connections and seperateness. *Journal of Personality and Social Psychology,* 70, 349-361.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? American Psychologist, 59(1), 20–28.

Bonanno, G. A., Wortman, C. B., Lehman, D. R., Tweed, R. G., Haring, M., Sonnega, J., et al. (2002). Resilience to loss and chronic grief: A prospective study from preloss to 18-months postloss. Journal of Personality and Social Psychology, 83(5), 1150–1164.

Bonanno, G. A., Wortman, C. B., & Nesse, R. M. (2004). Prospective patterns of resilience and maladjustment during widowhood. Psychology and Aging, 19(2), 260–271.

Carter, M., Sbrocco, T., Carter, G. (1996). African Americans and anxiety disorders research: Development of a testable theoretical framework. *Psychotherapy, 33, 3, 449-463.*

Carter, M., Sbrocco, T., Lewis, E., Friedman, K. (2001). Parental Bonding and Anxiety: Differences between African American and European American college students. *Journal of Anxiety Disorders. Vol.15(6), Nov-Dec 2001, pp. 555-569.*

Carter, Sbrocco, Miller, Suchday, Lewis, Freedman, (2004)

Cruz, D. (2011). The psychological correlates of race-related stress and health among African-Americans and Latinos. *Dissertation Abstracts International: Section B: The Sciences and Engineering. Vol.71(11-B), 2011, 7136.*

Coifman, K. Bonanno, G., Ray, R., Gross, J. (2007). Does repressive coping promote resilience? Affective automatic response discrepancy during bereavement. Journal of Personality and Social Psychology, 92(4), 745-758.

Carver, C. S. (1998). Resilience and thriving: Issues, models, and linkages. *Journal of Social Issues, 54(2), 245–266.*

Dunn, M., O'Brien, K. (2009). Stress, Social Support, and Religious Coping in Latina/Latino Immigrants. *Hispanic Journal of Behavioral Sciences, (31)2, 204-227.*

Feitelberg, S. (2007) Responses to Hurricane Ivan in Grand Cayman: Culture, resilience, and children. *The Sciences and Engineering.* 68(3-B) 419-421.

Fabis, S.J. (2006) Determining the efficacy of resiliency training and conventional stress management instruction in a university student population. *Dissertation Abstracts International: Section B: The Sciences of Engineering, 66(11-B), 5895.*

Flores, E., Cichetti, D., Rogosch, F. (2005). Predictors of resilience in maltreated and nonmaltreated Latino children. *Developmental Psychology,* 41(2), 338-351.

Flores, Y. (2008). Race related stress of Latino elders: Implications for quality of life. Dissertation Abstracts International: Section B: The Sciences and Engineering. Vol.68(8- B), pp. 5567.

Gallo, L., Penedo, F., Espinosa de los Monteros, K., Arguelles, W. (2009). Resiliency in the face of disadvantage: Do Hispanic cultural characteristics protect health outcomes? *Journal of Personality,* (77)6, 1707-1746.

Hart, D., Keller, M. Edelstein, W., Hoffman, V., (1998) Childhood personality influences on social cognitive development: a longitudinal study. *Journal of Personality and Social Psychology,* 74(5). 1278-1289.

Holt, C., Wang, M., Caplan, L., Schulz, E., Blake, V., Southward, V. (2011). Role of Religious Involvement and Spirituality in Functioning Among African Americans with Cancer: Testing a Meditational Model. *Journal of Behavioral Medicine, (34), 437-448.*

Jung-Hyun, K. (2007). The role of familialism in stress and coping processes among African American and White dementia caregivers: Effects on mental and physical health. *Health Psychology, 26(5), 564-576.*

Hart, C., (2006). Posttraumatic stress symptomatology in aging combat veterans: The direct and buffering effects of stress and social support. *Dissertation Abstracts International Section A: Humanities and Social Sciences.*Vol.67(6-A), pp. 2321.

Harrell, S. P. (2000). A multidimensional conceptualization of racism related stress: Implications for the well-being of people of color. *American Journal of Orthopsychiatry, 70,* 42–57.

Holmes, K., Carter, M., Gunthert, K. (in prep). Examining the relationship between ego-resilience, ethnic identity, and quality of life for African American adults: A cultural stress resistance model.

Kenny, D., Korchmaros, J., B. (2003). Level Mediation in Multilevel Models. *Psychological Methods*, Vol. 8, No. 2, 115–128.

Klohnen, E.C. (1996). Conceptual analysis and measurement of the construct of ego-resiliency. Journal of Personality and Social Psychology, 70(5), 1067–1079.

Kohn, P. M., Lafreniere, K., & Gurevich, M. (1991). Hassles, health, and personality. Journal of Personality and Social Psychology, 61(3), 478–482.

Keyes, C. (2005). Mental illness and/or Mental Health? Investigating axioms of the complete model of health. *Journal of Consulting and Clinical Psychology, 73(3), 539-548.*

Kudadjie-Gyamfi, E., Magai, C. (2008). The influence of coping styles on mammography screening in a multiethnic sample. *Cultural Diversity and Ethnic Minority Psychology*. Vol.14(3)183-192.

Lopez, J. D., (2005). Race-related stress and socioculrural orientation among Latino students during their transition into a predominantly White highly selective I nstitution. Journal of Hispanic Higher Education, 4, 354-365.

Lazarus, R. (2000). Toward better research on stress and coping. *American Psychologist, 55(6), 665-673.*

Lee, C., Czaja, S., Schulz, R. (2010). The moderating influence of demographic characteristic, social support, and religious coping on the effectiveness of a multicomponent psychosocial caregiver intervention in three ethnic groups. *The Journals of Gerontology: Series B: Psychological Sciences and Social Sciences*. Vol.65B(2), pp. 185-194.

McKnight, L. (2003). Depressive symptoms, coping, and ethnic identity in African American college women. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 64(3-B), 1500.*

Noh, S., Kaspar, V. (2003). Perceived discrimination and depression: moderating

effects of coping and ethnic support. *American Journal of Public Health, 93(2), 232-238.*

Ong, A. D., Bergeman, C. S., Bisconti, T. L., & Wallace, K. (2006). Psychological resilience, positive emotions, and successful adaptation to stress in later life. Journal of Personality and Social Psychology, 91, 730–749.

Ong, A., Bergeman, C.S., Boker, S. (2009). Resilience Comes of Age: Defining Features in Later Adulthood. *Journal of Personality, (77)6, 1777-1804.*

Pargament, K., Fueille, M., & Burdzey, D. (2011). The Brief RCOPE: Current psychometric status of a short measure of religious coping. *Religions, 2,651-76.*

Pargament, K.I., Smith, B.W., Koenig, H.G., Perez, L. (1998) Patterns of positive and negative religious coping with major life stressors. *Journal of the Scientific Study of Religion, 37, 710-724.*

Park (2005) Religious Coping

Pollack, M., Stein, M., Ginsberg, J. (2004). New Challenges for Anxiety Disorders: Where treatment, resilience, and economic priority converge. *CNS Spectrums.* 9(4), 1-10.

Reynolds, A.. Sneva, J., Beehler, G. (2010). The influence of racism-related stress on the academic motivation of Black and Latino/a students, *Journal of College Student Development, 51.2 135-149.*

Rutter, M. (1999). Resilience concepts and findings: Implications for family therapy. Journal of Family Therapy, 21, 119–144.

Sapolsky, R. M. (1996). Why stress is bad for your brain. Science, 273(5276), 749–750.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A reevaluation of the life orientation test. Journal of Personality and Social Psychology, 67(6), 1063–1078.

Rutter, M. (1979) Protective factors in children's responses to stress and   disadvantage. *Primary Prevention of Psychopathology: Social Competence in   Children.* 3, 1-42.

Skodol, A., Dohrenwend, B. (1998). Personality and coping as stress-attenuating or

amplifying factors. *Adversity, Stress, and Psychopathology, 377-397.*

Steele, G., Forehand, R., Armistead, L., Morse, E., Simon, P., Clark, L. (1999). Coping
      strategies and behavior problems of urban African-American children:
      Concurrent and longitudinal relationships. *American Journal of
      Orthopsychiatry, 69(2) 182-193.*

Trembley, P., King, P. (1994). State and trait anxiety, coping styles, and depression
      among psychiatric inpatients. *Canadian Journal of Behavioral Neuroscience,*
      26(4), 505-519.

Schnider, K., Elhai, J. (2007). Coping style Use Predicts postraumatic stress and
      complicated grief symptom severity among college students reporting a
      traumatic loss. *Journal of Counseling Psychology, 54, 344-350.*

Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations
and empirical evidence. Psychological Inquiry, 15(1), 1–18.

Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions
      to bounce back from negative emotional experiences. Journal of Personality and
      Social Psychology, 86(2), 320–333.

Utsey, S., Hook, J., Stanard, P. (2007). A re-examination of cultural factors that
      mitigate risk and promote resilience in relation to African American Suicide:
      A review of the literature and recommendations for future research. *Death
      Studies, 31(5), 399-415.*

Utsey, S., Hook, J., Fischer, N., Belvet, B. (2008). Cultural orientation, ego resilience,
      and optimism as predictors of subjective well-being in African Americans.
      Journal of Positive Psychology, Vol 3(3), 202-210.

Waugh, C., Fredrickson, B., Taylor, S. (2008). Adapting to life's slings and arrows:
      Individual differences in resilience when recovering from an anticipated threat
      Journal of Research in Personality, 42, 1031–1046.

Waugh, C., Wager, T., Fredrickson, B., Noll, D. Taylor, S. (2008). The neural correlates
      of trait resilience when anticipating and recovering from threat. *Social Cognitive
      and Affective Neuroscience*, 3(4), 322-332.

Walker, R. (2007). Acculturation and acculturative stress as indicators for suicide
      risk among African Americans. *American Journal of OrthoPsychiatry, 77(3),
      386-391.*

Watson, D.C., Wilson, L., Sinha, B. (1998). Assessing the Dimensional Structure of Coping: A cross cultural comparison. *International Journal of Stress Management, 5(1), 77-81.*

Wortman, J.H., Park, C.L., Edmonson, D. (2011). Trauma and PTSD Symptoms: Does Spiritual Struggle Mediate the Link? *Psychological Trauma: Theory, Research, Practice, and Policy, (3)4, 442-447.*