PROTECTIVE FACTORS AND LEVELS OF RESILIENCE AMONG COLLEGE STUDENTS

by

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A DISSERTATION

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ABSTRACT

This study's main goal was to examine the impact of internal and external protective factors on resilience among college students. While much of the literature on resilience focuses on children and younger adolescents, there are relatively few studies that examine resilience levels among college students and the adult population in general. Specifically, this study examined the internal protective factors of optimism, self-efficacy, and dimensions of psychological well-being and the ways in which they predict resilience levels among college students. The effects of optimism, self-efficacy, and psychological well-being on college students' resilience levels were also hypothesized to be different between different genders and between different races. Data were collected in the spring and fall at a large southeastern university. A survey design was employed in this study to analyze resilience levels among a sample of college students. Multiple regression techniques were used to analyze the data. The results confirmed the protective effects of self-efficacy, external protective factors, and two dimensions of psychological well-being. Empirical evidence shows that some of the internal protective factors operate differently in explaining resilience among different racial and gender groups. Implications are discussed.

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DEDICATION

Always know that where you come from shouldn't be a barrier to success. You should face life's challenges with faith, courage, patience, a tenacity of spirit, and a sense of community. This dissertation is dedicated to YOU… those who are finding hope, resilience, and happiness in seemingly hopeless situations. Through Christ, all things are possible.

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CHAPTER I

INTRODUCTION TO THE STUDY

Background

Psychological distress among the college population is steadily increasing and it is the result of stressors such as changes in sleeping and eating habits, increased workload, changes in social activities, new responsibilities, technology problems, etc. (Steinhardt & Dolbier, 2008). Not dealing with these stressors effectively can lead to depression, anxiety, and increased risk for dropping out (McCarthy, Fouladi, Juncker, & Matheny, 2006). In fact, anxiety and depression are two of the leading problems among college students; first and third, respectively (McCarthy et al.).

Psychological distress among college students may also be the result of factors that some college students may have dealt with (or may not have dealt with effectively) during childhood or adolescence. These factors include poverty, divorce, abuse, neglect, parental illness or drug abuse, violence, etc. It is estimated that one out of every five children under the age of 18 lives in poverty (U.S. Bureau of the Census, 2007). More than 800,000 American children spend some time in foster care each year, mainly because they have been victims of child abuse or neglect. Furthermore, it has been estimated that the juvenile justice system has contact with nearly 200,000 young people every night for non-criminal behaviors like running away from home and skipping school and for criminal behaviors such as underage drinking. In fact, studies have found that a vast majority of college students have experienced a traumatic or stressful life event at

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some point in their lifetime. In two of those studies, college students reported high trauma prevalence rates from 84% to 94% and two other studies, which focused specifically on witnessing and experiencing violence, reported prevalence rates from 76% to 96% (Scarpa et al., 2002; Vrana & Lauterbach, 1994; Watson & Haynes, 2007). Other studies found low trauma prevalence rates from 52 to 72% (Goodman, Corcoran, Turner, Yuan, & Green, 1998; Kirk & Dollar, 2002; Owens & Chard, 2006). The latter studies did not measure common traumatic events such as unexpected death of a loved one.

McCarthy et al. (2006) asserted that enhancing internal protective factors such as self-efficacy and some dimensions of psychological well-being can, hopefully, buffer the effects of stressors experienced by college students, specifically in the collegiate environment. The problem lies in that college students may not be knowledgeable of the resources that may assist in dealing with anxiety, depression, and other factors they may have faced in their lives.

This study's main goal was to examine the impact of internal and external protective factors on resilience among college students. Within that framework, the study's main objectives were to examine the internal protective factors of optimism, self-efficacy, and psychological well-being as well as the caring and supportive relationships in the school, home, peers, and the community, and the ways in which they predict resilience levels. Another objective is to explore whether race and gender moderate the effects of optimism, self-efficacy, and psychological well-being on resilience levels among college students.

This study focused on college students for several reasons. First, there is paucity in the research on resilience among college students. Second, the transition to college constitutes changes or challenges for many college students. These changes and challenges can sometimes be stressful for students, hence affecting academic performance (Baldwin, Chambliss, & Towler,

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2003; Misra, West, Russo, & McKean, 2000; Ross, Niebling, & Heckert, 1999). Third, focusing

on resilience among college students gives much insight to professionals working with high

school students who are about to make the transition to college. It also gives much insight to

professionals within the college setting who work with students who are having problems

adjusting and surviving in the collegiate environment. Lastly, focusing on college students and

enhancing their optimism, self-efficacy, and psychological well-being may be important to

encouraging academic success in the collegiate environment.

Significance of Study

Research on the general construct of resilience has been around for the last 3 decades. A

significant contribution of the present study is that it examines the construct of resilience among

college students, a population that is scare in research on resilience. Luthar and Zelazo (2003)

asserted that one of the potential weaknesses in the research on risk and resilience is the idea that

there has been an almost exclusive focus on youth. This study attempted to overcome this

weakness. Luthar, Cicchetti, and Becker (2000) contended that more application is needed in the

development of theory. Researchers have examined resilience factors in different contexts and

settings that include urban and rural contexts, school environments, mental health issues,

substance abuse, teenage pregnancy, development, divorce, and family dysfunction (Alvord &

Grados, 2005; Corcoran & Nichols-Casebolt, 2004; Reis, Colbert, & Herbert, 2005; Wasonga,

Christman, & Kilmer, 2003; Waxman, Gray, & Padron, 2003; Zins, Elias, Greenberg, &

Weissberg, 2000). Many studies on risk and resilience have focused on a younger population;

this study attempted to apply the resiliency theory to that of a college student population. This

study utilized the principles of resiliency theory in a new social context and setting: college

students attending a large university.

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Making the transition to college signifies moving from late adolescence to young adulthood. It is during this time that some gain independence from parents by moving away from home, some develop aspirations about the future, and some are ready to assume adult responsibilities. This period, according to Arnett (2000) can be identified as "emerging adulthood" (p. 469). Obradovič, Burt, and Masten (2006) examined the pathways of adaptation from adolescence to young adulthood using the participants from a 20-year study on competence and resilience. They found that the most intense changes in pathways of adaptation occurred during emerging adulthood (ages 17-23 years). In his seminal work on emerging adulthood, Arnett suggested future research on risk assessments during emerging adulthood. This study examined the adaption of risk behaviors during emerging adulthood by focusing on college students.

Optimism, self-efficacy, and dimensions of psychological well-being and their relationship to resilience levels in college students are important to the research on resilience in that they contribute to the research on individual resilience and the growing literature on positive psychology. Positive psychology is the scientific study of strengths-based character and virtues and has emphasis on positive individual traits in people (Seligman & Cxikszentmihalyi, 2000). This emerging field focuses on the strength-based approach to working with at-risk individuals. Research with a strength-based approach is important in that the application of risk-factor-focused prevention often leads to the labeling and stigmatizing of youth (Benard, 1997). Furthermore, locating risk factors seems to have rather passive and reactive implications while research on protective and positive factors instill a proactive tone that actively infuses factors that will lead to social adjustments. There is a plethora of research on risk factors and resilience, this study builds on protective factors and resilience research. Dent and Cameron (2003)

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contended that educational psychologists have a critical role assisting teachers and other

professionals in identifying and enhancing resilience factors in students. This role includes

making vulnerable children the priority group, improving curriculum access, making classrooms

more supportive, incorporating psychology into individual education plans, and recognizing

potential for positive change. Overall, identifying positive psychological characteristics of

individuals who do well despite challenge and adversity provide direction for preventive

intervention.

One objective of this study was to explore how protective factors work differently in

different racial and gender groups in terms of affecting resilience levels. Interaction effects

incorporate the joint effect of two variables on a dependent variable. According to Luthar &

Cicchetti (2000a) "interaction effects are important: they sensitize researchers to the fact that

many so-called protective or vulnerability processes can be highly potent in the context of

particular risk conditions, even though their effects are trivial in the absence of adversity" (p.

575). This study will examine possible protective factors that foster resilience among racial and

gender groups. The inclusion of interaction effects involving protective factors as well as race

and gender are vital to provide implications as to how protective factors may impact social

adjustment differently for different racial and gender groups (Wasonga et al., 2003). Race and

gender represent two important social statuses often associated with differential access to

material resources, culture, experiences, etc.

Definitions

Defining Resilience

Children who are exposed to adversity, change, or misfortune may be at risk

developmentally. Resilient individuals can be described as those who adapt well despite being

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exposed to adversity, change, or misfortune (Masten, 1994). Thus, resilience can be identified as a state of mind that manifests itself in certain behaviors. These behaviors include the ability to bounce back, adapt well, adapt successfully, regain balance, find meaning, or readjust despite being exposed to adversity, change, or misfortune (Bernard, 1997; Garmezy & Masten, 1994; Garmezy, Masten, & Tellegen, 1984; Gordon, 1995; Masten; Rutter, 1985; Werner & Smith, 1982). In this study, resilience is defined as the ability to successfully cope with change or misfortune, specifically among college students.

Defining External Protective Factors

External protective factors are environmental supports that are available in the home, peer group, school, and other aspects of the community. Within these environmental supports, factors that are extremely important include caring relationships, high expectations and opportunities for meaningful contributions (Benard, 2004; Brown, D'Emidjo-Caston, & Benard, 2001; Constantine, Benard, & Diaz, 1999). In this study, external protective factors include professors who may provide support to an individual, an adult who cares about an individual, a friend who allows one to talk about their problems, a parent who believes one will succeed, etc.

Defining Optimism, Self-Efficacy, and Psychological Well-Being

Internal protective factors are individual qualities or characteristics specific to the individual. The internal protective factors that were examined in the study are optimism, self-efficacy, and psychological well-being. Optimism has been described as the dispositional belief or attitude that positive things can happen in an individual's life (Scheier & Carver, 1985). It is the tendency to expect favorable outcomes in the future. Optimism is the opposite of pessimism in that pessimists prepare for negative things to happen in the future (Scheier & Carver, 1992). Self-efficacy is the belief that one can perform well at a certain task (Bandura, 1986, 1997).

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Furthermore, it is the expectation that one can perform competently across varying ranges of situations and contexts. This includes contexts that are threatening and challenging as well as those that require persistence, effort, and perseverance (Tipton & Worthington, 1984). Psychological well-being includes a wide range of positive aspects of functioning. For this study, psychological well-being consists of six dimensions derived from other fields of psychology. These six dimensions include autonomy, environmental mastery, personal growth, positive relationships with others, purpose in life, and self-acceptance.

Theoretical Foundation of This Study

The theoretical framework used to drive this study was that of Resilience theory as well as Brofenbrenner's Ecological Theory. Resiliency theory is a theoretical perspective that has developed within several frameworks-developmental psychopathology, ecosystems perspectives, and, more recently, life-span development. The work on resiliency theory has also been applied to research on stress, competence, and coping theories. According to Smith-Osborne (2007), the resiliency theoretical framework addresses development of high-risk populations so that they may overcome stress and adversity to achieve functional outcomes either during a phase in life, a developmental trajectory, or throughout the life span. According to Benard (1997), resiliency theory proposes that resilient individuals are competent; have effective problem-solving skills, independence, and autonomy; and have a sense of purpose about the future. Whether these individuals utilize these characteristics depends on protective factors such as social support and caring relationships in the school, family setting, and other aspects of the community.

Kumpfer (1999) developed an organizational framework based on social ecology models and outlined major constructs that provide a framework for resilience research. This framework thoroughly examines factors and processes that contribute to later adaptation or resilient

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integration. More specifically, the framework examines processes between stressors and challenges, environmental contexts (i.e., family, community, school, etc.), that can moderate or mediate those stressors and challenges, the transactions between those environmental contexts, internal factors (i.e., behavioral, spiritual, emotional, etc.), and later adaptation or resilient integration.

In the past, several studies have documented ecological factors that are critical to the research on resilience (Anthony, 1987; Glantz & Johnson, 1999; Hauser, 1999). Brofenbrenner's (1979, 1986) ecological systems theory explains the many factors in a child's development and the ways in which these influences (or systems) affect development throughout the lifespan. In terms of resilience, Bronfenbrenner's framework explains how risk factors interact with protective factors to influence how individuals adapt (or do not adapt) successfully despite being exposed to stressful life conditions. The theory illustrates the idea that becoming resilient is the result of a number of bi-directional influences throughout the lifecourse. This theory encompasses developmental trajectories, from childhood to adulthood.

This paper is organized as follows: This chapter details the background and introduction explaining the importance of research on resilience and optimism, self-efficacy, and dimensions of psychological well-being; statement of the problem; and theories associated with resilience. Chapter II includes a thorough review of the literature. Chapter III describes the methods and procedures used to analyze collected data. Chapter IV includes a thorough review of the results of the study. Finally, Chapter V is the discussion section which includes implications of the study results and limitations.

CHAPTER II

REVIEW OF RELATED LITERATURE

History of Resilience

Research on resilience as a scientific study has been around for the last 30 years. Pioneering researchers studied positive adaptation among groups of children who were considered to be at-risk for later psychopathology (Masten, 2001). According to Wright and Masten (2005) the study of resilience has advanced in research in three major waves and we are now entering into the fourth wave of resilience investigation. The first wave yielded descriptions of research phenomenon, identified basic concepts and methodologies, and focused on personal traits and characteristics among "invulnerable" groups. Pioneering researchers during this wave included Michael Rutter, E. James Anthony, Norman Garmezy, and Emmy Werner. During this time, there was also debate about the ambiguity among definitions of resilience (Luthar et al., 2000).

In the early 1960s, Michael Rutter conducted one of the first epidemiological studies on resilience among children living on the Isle of Wight, a large island in England. Over a 10-year period, Rutter (1989) studied children whose parents had been diagnosed with a mental illness. The risk factors prevalent in the youth's lives included discord in the family, low socioeconomic status, large families crowed in small dwellings, disorder with the mother or father, and intervention by a government agency (that led to removal of children from the home or placement in foster care). The study found that even under these adverse circumstances many of the children did not become mentally ill themselves and many did not display maladaptive

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behaviors. Factors that seemed to distinguish those who were resilient from these adversities included a positive personality, a supportive family, and support from at least one community agency (i.e., school or church group). Furthermore, Rutter found that factors in the school environment such as fostering a sense of achievement and motivation in the students, enhancing personal growth, and increasing social contacts among peers were essential for promoting resilience in these children. Thus, this landmark study was one of the first studies to examine individual differences and chronic trauma with which children cope and are able to become resilient.

During the 1970s, Norman Garmezy (1991) began studying adult patients with mental illnesses, particularly schizophrenic patients, and their children. It was during this time that Garmezy also began examining protective factors involved in fostering resilience, not only in mentally ill patients and their children, but also in urban ghettos. Garmezy's study yielded some of the same protective factors found in Rutter's epidemiological study; however, his studies also found a deeper understanding of processes underlying resilience. These processes included competence, dispositional attributes of the child, family cohesiveness, warmth, and supportive members of the community. Also during this time, Emmy Werner (1993) studied the lives of approximately 700 individuals who were living on an island in Hawaii. The families in this study were physically isolated on the island of Hawaii, exposed to poverty, and lacked adequate prenatal care. Due to the risk factors, the children in this study were at-risk for a number of maladaptive behaviors including criminal activity, teenage pregnancy, substance abuse, and school dropout. Approximately one-third of the children reared on this island developed into competent, mature adults. Their resilience reportedly was due to factors such as self-competence, self-regulation, determination, and effective problem-solving skills. By age 40, approximately

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one-third of the participants had stable marriages and families, were active in church activities, obtained an education and vocational skills, and many reported learning valuable life skills while being involved in the military. This contribution to resilience was one of the first studies to examine the lives of high-risk youth from birth to adulthood (Masten, Best, & Garmezy, 1990).

Another classic study to the contribution on resilience is the Project Competence Study (Garmezy et al., 1984). This 10-year study identified a group of individuals who adapted well, despite being exposed to stressful situations. The participants included 200 children enrolled in grades three through six as well as their parents. The participants in this study had been diagnosed with a major illness and had undergone some type of major surgery. Measures in this study included teacher ratings, peer assessments, and school records. Results found that some of these children with lower IQs, low levels of family functioning, and lower socioeconomic status (SES) levels had low levels of competence. At the same time, researchers found that some of the children in the aforementioned group also had high levels of competence despite stressful situations in their lives. Thus, researchers began to question the ways in which individuals who were exposed to similar stressful life conditions, interpreted those conditions differently.

The second wave of resilience research included the ecological systems model identified by Bronfenbrenner. More importantly, Bronfenbrenner's (1977) seminal work has influenced the ways in which researchers approach the study of development and the ways in which values shape development throughout the lifespan, and it explains the many forces that shape child development. These forces include parents, nonfamilial influences (i.e., peers), and the broader context (i.e., schools and communities). This research examines environmental factors, children's responses to environmental conditions, parent-child interactions, and interactions with other members of the community (i.e., teachers and peers).

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The second wave attempted to provide an understanding of the processes leading to resilience in development (Wright & Masten, 2005). This wave adopted a developmental-systems approach to understanding resilience and focused on positive adaptation in the face of adversity as well as the interactions among individuals and groups. The second wave of research on resilience also included culture influences on resilience. During this time, researchers began examining cultural traditions, religious rituals and community services that were responsible for fostering resilience in youth (Wright & Masten).

Findings from the second wave also discovered that resilience can be acquired, and moreso, that it is a learned behavior (Neihart, 2006). Hence, the third wave focused on policy implications, models, and preventative interventions regarding resilience (Luthar & Cicchetti, 2000; Rutter, 2000; Zimmerman, Bingenheimer, & Notaro., 2002). These policy implications have included recommendations for teachers, parents, professionals, and other community members and the ways in which they can foster resilience in youth.

Perspectives from the first three waves have laid the groundwork for the fourth wave of resilience research, which focuses on a systems perspective, cultural differences, and interactions across levels of analysis within development (Masten, 2007). Examples of these multilevel dynamics include processes involving genes and brain functions, gene-environment interactions, social interactions, cultural influences, and media influences.

This current study contributes to the fourth wave in two ways. A major focus of the fourth wave is the examination of larger, contextual factors, and, more specifically, cultural influences (Boyden & Mann, 2005). This includes identifying cultural differences and similarities among groups and an examination of cultural influences involved in resilience (Clauss-Ehlers, 2004). In exploring whether and how internal factors including optimism, self-

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efficacy, and psychological well-being are different between racial and gender groups, the current study took the first step in understanding development of resilience for difference racial and gender groups. Second, the study examines individual level protective factors in addition to external protective factors that are responsible for promoting resilience among college students. Putting the important psychological factors in the context of stress and social supportive relationships, the study results shed light on the dynamics linking stress and external factors to resilience among college students. The next section of the paper provides a conceptual understanding of resilience, a literature review on resilience, and outlines the framework for the current study.

Conceptual Understanding of Resilience

Researchers investigating resilience are interested in the ways in which some children considered "at-risk" (or "high risk") do so well, while others flounder. Bernard (1997) reviewed an extensive amount of literature on resilience. Within his research, he found that 50%, and usually closer to 70%, of "high-risk" children grow up to be not only successful and resilient but confident, competent, and caring adults.

In the beginning, researchers began using a deficit-based approach to study the mechanisms involved in the adaptation to adversity. Instead, researchers found that youth often identified individual and environmental strengths that contributed to their adaptation (Masten, 2001). Thus, the concept of resilience emerged in the literature on psychopathology. In the early 1970s, the term resilience was conceptualized as a stable personality characteristic; however, as research has developed over time, it has been conceptualized as a dynamic, ongoing process between an individual and the environment (Luthar & Cicchetti, 2000; Luthar, Sawyer, & Brown, 2006; Luthar & Zelazo, 2003; Vanderbilt-Adriance & Shaw, 2008). Before the conceptualization

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of resilience, terms such as invulnerability and invincibility were used to describe the adaptation process following adversity (Anthony, 1974; Earlvolino-Ramirez, 2007). The concept of invulnerability implied that that developmental course was deterministic and that maladaptive behaviors were the results for individuals being exposed to adverse conditions (Luthar et al., 2000). Researchers also believed that the term invulnerability was "absolute and unchanging" (Luthar et al., 2000). Thus, the term resilience took precedence. Researchers investigating resilience wanted to unfold why it is that some children at risk did not develop psychopathology.

Since the pioneering studies (Anthony, 1974; Garmezy et al., 1984; Rutter, 1979), several definitions of resilience have been identified in the research. A general definition of resilience has been described as the ability to adapt successfully despite adversity (Garmezy & Masten, 1991). Weiner (2000, p. 16 as cited in Masten, 2000), defines resilience as "the absence of significant developmental delays or serious learning and behavioral problems and the mastery of developmental tasks that are appropriate for a given age and culture." According to Masten (2001), resilience is a concept based on the idea that an individual is doing well even though adversity and disadvantage has been present at some point in that individual's life. Some researchers have described resilience as a process, rather than a trait. What that implies is that resilience is a process that includes a number of social and contextual exchanges that presumably promotes positive development (Ungar, 2003).

Overall, empirical studies have advanced our understanding on the conceptualization on resilience; however, some significant challenges still remain. These challenges include the need for broader perspective on individuals "at-risk" (Kumpfer, 1999; Luthar & Cicchetti, 2000b); need for conceptualization of resilience and positive adjustment (Vanderbilt-Adriance & Shaw, 2008); unbiased definitions of successful outcomes based on race, age and gender (Kumpfer,

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1999); need to distinguish between adverse factors, protective factors, and vulnerability factors (Luthar et al., 2006); and awareness of preconceived notions and bias regarding what constitutes high risk or low risk (Luthar, 2003).

Gordon and Song (1994) contend that defining resilience can be difficult "because resilience may not be a single construct, but, a complex of related processes that deserve to be identified and studied as discrete constructs" (p. 30). For example, some studies have defined resilience as the ability to succeed academically. This definition does not take into account the students who still manage to excel [i.e., graduating from high school, but not with a high grade point average (GPA)] despite adverse circumstances. Using "academic success" alone has proved to be ambiguous in the research on resilience.

Researchers also contended that it is important to understand that resilience varies across time and domain and that children may show strengths and weaknesses depending on the domain or context in question (Kumpfer, 1999). For example, a child may show strengths in academic settings, but may show signs of weaknesses in other aspects of life, such as home. Luthar (2003) noted that more affluent youth have been identified as "low risk;" however, they report higher rates of depression, anxiety, and substance abuse than their nonaffluent counterparts.

Luthar et al. (2006) posited that adverse factors include those life events or situations that can threaten, challenge, or halt healthy development. Examples of adverse factors include divorce, family violence, child abuse or neglect, or growing up in poverty. Protective factors buffer the adverse experiences. Protective factors include the love and support of someone other than parents, ties to the community, and commitment to schooling (Dent & Cameron, 2003). Terms such as protective factors and protective mechanisms have been used interchangeably. Rutter (1990) described a protective factor as something that is given in an individual's life while

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a protective mechanism is something that can be developed over time. A framework for

understanding the resilience process includes the presence of stressors and/or risk factors and

protective processes, internal and external, which contribute to an individual being resilient or

overcoming adversity. The next few sections describe these factors and processes in detail.

Stress

Stress and stressful life events are important factors that have been associated with

research on resilience. Stress is the interaction between the person and the environment,

whereindividuals appraise environmental tasks as outweighing their abilities to meet those tasks

(Lazarus & Folkman, 1984). Stressful life events have been described as unfortunate or

unexpected life events that cause stress and/or hardship (Trussell, 2008). How is resilience

research connected to stress research? The premise is that in order for an individual to become

resilient, stress or adversity must have been present at some point in that individual's life. It is

also based on the premise that stress can have detrimental effects on both physical and mental

health; thus, impacting one's ability to become resilient. The notion is that risk factors, identified

as important constructs in resilience research, are defined in an attempt to measure stress, life

changes, and life challenges.

Mutimer, Reece, and Matthews (2007) investigated the relationships between stress,

adaptation, and family functioning among elementary school students. The results indicated a

significant main effect of exposure level to stress on adaptation of family functioning.

Participants who indicated high exposure to stress also tend to have lower scores on family

functioning variables. Researchers have also discussed the idea of a steeling effect in resilience

research. Rutter (2006) contended that, in some circumstances, adversity strengthens resistance

to later stress. Some key factors in the steeling effect could include characteristics such as

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successful coping strategies, physiological adaptation, and a sense of self-efficacy. The findings from these studies make noteworthy contributions to the stress and resilience literature.

Research has supported gender differences in the stress literature. One consistent finding is that of females experiencing more stress than their male counterparts (Somchit & Sriyaporn, 2004; Tusaie & Patterson, 2006). This does not mean that they were less resilient, however. Women experiencing higher stress levels than males could be due to the way females are socialized within society. Almeida and Kessler (1998) contended that women are introduced and socialized into roles that allow them to be more nurturing, roles that allow them to provide more support to others, and roles that allow them to be more empathetic. This, in turn, leads to more stress. In their study on relationships among trait, situational, and comparative optimism, Tusaie and Patterson found that females reported experiencing more stress, more depression, and being less resilient than their male counterparts. Hetherington (1989) examined gender differences in families of divorce and marital discord. They found that females, when compared to their male counterparts, reported more stress, but were hardly affected by family stress. Somchit and Sriyaporn examined resilience, adversity, and academic achievement in elementary school students. They found that even though females reported higher levels of stress, they were more resilient than their male counterparts.

Race and Gender Socialization Differences

Surprising, little is known about race and gender differences and promoting resilience. And, according to Ungar, Lee, Callaghan, and Boothroyd (2005), cultural differences in resilience research have been understudied and there is still the need to understand culturally determined indicators of resilience. In the past, empirical research has treated race and gender as nuisance variables to be controlled (Ungar et al.).

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      This current study examined whether resilience processes (internal and external) were the same for Whites and Blacks, and male and female college students. Studies on race and gender differences in resilience research are important in that socialization processes between the groups are different, and these different experiences could lead to different processes responsible for fostering resilience. Socialization includes the transmission of values, beliefs, attitudes, and behaviors that help to promote resilience and positive development (Miller, 1999). These socialization processes could include cultural differences, structural differences, family processes, identity formation, access to material resources, and experiences with racism, discrimination, etc. Socialization differences may predict interactions and adjustments within the collegiate environment as well.

      Cultural and structural socialization differences between race and gender groups have been well documented (Nettles & Johnson, 1987). In an early study on college student socialization, Nettles and Johnson found that Black men and women were similar on three socialization measures: peer group relations, student satisfaction, and academic integration. However, White men and women differed on the on the same three measures of socialization. Overall, White students ranked higher on student satisfaction and academic integration than their Black counterparts. The gender gap in educational achievement between Blacks and Whites has been noted. Women have higher high school and college completion rates than men. Black males lag behind in high school and college completion (McDaniel, DiPrete, Buchmann, & Shwed, 2009). Rodriguez (2010) found that minority youth are overrepresented at nearly every point of contact in the juvenile justice system and that Black, Latino, and American Indian youth were treated more severely in the juvenile justice system than their White counterparts.

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Other socialization differences include family, environmental, and structural differences. According to the U.S. Census Bureau (2009), approximately 40 million people (including 13 million children) lived below the poverty line. Within these poverty rates, African Americans and Hispanics experienced the highest rates of poverty. In 2007, there were approximately 13.7 million single parents in the United States, of which 84% of those custodial parents were women (U.S. Census Bureau). In 2008, almost 10% of all children under the age of 17 were without health insurance (Centers for Disease Control and Prevention, 2008). The historical trends that lead up to these numbers must also be considered. These trends include racism, discrimination, oppression, etc. (Miller, 1999). Hence, socialization differences may be prevalent among racial and gender groups and, therefore, are important to implications on resilience research.

From a theoretical standpoint, Brofenbrenner's theory (1986) contends that socialization is influenced by multiple levels of the environment. And parents' interactions in the environment have an effect as to how and when they socialize their own children. Parents' interactions are based on individual experiences, relationships with others, and relationships within the workplace. Examples of parents' experiences could include their own upbringing; interactions with spouse, significant other, co-worker, or other family members; and parent's place of employment and other aspects of the community. In turn, parents' interactions and experiences have an impact on children. And children's interactions are transpired, transformed, and developed in the school, among peer groups, and other aspects of the community. The next section outlines risk and protective factors that could influence interactions throughout the lifecourse.

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Risk and Protective Factors

Resilience has also become known as the outcome between risk and protective factors. Risk factors are situations that may increase a youth's likelihood of engaging in risky behaviors. Risk factors include stress, poverty, divorce, parental neglect, and stressors associated with the transition to college. For the purposes of this study on college students, risk factors could include the transition to college, traumatic or stressful life experiences, the demands of college environments, etc. The constructs of vulnerability factors and risk factors are sometimes used interchangeably in the literature. Vulnerability factors are traits such as genetic predispositions, or environmental and biological deficits (such as cognitive impairments) for which there is empirical evidence of heightened response, sensitivity, or reaction to stressors or risk factors (Smith-Osborne, 2007, p. 157).

Protective factors commonly found in resilient youth are situations that moderate whether an individual will engage in risky behaviors. Protective factors, which can be internal or external, are situations that mitigate risks, are more global, and pertain to positive experiences associated with adaptation despite adversity. These include relationships to significant others (i.e., teachers), community settings, and school contexts (Waxman et al., 2003). It should also be noted that an environment can serve as a risk factor as well as a protective factor. For example, a child who resides in an inner-city, poverty stricken environment is faced with a number of risk factors. However, a child may have a supportive mother and friends within that same environment who serve as protective factors.

While risk factors are important, it is also important to focus on factors and processes that are responsible for protecting children, hence making them resilient. As previously stated, early studies examined the individual personality factors (such as internal factors) that were

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responsible for fostering resilience in children. It was not until later on that focus was given to external factors, which included positive and supportive structures in the home, school, and community (Masten, 2000). Fonagy, Steele, Steele, Higgitt, and Target (1994) assert that there are three general categories of resilience: within-child factors, within-home factors, and outside home factors. Within-child factors include high levels of competence, internal locus of control, and positive sense of self. According to Dent and Cameron (2003), the within-child factors can be fostered through the process of attachment early in life. The within-in home factors include parenting style, socioeconomic status of parents, education and motivation level of parents, and parental responsibility. Finally, outside home factors can include neighborhood influence, school influence, and peer influence. According to Benard (2004), literature on resilience tends to fall into one of two categories: individual-focused characteristics and protective factors. What this divide in research implies, even though individual-focused factors are identified as protective factors, is that some studies will focus specifically on modifying internal characteristics such as self-worth, self-esteem, problem-solving strategies, competence, etc., while other studies focus on the interactions among internal and external protective factors. The interactions among internal and external protective factors include focusing on coping mechanisms and modifying external sources of support.

Identifying risk and protective factors during specific developmental periods are vital to studies on resilience. As previously stated, one of the weaknesses of research on resilience has been the exclusive focus on youth and adolescents (Luthar & Zelazo, 2003). More recently, research on resilience has been extended to individuals within the college setting (Bui, 2005; Steinhardt & Dolbier, 2008). Steinhardt and Dolbier examined coping strategies, protective factors, and symptomatology among college students during a period of increased academic

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stress. Students were randomly assigned to an experimental group, in which they received resilience intervention or a control group, in which there was no intervention. The results indicated that the experimental group had significantly higher resilience scores, more effective coping strategies, higher scores on protective factors, and lower scores on symptomatology. The results from this study indicated that resilience intervention programs may be useful for college students.

Given that college students face a set of problems different from that of other groups, it is important to delineate risk factors (i.e., stressors and impediments) and protective factors related to resilience. Several studies have indicated that stress in college may affect academic performance (de Carvalho, Gadzella, Henley, & Ball, 2009; Baldwin et al., 2003; Misra et al., 2000; Ross et al., 1999). In turn, the stress caused by low academic performance may influence long-term goals and perceptions about the future (Weiner, 1990). This often leads to depression and anxiety among college students (McCarthy et al., 2006). Gratz, Conrad, and Roemer (2002) examined risk factors for deliberate self-harm among a group of college students. Of the 133 participants, Gratz and colleagues found that 38% reported a history of deliberate self-harm, 18% reported having harmed themselves more than 10 times in the past, and 10% reported having harmed themselves more than 100 times in the past. Risk factors for self-harm reported by students in this study included disassociation, insecure parental attachment, childhood sexual abuse, parental neglect, and childhood separation. Contrary to many studies on gender differences and self-harm, this study found that men participated in self-harm behaviors at the same rate as women. Given that college students face a unique set of problems, it is also important to foster resilience in college students. The following sections outline empirical studies

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on internal and external protective factors that were examined in this study as well as the

hypotheses.

Research on External Protective Factors

Many studies on resilience have examined the internal and external protective factors that

are responsible for fostering resilience in children. The most consistent external protective

factors include things such as supportive family members and teachers, peers, and other

members of the community (Merdinger, Hines, Lemon Osterling, & Wyatt, 2005; Wasonga et al.,

2003; Wolkow & Ferguson, 2001). Longitudinal studies on resilience have found that children

(and parents) who reported secure attachment in infancy, when compared to their counterparts

with less-supportive histories, also reported a greater capacity to rebound from poor adaptation at

difference points throughout the lifespan (Werner & Smith, 1992; Yates, Egeland, & Sroufe,

2003). Zimmerman et al. (2002) found that having a natural mentor has a direct effect on all

adolescent outcomes, including problem behaviors and drug use. Natural mentors are individuals

involved in a person's life without being assigned by a formal mentoring program. These natural

mentors included individuals such as teachers, coaches, counselors, or ministers; however, the

most commonly reported mentor was an extended family member. Nonparental relationships

outside of the home may be influential in fostering resilience in children. Likewise, Crosnoe and

Elder (2004) found that emotional relationships in the home were significantly correlated with

academic problems in the school. Thus, a supportive relationship with a teacher, other family

members, and peers was directly related to higher levels of educational resilience. These findings

held true for all of the groups that were studied. Dent and Cameron (2003) found that resilient

youths expressed a sense of belongingness and connectedness to individuals, groups, and

institutions more often than their non-resilient counterparts. Resilient youths also demonstrated a

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sense of autonomy and personal agency when they talked about their lives, and had definite plans

and positive views about the future when compared to their non-resilient counterparts. The

theoretical foundation for this study incorporates an ecosystems or developmental perspective;

thus, external protective factors such as professors who may provide support to an individual, an

adult who cares about an individual, a friend who allows one to talk about his/her problems, a

parent who believes one will succeed, etc. were measured.

H1: The higher the level of external protective factors, the higher the level of resilience.

Research on Internal Protective Factors

The most consistent internal protective factors include things such as competence,

motivation, self-regulation, and locus of control (Alvord & Grados, 2005; Hines, Merdinger, &

Wyatt, 2005; Reis et al., 2005; Smokowski, Reynolds, & Bezucko, 1999; Wasonga et al., 2003).

Kobasa (1979) examined highly stressful groups. One group identified as being high stress and

low illness and the other group identified as being high stress and high illness. She described the

high stress and low illness group as being "cognitively hardy." These individuals reported having

more control over their lives, a stronger sense of self, were more committed to activities and

interpersonal relationships, and viewed change as a challenge rather than a threat. The findings

from this study suggest that internal protective factors are important in overcoming illness.

Davey, Eaker, and Walters (2003) examined resilience among high school students using

personality profiles. The resilient youth reported higher levels of self-worth, coping extroversion,

agreeableness, and openness to new experiences. Thus, they contended that resilience is not a

single variable, but rather a set of variables that allows people to cope with stress and adversity.

A paradigm shift focusing on positive factors (i.e., optimism) is vital to resilience

research. While many internal factors (i.e., problem-solving skills, competence, internal locus of

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control, etc.) have been responsible for fostering resilience in youth, this study focused on

optimism, self-efficacy, and dimensions of psychological well-being. These three factors have

received little attention in the research on resilience (Hamill, 2003; Hirsch, Wolford, LaLonde,

Brunk, & Morris, 2007; Karademas, Kafetsios, & Sideridis, 2007; Ryff, 1989), specifically when

focusing on college students.

Because optimism, self-efficacy, and psychological well-being have received little

attention in the research on resilience, specifically among college students, it is important to

examine the origins of these concepts to gain a better understanding of their foundation. Some

contend that the origins of optimism are a combination of genetic and environmental factors that

influence one to become optimistic (Gillham & Reivich, 2004). Parents who provide safe, secure,

warm, and nurturing environments are likely to promote optimism in their children (Bowlby,

1988). Also, the way that parents handle adversity in their own lives may have an effect on

development of optimism in children. Studies have consistently found that supportive, structured,

and emotionally stimulating environments in early childhood contribute significantly to self-

efficacy, positive expression, and competence (Englund, Levy, Hyson, & Sroufe, 2000).

There is also research to support the idea that warm, trusting, and supportive relationships

with others are essential to well-being (Ryan & Deci, 2001) and, furthermore, are an indicator of

well-being (Simpson 1990). Ryan and Deci further contended that secure attachments effectively

foster well-being in that they satisfy the need for autonomy, competence, and relatedness.

Building on the works of Bowlby (1958) and Bowlby and Ainsworth (1991), Sroufe, Carlson,

Levy, and Egeland (1999) contended that early relationships and attachment with caregivers

provide the foundation for significant attachment to others throughout the lifespan. Attachment

theory is based on the works of Bowlby and Ainsworth. The theory draws its concepts from

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ecology, information processing, and developmental psychology (Bretherton, 1992). Attachment

theory asserts that early, secure relationships with caregivers serve as a foundation for

relationships throughout the lifespan (Ainsworth & Bowlby, 1991).

Skolnick (1980) found that external support and significant relationships with others

lessened the impact of a traumatic event. These relationships included close relationship with a

member of the extended family, a sibling, a grandparent, or a teacher. Resnick, Harris, and Blum

(1993) indicated that the most powerful predictor of significant relationships to others is

connectedness, sense of belonging, and closeness. This research leads to the assumption that

secure attachments early in life may be one of the most important factors in developing optimism,

self-efficacy, and psychological well-being.

Origins are important to optimism, self-efficacy, and psychological well-being; however,

it is also important to examine the relationships between the three concepts. Optimism and self-

efficacy have been described as future-oriented expectations and include assessments of the

environment (Carver & Scheier, 1998; Karademas et al., 2007); however, Bandura (1997)

contended that self-efficacy tends to be an antecedent of optimism. Furthemore, Karademas et al.

argued that optimism and self-efficacy are two expectations that are seminal to psychological

well-being. In fact, several studies have found that optimism and general self-efficacy are related

to well-being outcomes, as well as adaptation (Scheier, Carver, & Bridges, 2001).

People with a future-oriented perspective want to believe that they are in control of their

future or that they can "make things happen" (Snyder & Lopez, 2007); thus, it is important to

examine factors such as optimism, self-efficacy, and psychological well-being when examining

resilience. Snyder and Lopez (2007) further contended that people with a future-oriented

expectation are "likely to engage in preventive behaviors to lessen the likelihood of bad things

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happening in the future and they form clear goals and conjure the requisite paths to reach those goals" (p. 197). They also carry positive expectations and attitudes regarding the future, regardless of the negative life events that may be present in their lives (Hirsch et al., 2007).

Reivich and Shatté (2002) contended that optimism and self-efficacy are closely related and that both are important elements in explaining resilience. They further contended that people who score high on self-efficacy also tend to score high on optimism because they believe they can solve problems, overcome adversity, and take control of events that happen in their life. Studies have examined the associations of optimism, self-efficacy, and aspects of well-being (Karademas et al., 2007). Luszczynska, Gutierrez-Dona, and Schwarzer (2005) examined self-efficacy and a variety of other psychological constructs across several countries. Their cross-cultural study revealed that self-efficacy was positively associated with optimism. Studies have also shown that optimism is related to aspects of well-being. Eid and Diener (2004) examined subjective well-being and quality of life in college students. Their study found that optimism was positively related to subjective well-being and positive affective states. Optimism, self-efficacy, and psychological well-being have all been found to be related to resilience, but they are different concepts. One major difference with resilience is the idea that resilience is operative in the face of adversity, change, or misfortune. Furthermore, optimism, self-efficacy, and psychological well-being have been identified as factors (more specifically, internal) that promote or facilitate resilience and have been labeled as protective factors. For example, an optimistic child who has faced adversity may be more resilient than a pessimistic child who has faced adversity. While the origins on optimism, self-efficacy, and psychological well-being are vital to this study, the next section of this literature review examines empirical research on these factors and resilience.

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The research is limited among college students; however, there is a plethora of research that has been conducted on children and high school students (Conchas & Clark, 2002; Jerusalem & Mittag, 1995; Masten et al., 1999; Tusaie, 2001; Tusaie, Puskar, & Sereika, 2007; Werner & Smith, 1992). The next section also outlines the literature on race/ethnicity, gender, and the internal protective factors on resilience.

Optimism

Optimism is defined as the dispositional belief that desirable outcomes are attainable (Scheier & Carver, 1985). It is the tendency to expect favorable outcomes in the future. Pessimism has been identified as a negative expectation about the future (Scheier & Carver). Optimists utilize increased efforts and energy to attain goals, while pessimists give up easily (Peterson, 2000). Optimism is a construct that has been discussed in the positive psychology research; thus, we investigate it as a protective factor leading to resilience.

Research studies strongly support optimism as a trait contributing to resilience (Werner & Smith, 1992). Tusaie and Patterson (2006) examined three different types of optimism as part of the process of understanding concepts responsible for maximizing resilience. They found trait optimism to be one of the most important cognitive factors in moderating or reducing stress. Trait optimism was defined as a stable generalized expectation that good things will happen (Scheier et al., 1994). Tusaie et al. (2007) examined psychosocial resilience in adolescents and found that optimism was the strongest influence on psychosocial resilience, followed by social support from family members. In this study, optimism significantly decreased the effects of bad life events.

One internal factor that has been consistently demonstrated by the research on resilience is that of having a positive outlook on life (Conchas & Clark, 2002; Tusaie, 2001; Tusaie et al.,

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2007). It has been a determining factor between those who adapt successfully and those who do not adapt successfully when exposed to adversity. This positive outlook on life has included factors such as hope, belief that life has meaning, optimism, and faith (Conchas & Clark). A study on urban minorities with limited opportunities found that optimism was a characteristic of resilience among a group of high school students enrolled in a college preparation career academy (Conchas & Clark). Because of this current focus, many counselors and social services providers are moving toward shifting the developmental course in more positive directions by attempting to focus solely on the positive aspects in an individual's life (Corcoran & Nichols-Casebolt, 2004). This study lends support to the idea optimism is a powerful predictor in resilience.

H2: The higher the level of optimism, the higher the level of resilience.

Self-Efficacy

Constructs examined in the research on resilience focus on an individual's sense of personal efficacy. According to Bandura (1995), self-efficacy is "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (p.2). It is the expectation that one can perform competently across varying ranges of situations and contexts. This includes contexts that are threatening and challenging as well as those that require persistence, effort, and perseverance (Tipton & Worthington, 1984).

Self-efficacy has its basis in social cognitive theory, which holds that individuals are active participants in seeking meaning in their lives rather than passive recipients of environmental factors (Bandura, 1986). Self-efficacy influences an individual's choice of activities, how much effort one will exert toward a task, and how persistent an individual will be

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(Bandura & Schunk, 1981). In return, this effort and perseverance will determine how resilient

an individual can be in the face of adversity. According to Jerusalem and Mittag (1995),

> people with a high sense of self efficacy trust their own capabilities to master different
> types of environmental demands. They tend to interpret demands and problems more as
> challenges than as threats and or subjectively uncontrolled events. High perceived
> efficacy enables individuals to face stressful demands with confidence, feel motivated by
> psychological arousal, and judge positive events as caused by effort and negative events
> as due primarily to external circumstances. (p. 178)

When exposed to adversity, individuals with a high sense of self-efficacy tend to believe

that they can exert control and have influence over their thoughts and may be more likely to

persevere in their efforts (Hamill, 2003). Jerusalem and Mittag (1995) examined stressful life

transitions among German youths. They found perceived self-efficacy to be the strongest

personal resource on all aspects of adaptation that were assessed. Garmezy (1991) contended that

personality variables are important protective factors for resilience. These personality features

include factors such as cognitive abilities, competence, self-efficacy, self-esteem, temperament,

self-regulation skills, and having a positive outlook on life. Research on studies of self-efficacy

as a function of race and ethnicity has specifically examined domain-specific aspects of self-

efficacy (Luszczynska et al., 2005; Pajares & Johnson, 1994; Pajares & Kranzler, 1995).

Domain-specific aspects of self-efficacy, common in educational research, refer to the ability to

perform a specific task in a particular context or domain (Zimmerman, Bandura, & Martinez-

Pons, 1992). The present study used a general self-efficacy measure to examine self-efficacy as a

general personality trait rather than it being domain- (or content-) specific.

H3: The higher the level of self-efficacy, the higher the level of resilience.

Psychological Well-Being

Another important focus in the research on resilience is the idea of psychological well-

being. It is based on the notion that resilient individuals maintain higher levels of psychological

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well-being than their nonresilient counterparts. Cowen (1991) defined well-being as a wide range

of positive aspects of functioning. These positive aspects include strong and secure relationships

with others, interpersonal skills, coping skills, and empowering environments. Psychological

well-being consists of six facets derived from research on life span development, clinical

accounts of positive functioning, and positive mental health (Ryff & Essex, 1992). The six facets

are autonomy, environmental mastery, personal growth, positive relations with others, purpose in

life, and self-acceptance. *Autonomy* is defined as the ability to be self-determined and

independent, ability to resist social pressures and to think and act in certain ways, ability to

regulate behavior from within, and the ability to evaluate self by personal standards (Ryff, 1989).

Environmental mastery is defined as the sense of mastery and competence in managing the

environment, the ability to control a complex array of external activities, the ability to make

effective use of surrounding opportunities, and the ability to choose or create contexts suitable to

personal needs and values (Ryff). *Personal growth* is defined as the feeling of continued

development, the ability to see self as growing and expanding, the ability to be open to new

experiences, the ability of one to realize his/her potential, the ability to see improvement in self

and behavior over time, and the ability to change in ways that reflect more self-knowledge and

effectiveness (Ryff). *Positive relations with others* are defined as having warm, satisfying, and

trusting relationships with others. It is also defined as the ability to be concerned about the

welfare of others; the ability to be strong, empathetic, affectionate, and intimate; and the ability

to understand give and take of human relationships (Ryff). *Purpose in life* is defined as the

ability to have goals in life and a sense of direction, the ability to give meaning to present and

past life, and the ability to have aims and objectives for living (Ryff). Finally, *self-acceptance* is

defined as possessing a positive attitude toward self, acknowledging and accepting multiple

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aspects of self, and feeling positive about past life (Ryff). Ryff and Keyes (1995) contended that

six independent, though correlated, favorable outcomes (listed above) described by positive

psychologists integrate to create a model of well-being.

Masten et al. (1999) investigated competence outcomes in 205 adolescents. The findings

from the study indicated that resilient adolescents had higher IQs, more parenting resources, and

higher psychological well-being than their non-resilient counterparts. Ryff (1989) contended that

research on psychological well-being is an essential tool in the college setting. It will aid

professionals in the college setting in determining whether students are pursuing meaningful

goals, have attachment to others, are independent in their thoughts and actions, as well as how

much students are self-accepting.

H4: The higher the level of psychological well-being, the higher the level of resilience.

Race, Gender, and Resilience

Gender Differences

Fergusson and Horwood (2003) conducted a 21-year longitudinal study on resilient

individuals exposed to childhood adversity. They found that females were more resilient to

externalizing responses, while males were more resilient to internalizing responses. The

externalizing behaviors included alcohol dependence, antisocial personality disorder, and

involvement in crime while the internalizing behaviors included depression, anxiety, suicide

attempt, and ideation. In their study on psychosocial resilience among adolescents, males

reported being more resilient than their female counterparts (Tusaie et al., 2007). DuMont,

Widom, and Czaja (2007) examined predictors of resilience in abused and neglected children.

They found females to be more resilient in adolescence and in early adulthood. Hence, studies on

resilience among different gender groups consistently show mixed results. Findings from some

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studies indicated that females are more resilient (DuMont et al.) and findings from other studies indicated that males are more resilient (Tusaie et al.). The differences could be due to a number of factors including race, age, risk or adversity, or protective factor(s) available, etc.

H5: Males and females have different levels of resilience.

There is an indication from the literature that development of the three internal protective factors is different for different gender groups. Hence, this study explored whether gender plays a role in the effects of these factors on resilience. In terms of psychological well-being, Ryff and Keyes (1995) found that women scored significantly higher than their male counterparts in areas such as positive relationships with others as well as personal growth. In their study on relationships among different types of optimism, Tusaie and Patterson (2006) found that males were more optimistic than females.

In their classic Kauai longitudinal study, Werner and Smith (1982) found gender differences in resilience outcomes, with females reporting the importance of emotional support from extended family members and males reporting the importance of family structure. More specifically, Werner and Smith examined gender differences and the interconnections of protective mechanisms over time. For both boys and girls, they found that the number of sources of emotional support during adolescence was positively linked to higher self-efficacy and ability to make realistic plans at age 18 (Werner & Smith). They also found that those who were more realistic and resourceful at age 18 also reported higher levels of psychological well-being at age 14. However, factors such as an engaged temperament, competence, and self-efficacy made a greater contribution to adult adaptation for females rather than males. Specifically, the impact of self-efficacy on resilience was significantly stronger for females than for males. Morales (2008) contended that gender has been an important aspect of resilience studies, but rarely have gender

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differences been the focus of studies on resilience. Thus, it is justifiable to examine possible differences between gender groups and to consider how male and female college students are affected differently by resilience, optimism, self-efficacy, and dimensions of psychological well-being.

H6: The effects of optimism on college students' resilience levels will be different between males and females.

H7: The effects of self-efficacy on college students' resilience levels will be different between males and females.

H8: The effects of psychological well-being on college students' resilience levels will be different between different males and females.

Racial and Ethnic Differences

DuMont et al. (2007), in their study on abused and neglected children, found African Americans to be more resilient than their White counterparts during adolescence. Wilson, Hurtt, Shaw, Dishion, and Gardner (2009) conducted an 8-year longitudinal study on African Americans, Whites, and Hispanics in three regions of the United States. Within the study, Wilson and colleagues found that African Americans were at the highest exposure to risk, but did not engage in behavioral problems any more than the other two groups. Hence, the findings from this study lead to the assumption that African Americans demonstrate more resilience than their White and Hispanic counterparts when exposed to risks such as frequent mobility, low-income, dangerous neighbors, substance abuse by parents, absence of a father, etc.

Studies have examined gender differences in risk and resilience factors; however, studies on race and ethnic differences are sparse (Wright & Masten, 2005). This is due to the fact that studies examining predictors of resilience have focused within racial and ethnic groups rather

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than across groups (DuMont et al., 2007). Wright and Masten contended that "there is little research on culturally based protective factors and that future research on resilience should examine the extent to which factors found in one group can be replicated across cultural groups" (p. 30). While the literature alludes to the importance of race differences among resilient youth, to my knowledge, research on the differences are limited.

H9: White and Blackss have different levels of resilience.

There is an indication from the literature that development of the three internal protective factors is different for different racial/ethnic groups. Hence, this study explored whether race/ethnicity played a role in the effects of these factors on resilience. Burke, Joyner, Czech, and Wilson (2000) investigated the concurrent validity of optimism measures, specifically the Life Orientation Test-Revised (LOT-R) and the Optimism/Pessimism Scale (OPS). Within their study, in which they administered each scale to the same group of participants, the data were analyzed by gender and race. The results from the Life Orientation Test revealed that Blacks scored significantly higher than Whites on levels of optimism. Researchers also suggested that future researchers examine racial differences on constructs measuring optimism and pessimism. The literature establishes a relationship between gender and protective factors related to resilience. However, while the literature alludes to the importance of examining race and ethnic differences among protective factors related to resilience, to my knowledge research on differences across groups are limited. This study was employed to explore whether and how race plays a role in the relationships between optimism, self-efficacy, and psychological well-being and resilience among college students.

H10: The effects of optimism on college students' resilience levels will be different between Whites and Blacks.

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H11: The effects of self-efficacy on college students' resilience levels will be different between Whites and Blacks.

H12: The effects of psychological well-being on college students' resilience levels will be different between Whites and Blacks.

Control Variables

In this study, stress levels, college or high school GPA, and age were measured as control variables. Stress was measured as a control variable given that some researchers describe resilience as the ability to overcome stress (Rutter, 2006; Trussell, 2008). The literature also indicates that during the transition to college, students may experience high levels of stress (Baldwin et al., 2003). College or high school GPA was used as control variable in this study because the literature indicates that year of study and GPA influence resilience among students. Specifically, older, more mature students and higher GPA indicate higher levels of resilience (Gonzalez & Padilla, 1997; Gordon, Padilla, Ford, Thoresen, 1994; Keith, Byerly, Floerchinger, Pence, & Thornberg, 2006; Resnick, Ireland, & Borowsky, 2004; Rouse, 2001).

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CHAPTER III

METHODS

Research Design

This study's main goal was to examine the impact of internal protective factors on resilience in the presence of external protective factors and stressors among college students. Specifically, the study's main objective was to examine the internal protective factors of optimism, self-efficacy, and psychological well-being and the ways in which they predict resilience levels. Another objective was to examine whether race and gender moderate the effects of optimism, self-efficacy, and psychological well-being on resilience levels among college students.

This study used survey methodology to address the aforementioned goals and objectives. A survey methodology allows researchers to measure optimism, self-efficacy, and psychological well-being, and resilience as well as relevant measures necessary to form the model of resilience. Employing a cross-sectional design, this survey study allowed the data to be collected during the fall and spring semesters from a research university located in the southeastern part of the United States. The survey was considered a small-scale, online survey and 658 students participated in this study. The online survey was used because of its advantageous features, including questionnaire design principles, higher response rates, lower costs, reduced implementation time, greater access to technology across campus, etc. (Evans & Mathur, 2005; Wright, 2005).

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Sample

Undergraduate students at a large university were recruited for participation in this study. Nonprobability, convenience sampling was used in this study because college students were readily available to the researcher at the time the research was conducted. Data were collected in the fall 2009 and spring 2010 semesters. Twenty-five instructors representing 50 courses were contacted via email regarding this study. The instructors who were contacted taught courses such as Freshman Compass, Introduction to Sociology, Introduction to Criminal Justice, Criminological Theory, Principles of Microeconomics, Consumer Behavior, Lifespan Human Development, Introduction to Learning Strategies, and Educational Psychology. The courses represented different colleges across the university. These colleges included College of Arts and Sciences, College of Education, College of Human Environmental Sciences, and the College of Commerce and Business Administration.

Once given permission by the instructor, the students were approached during class time by the researcher. While in the classroom, the researcher explained the purpose of the study and asked students to participate. The students as well as the instructor for the individual courses were provided written instructions explaining how to log onto a qualtrics website to complete the survey. The qualtrics link was also posted on the course website, if the individual instructors chose to do so. Students did not have to decide during class if they wanted to participate in the study. The class visit by the researcher served as a debriefing period about the study. Some instructors decided to give extra credit for participation in this study. Students were allowed to log onto the survey at any time; however, they had to decide if they wanted to participate in the study within the month time period that was allotted. If necessary, and approved by the instructor, the researcher visited the class on a second occasion to remind students about participation in the

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study. If the researcher was unable to visit the classroom a second time, the instructor was sent an email to remind the students of the study. If they decided to participate, they were required to log onto the qualtrics link, sign the consent form electronically, and proceed with the study.

When explaining the study, the researcher emphasized confidentiality, the fact that students are not required to participate, the fact that they have the right to withdraw at any time and that deciding not to participate would not result in a penalty in the course. The questionnaire took approximately 45 minutes to complete. This study aimed to collect data from at least 500 participants and 658 students participated. Prior to contact with any instructors as well as data collection within the classrooms, the Institutional Review Board at The University of Alabama approved the conducting of this study.

Prior to collecting data in fall 2009 and spring 2010, a pilot study was conducted in the summer 2009. Several of the stress indexes in the resilience literature are related to groups outside of the college aged population, mainly children and younger adolescents. Furthermore, there are relatively few studies that examined resilience levels among college students and the adult population in general. Hence, a pilot study was conducted for two reasons: (a) to increase variation of stressful events already being utilized in the study; and (b) to contribute to the existing resilience literature on stressful life events and, it was hoped, adding to the literature stressful events that may be specific to college students.

The pilot study was completed through convenience sampling. Participants included students enrolled in criminal justice courses attending the same university from which the present study collected data. The sample included 41 students. The pilot study asked the respondents to (a) list any impediments that they had faced as a college student; and (b) list any stressors they had faced as a college student. The data collected from the pilot study were

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included with the Stressful Live Events measure to examine stressors (and impediments). Based on the results of the pilot study, a 10-item index was created to indicate stressors specific to experiences in the college environment. The results of the pilot study indicated that financial troubles, having a family member become sick or die because of a terminal illness, uncertainty about the future, not having enough credits, having to retake a course, belonging to a fraternity or sorority, having a mental illness, underage drinking hangover, partying too much, being arrested, not being able to meet parents' expectations, lack of effective study skills, parking situation on campus, and rumors or information presented on social networking sites are stressors identified by college students.

<p align="center">**Measures**</p>

Dependent Variable

Resilience was measured as a continuous variable. The index for resilience came from the Resilience Scale (RS) which is composed of 26 items (Wagnild & Young, 1993) and examines participant's individual levels of resilience. Questions on this index included being able to follow through with plans and getting through hard times and offered responses ranged from (1) *strongly disagree* to (7) *strongly agree*. The average of the sum of the scores of all items was used to indicate the resilience index—the higher the score, the higher the resilience. In their study, Wagnild and Young found the scale to have concurrent validity and internal consistency ($\alpha \approx .91$). The results from the current study yielded a Cronbach's Alpha of .93. Detailed measures of all variables were included in Appendix A.

Internal Protective Factors

Optimism, self-efficacy, and psychological well-being were all measured as continuous variables. The index measuring optimism was developed through the Life Orientation Test-

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Revised (LOT-R). This 10-item index, in which some questions are worded in an optimistic

manner and the others are worded in a pessimistic manner, measures one's expectancies that he

or she will experience positive outcomes using a series of questions. Questions on this index

included enjoying friends, expecting good things to happen, expecting things to go one's way,

etc. Offered responses ranged from (1) *strongly disagree* to (5) *strongly agree*. In their study,

Scheier and Carver (1985) found the scale to have concurrent validity and internal consistency (α

$\approx$.76). Unfortunately, one of the questions, "overall, I expect more good things to happen to me

than bad," was accidentally deleted during one of the collection periods. The results from the

current study yielded a Cronbach's Alpha of .70.

The index measuring self-efficacy was assessed through the General Self-Efficacy Scale.

This 10-item index assessed optimistic self-beliefs and the belief that one can perform difficult

tasks or cope with adversity. Questions on this index included solving difficult problems,

remaining calm in difficult situations, and handling unforeseen circumstances. The index offered

responses ranging from (1) *not at all true* to (4) *exactly true.* An earlier study reported a

relatively high internal consistency (α $\approx$.84) of this self-efficacy index (Schwarzer & Jerusalem,

1995). A similar level of reliability was also affirmed by the current study (α $\approx$.78).

The index measuring psychological well-being (PWB) was developed through the Scale

of Psychological Well-being. Using the 54-item psychological well-being index developed by

Ryff and Heidrich (1997), the current study divided these items into measures of six dimensions:

autonomy, environmental mastery, personal growth, positive relationships with others, purpose

in life, and self-acceptance (Ryff & Heidrich). Autonomy was described as being self-determined

and independent. Environmental mastery was described as having a sense of mastery and

competence in managing the environment. Personal growth was described as continued

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development and being open to new experiences. A positive relationship with others was

described as having a warm, satisfying, and trusting relationship with others. Purpose in life was

described as having goals in life and a sense of direction. Self-acceptance was described as

possessing a positive attitude toward oneself. Questions on this index included having

confidence in one's opinion, managing responsibilities, encountering new and challenging

experiences, maintaining close relationships, living one day at a time, feeling confident and

positive, etc. Offered responses ranged from (1) *strongly disagree* to 6 (*strongly agree)*. Other

studies (Ryff, 1989) have found the dimensions (or subscales) for the Scale of Psychological

Well-Being to be reliable: autonomy *(α ≈.88)*, environmental mastery *(α ≈.81)*, personal growth

(α ≈.81), positive relationships with others *(α ≈.83)*, purpose in life *(α ≈.82)*, and self-acceptance

(α ≈.85). Like other studies on well-being (Cheng & Chan, 2005; Chrouser & Ryff, 2006; Cui, Li,

& Wang, 2009; Edward, Ngcobo, & Pillay, 2004), the current study examined the effects of

these six different dimensions of well-being on resilience as well as an overall impact of well-

being on resilience. All six dimensions demonstrated a moderate to high internal consistency,

with Alpha values ranging from .73 to .85. The Cronbach's Alpha results from the current study

yielded the following: autonomy *(α ≈.83)*, environmental mastery *(α ≈.85)*, personal growth *(α*

≈.71), positive relationships with others *(α ≈.84)*, purpose in life *(α ≈.85)*, and self-acceptance *(α*

≈.88). The overall psychological well-being results yielded a Cronbach's Alpha of .93.

External Protective Factors

The index measuring external protective factors was taken from the Resilience & Youth

Development Module (RYDM) of the California Healthy Kids Survey (California Department of

Education, 2008) and was developed under contract with the California Department of Education.

The RYDM assesses internal and external protective factors responsible for fostering resilience

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in youth. For this study, only items measuring external protective factors were used. The external protective factors assess caring and positive relationships, high expectations, and opportunities for meaningful participation in the home, school (i.e., university in this study), aspects of the community, and peer relationships. Hence, only 20 items from the RYDM were used in this study. Questions on this index included feeling like one is a part of the university environment and having a relationship with a parent or adult in the home. The offered responses range from (1) *strongly disagree* to (5) *strongly agree*. While examining psychometric properties of the Healthy Kids Survey, Hanson and Kim (2007) found that external protective factors had the highest alphas, all exceeding .90. Using the RYDM on Turkish students, Gizir and Aydin (2009) found internal consistency coefficients ranging from .55 to .85. Similar to previous studies, the current study yielded a Cronbach's Alpha of .90.

Control Variables

Race/ethnicity and gender were measured as dichotomous variables. On the original survey, Race/ethnicity was offered with responses with "1" indicating *African American/Black,* "2" indicating *Native American (including Alaskan Native)*, "3" indicating *Asian*, "4" indicating *Native Hawaiian or Pacific Islander*, "5" indicating *Caucasian/White, and* "6" indicating *other*. In the current study, race was recoded to become White with "1" indicating *White* and "0" indicating *Black*. Gender was recoded to become Male with "0" indicating *male* and "1" indicating *female*.

Single items were used to assess the following demographic variables: age and GPA. As a continuous variable, reported ages by these college students ranged from 18-47. The current study assessed college GPA, but students who were incoming freshman were expected to report their high school GPA. College GPA (or high school GPA if they indicated being an incoming

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freshman) was coded by the variables "5" indicating *3.6-4.0* to "1" indicating *below 2.1*. College GPA was also measured as a continuous variable.

Stressful life events were measured as dichotomous variables. The current study used stressful life events and stressful events relevant to college students to measure stress. The index measuring stressful life events was developed through the Stressful Life Events Screening Questionnaire (Goodman et al., 1998). This 13-item index measures an individual's exposure to a variety of stressful life events including life-threatening illnesses, life-threatening accidents, being robbed or mugged, traumatic losses, abuse, physical assault, witnessing violence, interpersonal violence, etc. Two category responses were offered to indicate whether or not these stressful life events have been experienced by the respondents. This 13-item index was found to have moderate reliability with Alpha=.73 (Goodman et al.). Results of the same items collected in the current study indicated a moderate reliability ($\alpha \approx .72$).

As previously mentioned, a pilot study was conducted to determine stressors specific to college-aged individuals. Two category responses were offered to indicate whether or not these stressful events had been experienced by students. A moderate level of reliability was found for the 10-item college relevant stress index ($\alpha \approx .67$).

In an attempt to make the resulting data more manageable and to identify reasonable dimensions of stress among college students, an exploratory factor analysis was performed for all 23 questions. Thirteen items were taken from the Stressful Life Events Questionnaire and 10 questions were stressors and impediments specifically related to college students, which were derived during the pilot study. Results of the principal component analysis with varimax rotation produced results that did not indicate that the two sets of items underlie the same construct of stress.

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Hence, the final analyses consisted of two measures of stress: the 13 items that represented stressful life events (i.e., illness, abuse and witnessing violence during childhood) and the 10 items that represented stress during college (i.e., financial troubles such as paying tuition).

See Appendix A for all measures used in this study.

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CHAPTER 4

RESULTS

The goal of the present study was to examine the effects of internal and external

protective factors on resilience among college students at a large southeastern university. Data

were collected from the fall 2009 to the spring 2010 semester. An online survey was

administered to students in seven departments and five colleges. A total of 658 students

responded to the request and participated in the survey. To examine resilience among

undergraduate students, the final sample excluded all graduate students from the study. The

study sought to examine resilience among Whites and Blacks; therefore, all other

races/ethnicities were excluded from the study. The final sample, which also excluded 47

students who took less than 5 minutes to complete the survey, consisted of 581 participants.

There were 150 questions on the survey. Hence, it was presumed that respondents who took less

than 5 minutes to complete the survey did not allow enough time to effectively read and respond

to all of the questions in an efficient manner.

In order to gain a better understanding of our sample of college students, the means and

standard deviations were computed for all included variables and are shown in Table 1. Mean

substitution was used in instances of missing data describing the control variables of stressful life

events and stress during college, independent variables, and resilience. Aiken and West (1991)

recommended centering variables because uncentered scores can have effects on interaction

results. Hence, the values were centered. Males accounted for 22% (n=129) of those surveyed

and 84% of the respondents reported their ethnic background as White. The average age of

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college students was 20 years old (s.d. =3.40), 40% indicated that they were a junior in college, and 31% indicated that they had 3.1-3.5 GPA. The average GPA for White students was 3.1-3.5, while the average GPA for Black students was 2.6-3.0. Blacks comprised 16% of the respondents and the average age of Blacks was 22 years old (s.d. = 5.58). The mean of 5.62 for resilience indicated that respondents reported somewhat high levels of resilience (range from 1-7, where higher scores indicate higher levels of resilience). The respondents, on average, reported a relatively high level of external factors that were important to them including positive and caring relationships in the home, school, community, and among peers. On average, respondents on the optimism index (M=3.59) indicated that they held neutral beliefs about positive outcomes in the future. Further, the mean of 3.77 (s.d. = .97) for Black respondents, as compared to White respondents, on the optimism index indicated that they held somewhat high beliefs about positive outcomes in the future. Interestingly, the self-efficacy index (M=3.24) indicated that, in general, respondents moderately believed they could cope with difficult tasks or deal with adversity. On the psychological well-being index respondents somewhat agreed on positive relationships with others (M=4.86), environmental mastery (M=4.47), personal growth (M=4.76), autonomy (M=4.31), acceptance (M=4.82), and purpose in life (M=4.87). Overall, respondents reported having moderate to high levels of psychological well-being (M=4.70). Whites (M=4.88) and women (M=4.93), as compared to Blacks and males, reported somewhat high levels of positive relationships with others. Conversely, Blacks (M=4.99) and males (M=4.61), as compared to Whites and females, reported somewhat high levels of self-acceptance.

Table 1

Means and Standard Deviations of All Variables

	Total			Racial Groups Black			White			Gender Groups Men			Women		
	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N	Mean	SD	N
Male (1)	0.22	0.42	581	0.17	0.38	92	0.23	0.42	489	---	---	---	---	---	---
White (2)	0.84	0.37	581	---	---	---	---	---	---	0.88	0.33	129	0.83	0.37	452
GPA (3)	3.75	0.99	575	3.17	0.97	92	3.86	0.96	483	3.51	1.01	128	3.82	0.98	447
Age (4)	20.81	3.4	571	22.47	5.58	89	20.51	2.71	482	21.01	2.71	125	20.76	3.57	446
Stressful Life Events (5)	1.62	1.84	581	1.84	1.94	92	1.58	1.82	489	1.79	1.84	129	1.57	1.84	452
Stress During College (6)	3.97	2.18	581	3.71	2.10	92	4.01	2.20	489	4.26	2.26	129	3.88	2.16	452
External Protective Factors (7)	4.38	0.49	581	4.29	0.51	92	4.39	0.49	489	4.31	0.48	129	4.40	0.50	452
Internal Protective Factors	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Optimism (8)	3.59	0.72	581	3.77	0.71	92	3.56	0.72	489	3.48	0.83	129	3.63	0.69	452
Self-Efficacy (9)	3.24	0.37	581	3.32	0.35	92	3.23	0.38	489	3.32	0.39	129	3.22	0.37	452
Psychological Well-Being (10)	4.7	0.58	581	4.76	0.67	92	4.69	0.57	489	4.56	0.68	129	4.74	0.55	452
Positive Relationships with Others (11)	4.86	0.84	581	4.77	0.89	92	4.88	0.83	489	4.60	0.94	129	4.93	0.80	452
Environmental Mastery (12)	4.47	0.76	581	4.57	0.83	92	4.45	0.74	489	4.41	0.80	129	4.48	0.75	452
Personal Growth (13)	4.76	0.69	581	4.81	0.71	92	4.76	0.68	489	4.60	0.77	129	4.81	0.65	452
Autonomy (14)	4.31	0.8	581	4.59	0.91	92	4.25	0.77	489	4.35	0.75	129	4.29	0.82	452
Acceptance (15)	4.82	0.8	581	4.99	0.88	92	4.79	0.78	489	4.61	0.86	129	4.88	0.78	452
Purpose in Life (16)	4.87	0.79	581	4.95	0.85	92	4.85	0.78	489	4.59	0.87	129	4.95	0.74	452
Resilience (17)	5.62	0.62	581	5.70	0.81	92	5.60	0.58	489	5.64	0.64	129	5.61	0.61	452

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Table 2

Correlations on all Independent and Dependent Variables

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
Male (1)	1.00															
White (2)	0.05	1.00														
GPA (3)	-.13**	.25**	1.00													
Age (4)	0.03	-.21**	-.11**	1.00												
External Protective Factors (5)	-0.07	0.08	.16**	-.14**	1.00											
Optimism (6)	-.083*	-0.11*	.11**	.12**	.34**	1.00										
Self-Efficacy (7)	.11*	-.09*	.11**	0.06	.34**	.45**	1.00									
Stressful Life Events (8)	0.05	-0.05	-.13**	.14**	-.22**	-.17**	-0.03	1.00								
Stress During College (9)	0.07	0.05	-.29**	.11**	-.14**	-.21**	-.11**	.34**	1.00							
Pos. Relat. W/Others (10)	-.16**	0.05	.90*	-0.01	.51**	.50**	.35**	-.19**	-.17**	1.00						
Environmental Mastery (11)	-0.04	-0.06	.14**	0.04	.45**	.55**	.52**	-.18**	-.31**	.63**	1.00					
Personal Growth (12)	-.13**	-0.03	.10*	.08	.29**	.44**	.39**	-0.03	-0.01	.53**	.48**	1.00				
Autonomy (13)	0.03	-.15**	0.05	.15**	.18**	.32**	.44**	0.00	-.11**	.30**	.45**	.39**	1.00			
Acceptance (14)	-.14**	-0.09*	.16**	0.02	.48**	.59**	.52**	-.21**	-.25**	.67**	.74**	.54**	.51**	1.00		
Purpose in Life (15)	-.19**	-0.05	.23**	.09*	.36**	.53**	.44**	-.12**	-.20**	.58**	.66**	.66**	.44**	.65**	1.00	
Psychological WB (16)	-.13**	-0.05	.17**	.09*	.47**	.59**	.56**	-.16**	-.23**	.73**	.81**	.68**	.63**	.85**	.78**	1.00
Resilience (17)	0.02	-0.06	.13**	0.01	.36**	.42**	.61**	-.08	-.18**	.38**	.55**	.36**	.41**	.52**	.44**	.56**

*p<.05

**p<.01

The correlation coefficients are shown in Table 2. Positive and significant correlations were found between resilience and GPA (.13, p<.01), external protective factors (.36, p<.01), and optimism (.42, p<.01), self-efficacy (.61, p<.01), and overall psychological well-being index (.56, p<.01). Resilience was also found to be positively related to all six dimensions of psychological well-being (Positive relationships with others, .38, p<.01; Environmental Mastery .55, p<.01; Personal Growth .36, p<.01; Autonomy .41, p<.01; Self-Acceptance .52, p<.01; and Purpose in Life .44, p<.01). These positive correlations suggest that college students who identify as being resilient are also more likely to have higher GPAs, report higher levels of external protective factors, are more optimistic, are more self-efficacious, and have higher overall psychological well-being. As expected, resilience was found to be negatively related to stress during college (-.18, p<.01). This correlation suggests that the more stress that is present during college, the less likely they are to be resilient. Race, gender, and age were not found to be linked to resilience in a bivariate context.

Race was significantly related to optimism, self-efficacy, autonomy, and self-acceptance. Blacks, when compared to their White counterparts, were more optimistic, autonomous, self-accepting, and self-efficacious. The significant result found between gender and self-efficacy indicated that college males were more self-efficacious than college females in this study. Females, in comparison to their male counterparts, reported higher levels of optimism, positive relationships with others, personal growth, self-acceptance, purpose in life, and overall psychological well-being.

As expected optimism was positively correlated to GPA (r=.11, p<.01). This correlation suggests that students with higher GPAs were more optimistic than those with lower GPAs. The positive and significant correlation between self-efficacy and GPA (r=.11, p<.01) suggests that

as student GPA increases, self-efficacy also increases. A positive and significant relationship was found between GPA and all dimensions of psychological well-being with the exception of autonomy. These correlations suggest that higher GPAs are associated with higher levels of positive relationships with others, environmental mastery, personal growth, acceptance, and purpose in life. In essence, students with higher levels of internal protective factors reported a higher GPA in the last semester.

Correlational analysis revealed a very strong relationship among the six dimensions of psychological well-being. There was also a significant and positive correlation between optimism and self-efficacy (r=.45, p<.01). Optimism, self-efficacy, and all aspects of psychological well-being with the exception of personal growth were negatively, yet significantly, related to both stress variables. These results indicate that high levels of stress are associated with low levels of optimism and self-efficacy. Students with high levels of stress were also less likely to report having positive relationships with others, less likely to master the environment, less likely to engage in self-acceptance, and less likely to have a purpose in life. Autonomy was significantly, yet inversely, related to stress during college (r=.11, p<.01). This result indicates that high levels of stress during college are associated with low levels of autonomy.

As expected, external protective factors were positive and significantly correlated with optimism (r=.34, p<.01), self-efficacy (r=.34, p<.01), all six dimensions of psychological well-being (Positive Relationships with Others, r=.51, p<.01; Environmental Mastery r=.45, p<.01; Personal Growth, r=.29, p<.01; Autonomy, r=.18, p<.01; Self-Acceptance, r=.48, p<.01; & Purpose in Life, r=.36, p<.01), and overall well-being (r=.47, p<.01). The significant correlation between external protective factors and GPA (r=.16, p<.01) indicates that as GPA increases,

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levels of external protective factors also increase. Conversely, the correlation between external protective factors and age (r=-.14, p<.01) indicates that as age increases, levels of external protective factors decrease.

Multiple regression techniques were used to analyze the effects of internal and external protective factors, race, and gender on resilience while controlling for stress levels, age, and GPA. Before any further analyses were conducted, tolerance levels of all variables were examined in order to assess whether multicollinearity was a problem. Evidence of multicollinearity was indicated by having a tolerance level lower than .40. Resilience was first regressed on all control factors, optimism, self-efficacy, and the six different dimensions of psychological well-being. Tolerance levels of all independent variables were higher than .56 with the exception of positive relationships with others, environmental mastery, personal growth, self-acceptance, and purpose in life. The tolerance level associated with positive relationships with other was .42, environmental mastery was .34, personal growth was .49, self-acceptance was .30, and purpose in life was .36. Resilience was then regressed on all control factors, optimism, self-efficacy and the overall psychological well-being index. Tolerance levels of the independent variables were higher than .60 with the exception of overall well-being. The tolerance level associated with the overall well-being index was .46.

In the present study, the regression procedure was employed in several steps and models were developed. To interpret the results, statistical significance of each of the independent variables examined in this study was determined by a *t*-test. Statistical significance of each model was determined by evaluating the F-test. The adjusted r^2 values determined how much of the variance in resilience was explained by these models.

In the first step, resilience was regressed on race (White), gender (male), and all control variables (stressful life events, stress during college, GPA, and age) to form Model I. The second step regressed resilience on all variables included in Model I and external protective factors to form Model II. The third step was taken to develop two models, Model IIIa and Model IIIb. Model IIIa included all variables in Model II, plus optimism, self-efficacy, and all six dimensions of psychological well-being including positive relationships with others, environmental mastery, personal growth, autonomy, acceptance, and purpose in life. Model IIIb included all the variables of Model II, plus optimism, self-efficacy, and overall psychological well-being. Models IIIa and IIIb addressed the hypotheses indicating that higher levels of external protective factors, optimism, self-efficacy, and psychological well-being will also indicate higher levels of resilience. These models also addressed the non-directional hypotheses regarding levels of resilience among race and gender groups.

The fourth step was taken to develop two models, Model IVa and Model IVb. Model IVa included all the variables in Model IIIa and the interactions involving gender and optimism, self-efficacy, and all six dimensions of psychological well-being including positive relationships with others, environmental mastery, personal growth, autonomy, acceptance, and purpose in life. Model IVb included all of the variables in Model IIIb and the interactions involving gender and optimism, self-efficacy, and overall psychological well-being. The fifth step was also taken to develop two models, Model Va and Model Vb. Model Va included all variables in Model IIIa and the interactions involving race and optimism, self-efficacy, and all six dimensions of psychological well-being including positive relationships with others, environmental mastery, personal growth, autonomy acceptance, and purpose in life. Model Vb included all of the variables in Model IIb and the interactions involving race and optimism, self-efficacy, and

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overall psychological well-being. Models IVa, IVb, Va, and Vb directly addressed hypotheses

regarding interaction effects. More specifically, they addressed the hypotheses regarding whether

race and gender moderate the effects of optimism, self-efficacy, and psychological well-being on

resilience.

In the first model, race (b = -.16, t = -2.193), GPA (b = .06, t = 2.325), and stress during

college (b = -.04, t = -3.024) were all significantly related to resilience, F (6,559) = 4.57, p < .01.

As GPA increased, levels of resilience also increased. Also, race and stress during college were

inversely, yet significantly, related to resilience. As levels of stress during college decreased,

levels of resilience among students increased. Blacks also reported higher levels of resilience

than their White counterparts. Gender, age, and stressful life events were not found to be

significant in Model I which explained 5% of the variance in resilience.

Included in Model II were race, gender, all control variables and external protective

factors. As indicated in Table 3, gender, race, stress during college, and external protective

factors were all significantly related to resilience, F (7, 558) = 15.90, p < .01. The findings in the

second step mirror the findings in step one, with race and stress related to college being

significant predictors of resilience. The findings also indicated that as levels of external

protective factors increased (b = .44, t = 8.946), levels of resilience also increased among college

students. Males also reported higher levels of resilience than their female counterparts. The

model accounted for 17% of the explained variance of resilience.

The third step was taken to develop two models. Model IIIa included race, gender, all

control variables, optimism, self-efficacy, and the six dimensions of psychological well-being:

positive relationships with others, environmental mastery, personal growth, autonomy,

acceptance, and purpose in life as predictors of resilience. Results of Model IIIa indicated that

external protective factors (b = .10, t = 2.160), self-efficacy (b = .67, t = 10.01), environmental mastery (b = .14, t = 3.111), and autonomy (b = .05, t = 1.658) were all significantly related to resilience, $F (15, 550) = 31.09$, $p < .01$. Higher levels of external protective factors, self-efficacy, environmental mastery, autonomy, and self acceptance were associated with higher levels of resilience among college students. In this step, 46% of the variance of resilience was explained by this model. Self-efficacy made the largest contribution in explaining resilience (β=.42) as compared to the significant dimension of psychological wellbeing, environmental mastery (β=.17).This implies that for every standard deviation (SD) unit increase in self-efficacy, there is a .42 SD unit increase in resilience. After adding optimism, self-efficacy, and the six dimensions of psychological well-being to the model, stress during college and race were no longer statistically significant. The results suggest that internal and external protective factors significantly increased the explained variance of resilience.

Table 3

Multiple Regression of Resilience (N = 566)

| | Model I | | | Model II | | | Model IIIa | | | Model IIIb | | |
	Step 1			Step 2			Step 3					
Variables	b	(95% CI)	Beta	b	(95% CI)	Beta	B	(95% CI)	Beta	b	(95% CI)	Beta
Gender (Male)	0.10	(-.03-.22)	0.07	0.12*	(.01-.24)	0.08	0.02	(-.07-.12)	0.02	0.05	(-.05-.14)	0.03
Race/Ethnicity (White)	-0.16*	(-.31--.02)	-0.10	-.18*	(-.31--.04)	-0.11	-0.03	(-.15-.08)	-0.02	-.06	(-.17-.05)	-.03
GPA	0.06*	(.01-.12)	0.11	0.04	(-.01-.10)	0.07	0.01	(-.03-.05)	0.02	0.01	(-.04-.05)	0.01
Age	0.00	(-.01-.02)	0.01	0.01	(-.01-.02)	0.04	-.01	(-.02-.01)	0.04	-0.01	(-.02-.00)	-.04
Stressful life events	-0.01	(-.03-.02)	-0.02	0.01	(-.01-.04)	0.04	0.01	(-.01-.03)	-0.03	.01	(-.01-.03)	.03
Stress during college	-.04**	(-.06--.01)	-0.14	-.04**	(-.06--.01)	-0.13	-0.01	(-.03-.01)	-0.04	-.02*	(-.04-.00)	-.06
External Protective Factors				0.44**	(.35-.54)	0.36	0.10*	(.01-.20)	0.09	0.11*	(.02-.20)	.09
Optimism							0.04	(-.03-.11)	0.04	0.05	(-.02-.11)	.05
Self-Efficacy							0.67**	(.54-.80)	0.42	0.71**	(.59-.84)	.44
Pos. Rel. w/Others							-0.03	(-.10-.04)	-0.04			
Environmental Mastery							0.14**	(.05-.22)	0.17			
Personal Growth							0.13	(-.07-.09)	0.02			
Autonomy							0.05*	(-.01-.11)	0.07			
Acceptance							0.05	(-.04-.14)	0.07			
Purpose in Life							0.01	(-.07-.09)	-0.01			
Psychological Well-Being										0.21**	(.11-.31)	.20
Constant	5.64**			3.61**			2.00**			1.93**		
F-Test	4.57**			15.90**			31.09**			45.07**		
Adjusted R Square	0.04			0.16			0.44			.44		

*p<.05

**p<.01

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In Model IIIa, the six dimensions of psychological well-being were all included in the model in explaining resilience. In Model IIIb (Table 3), overall psychological well-being, rather than the six dimensions, was examined. As indicated in Model IIIb, stress during college (b = -.18, t = -1.772), external protective factors (b = .11, t = 2.285), self-efficacy (b = .71, t = 10.933), and overall psychological well-being (b = .21, t = 4.238) were all significantly related to resilience, F (10, 555) = 45.07, p < .01. In this step, 45% of the variance of resilience was explained by this model.

To explore whether or not protective factors significantly increase the predictive power of resilience, we compared the explained variance of resilience accounted for by only the control factors with the variance of resilience explained by the control factors and additional protective factors. To do this, we used the z-test of proportion. Comparing the explained variance of Model II (R^2=.17) to the explained variance of Model IIIa (R^2=.46), we found that the addition of external protective factors and internal protective factors significantly increased the predictive power of resilience (Z = 10.285, p < .01). Model IIIa included the control factors, external protective factors, optimism, self-efficacy, and all six dimensions of psychological well-being. We also compared the explained variance of Model II (R^2=.17) to the explained variance of Model IIIb (R^2=.45). The results also revealed that the addition of external protective factors and internal protective factors increased the predictive power of resilience (Z = 10.634, p < .01). Model IIIb included the control factors, external protective factors, optimism, self-efficacy, and overall psychological well-being.

To make decisions concerning the relationship between resilience and the internal protective factors as well as external protective factors, hypothesis testing was conducted. The first hypothesis in the present study stated that the higher the levels of external protective factors,

the higher the levels of resilience. The significant positive relationships found between resilience and external protective factors in both Models IIIa and IIIb confirmed this hypothesis.

Hypothesis two assumed the higher the level of optimism, the higher the level of resilience. The results of the data analysis yielded no support for this hypothesis in that optimism was not found to significantly affect resilience among college students. The third hypothesis stating that the higher the level of self-efficacy, the higher the level of resilience was confirmed by the study results. To support the fourth hypothesis stating that the higher the level of psychological well-being, the higher the level of resilience, the present study found that the overall psychological well-being index in Model IIIb as well as two of the six dimensions of psychological well-being, environmental mastery, and autonomy, were found to be significant in affecting resilience.

Two models were developed during the fourth step (Table 4). Model IVa included race, gender, all control variables, external protective factors, internal protective factors, and the interactions involving gender and the internal protective factors including optimism, self-efficacy, and the six dimensions of psychological well-being. As indicated in Table 4, external protective factors (b = .11, t = 2.266), self-efficacy (b = .72, t = 9.288), and environmental mastery (b = .15, t = 3.156) were significantly related to resilience, $F_{(23, 542)} = 20.64$, $p < .01$. The interaction terms involving gender and the internal protective factors were not found to be significant. When the interactions were added to the model, external protective factors remained significant. The model explained 47% of the variance of resilience.

Model IVb included race, gender, all control variables, external protective factors, optimism, self-efficacy, overall psychological well-being, and the interactions involving gender and the internal protective factors including optimism, self-efficacy, and overall psychological

well-being. As indicated in Table 4, external protective factors (b = .11, t = 2.295), self-efficacy (b = .71, t = 10.854) and overall psychological well-being (b = .23, t = 4.137) were all significantly and positively related to resilience, F (11, 554) = 40.98, p < .01. Stress during college was significantly, yet inversely, related to resilience (b = -.02, t = -1.711). However, none of the interactions were found to be statistically significant in Model IVb. The model explained 45% of the variance of resilience.

Table 4

Multiple Regression of Resilience on all Independent Variables and Interaction Effects (N = 566)

	Model IVa		Model IVb		Model Va		Model Vb	
	Step 4				Step 5			
Variables	*B*	*Beta*	*B*	*Beta*	*b*	*Beta*	*B*	*Beta*
Gender (Male)	0.25	0.17	.30	0.20	0.03	0.02	0.05	0.03
Race/Ethnicity (White)	-0.05	-0.03	-.06	-.04	-0.65	-0.39	-.73	-.44
GPA	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01
Age	-0.01	-0.04	-0.01	-0.04	-0.01	-0.04	-0.01	-0.04
Stressful life events	0.01	0.04	.01	.03	0.01	0.02	.01	.03
Stress during college	-0.01	-0.04	-.02*	-.06	-0.01	-0.04	-.02*	-.06
External Protective Factors	0.11*	0.09	0.11*	0.09	0.12*	0.10	0.11*	0.09
Optimism	0.03	0.03	0.05	0.05	0.14	0.17	0.04	0.05
Self-Efficacy	0.72**	0.45	0.71**	0.44	0.59**	0.37	0.71**	0.44
Pos. Rel. w/Others	0.00	0.01			-0.07	-0.10		
Environmental Mastery	0.15**	0.19			0.18	0.23		
Personal Growth	0.01	0.01			-0.02	-0.02		
Autonomy	0.03	0.04			-0.09	-0.12		
Acceptance	0.02	0.02			-0.01	-0.01		
Purpose in Life	0.00	0.00			0.09	0.12		
Well-Being			0.23**	0.21			0.09	0.09
Male*Optimism	0.07	0.18						
Male*Self-Efficacy	-0.18	-0.41						
Male*Pos. Rel. w/Others	-0.13	-0.42						
Male*Environmental Mastery	-0.11	-0.36						
Male*Personal Growth	-0.01	-0.04						
Male*Autonomy	0.11	0.34						
Male*Acceptance	0.14	0.45						
Male*Purpose in Life	0.03	0.09						
Male*Well-Being			-.05	-.17				
White*Optimism					-0.13	-0.30		
White*Self-Efficacy					0.09	0.18		
White*Pos. Rel. w/Others					0.05	0.16		
White*Environmental Mastery					-0.07	-0.20		
White*Personal Growth					0.04	0.11		
White*Autonomy					0.17*	0.48		
White*Acceptance					0.08	0.24		
White*Purpose in Life					-0.10	-0.30		
White*Well-Being							.14	.41
Constant	1.92**		1.85**		2.48**		2.48**	
F-Test	20.64**		40.98**		20.76**		41.29**	
Adjusted R Square	0.44		0.44		0.45		.44	

*p<.05
**p<.01

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As indicated in models IVa and IVb, none of the interaction effects were found to be significant. Instead of including interaction terms, we ran multiple regressions separately for males and females. This procedure was conducted so that we could take a detailed examination at how different variables operate to affect resilience for different gender groups. The results are shown in Table 5. When six dimensions of psychological well-being were included in the model, the results show that among males, self-efficacy (b = .55, t= 4.447) and self acceptance (b = .14, t = 1.737) were significantly related to resilience, F (14, 109) = 8.89, p < .01; while among females, stressful life events (b = .02, t = 1.845), external protective factors (b = .13, t = 2.319), self-efficacy (b = .72, t = 9.042), and environmental mastery (b = .15, t = 2.984) were all significantly related to resilience, F (14, 427) = 26.01, p < .01. When overall psychological well-being was included in the model, the results show that, among males, self-efficacy (b = .59, t = 4.885) and overall well-being (b= .16, t = 1.818) were significantly related to resilience, F (9, 114) = 12.77, p < .01; while among females, stressful life events (b = .03, t = 1.917), stress during college (b =-.02, t = -1.947), external protective factors (b =.13, t = 2.498), self-efficacy (b = .74, t = 9.610), and overall psychological well-being (b = .22, t = 3.654) were significantly related to resilience, F (9, 432) = 39.68, p < .01.

To elaborate the possible moderating role of gender in the effects of internal and external protective factors as well as control variables on resilience, *t*-tests were used to evaluate where significant gender differences in the impact of each independent factor on resilience could be identified. Significant gender differences are boldfaced in Table 5. The results indicated that stressful life events affected males and females differently (*t* = -2.26, p < .05), with the impact of stressful life events on resilience found to be stronger in males as compared to females.

To examine whether race moderated the effects of internal protective factors on resilience, Model Va and Model Vb were developed. Model Va included race, gender, all control variables, external protective factors, internal protective factors, and the interactions involving race and the internal protective factors including optimism, self-efficacy, and the six dimensions of psychological well-being. As indicated in Table 4, the interaction term involving race and autonomy was found to be significant (b = .17, t = 2.103). This significant interaction implied that every unit increase in autonomy was associated with a .08 unit increase in resilience among Whites but a .09 decrease in resilience among Blacks. External protective factors (b = .12, t = 2.480) and self-efficacy (b = .59, t = 3.207) were both significantly related to resilience, $F_{(23, 542)} = 20.76$, $p < .01$. As levels of external protective factors and self-efficacy increased, levels of resilience also increased. In this model, 47% of the variance of resilience was explained by this model.

Model Vb included race, gender, all control variables, external protective factors, optimism, self-efficacy, overall psychological well-being, and the interactions involving race and the internal protective factors including optimism, self-efficacy, and overall psychological well-being. As indicated in Table 4, stress during college (b = -.02, t = -1.778), self-efficacy (b = .71, t = 10.913), and external protective factors (b = .11, t = 2.327) were all significantly related to resilience, $F_{(11, 554)} = 41.29$, $p < .01$. However, none of the interactions were found to be statistically significant. In this model, 45% of the variance of resilience was explained by this model.

To further elaborate the moderating role of racial groups, regression models for Whites and Blacks were run separately. The results are shown in Table 6. When six dimensions of psychological well-being were included in the model, the results show that among Whites,

external protective factors (b = .09, t = 1.856), self-efficacy (b = .69, t = 10.589), environmental mastery (b = .12, t = 2.828), autonomy (b = .07, t = 2,396), and self-acceptance (b = .07, t = 1.759) were all significantly related to resilience, F (14, 462) = 36.57, p < .01; while among Blacks, age (b = -.03, t = -2.269) was significantly related to resilience, F (14, 74) = 3.01, p < .01. When overall psychological well-being was included in the model, the results show that among Whites, stress during college (b = -.02, t = -1.765), external protective factors (b = .09, t = 1.920), self-efficacy (b = .73, t = 11.640), and overall well-being (b = .24, t = 4.474) were significantly related to resilience, F (9, 467) = 54.83, p < .01; while among Blacks, age (b = -.03, t = -2.185), optimism (b = .23, t = 1.793), and self-efficacy (b = .47, t = 1.782) were significantly related to resilience, F (9, 79) = 4.31, p < .01.

To further explore whether or not race and gender played a moderating role in the impact of internal protective factors on resilience, we used z-test of proportions to compare the explained variance of the models that included interactions with the explained variance of the models that did not include interactions. For the model that included all six dimensions of well being (Model IIIa), the addition of interactions involving gender and the internal protective factors (Model IVa) did not significantly increase the predictive power of the model on resilience (Z = 0.270, p > .05). The inclusion of the interactions involving race and the internal protective factors (Model Va) did not significantly increase the predictive power of the model on resilience (Z = 0.304, p > .05). For the model that included overall psychological well-being (Model IIIb), the addition of interactions involving gender and the internal protective factors (Model IVb) did not significantly increase the predictive power of the model on resilience (Z = 0.034, p > .05). The inclusion of the interactions involving race and the internal protective factors (Model Vb) did not significantly increase the predictive power of the model on resilience (Z = 0.068,

p > .05).

   T-tests were also used to evaluate where significant racial differences could be identified. Significant racial differences are boldfaced in Table 6. The results indicated that age affected White and Blacks differently (t = 2.83, p < .05 and t = 2.70, p < .05), with a stronger impact of age on resilience found in Whites as compared to Blacks. This finding indicates that, for Whites, older students were more resilient. However, for Blacks, the younger students were more resilient. Overall, the results presented in Table 5 and Table 6 concerning the interactions involving race and internal protective factors did not provide support for the hypothesis stating that the effects of internal protective factors on resilience are different for Whites and Blacks in the study.

Table 5

Multiple Regression of Resilience for Different Genders

	Males		Females		Males		Females	
	Six Dimensions of PWB				Overall PWB			
	b	*Beta*	*B*	*Beta*	*b*	*Beta*	*b*	*Beta*
White	-0.23	-0.13	-0.10	-0.00	-0.23	-0.13	-0.02	-0.01
GPA	.05	0.09	-0.00	-0.01	0.08*	0.13	-0.01	-0.02
Age	0.01	0.06	-.01	-.06	0.02	0.09	-.01	-0.07
Stressful Life Events	-0.03	-0.09	0.02*	0.07	**-.03**	-0.11	**0.03***	0.08
Stress During College	0.00	0.02	-0.02	-0.06	0	-0	-0.02*	-0.08
External Protective Factors	0.05	0.04	.13*	0.10	0.03	0.03	.13*	0.11
Optimism	0.08	0.12	0.03	0.04	0.08	0.11	0.04	0.04
Self-Efficacy	.55**	0.37	.72**	0.43	.59**	0.40	.74**	0.45
Positive Relat. w/Others	-0.09	-0.14	-0.00	-0.00				
Environmental Mastery	0.03	0.04	.05**	0.18				
Personal Growth	0.01	0.01	0.05	0.01				
Autonomy	0.10	0.12	0.03	0.05				
Acceptance	.14*	0.21	0.02	0.03				
Purpose in Life	0.03	0.04	-0.01	-0.01				
Well-Being					0.16*	0.17	.22**	0.20
Constant	2.17**		1.92**		2.17**		1.82**	
F-Test	8.89**		26.01**		12.77**		39.68**	
Adjusted R Square	0.47		0.44		0.46		0.44	
	N=124		N=442		N=124		N=442	

*p<.05

**p<.01

Directional tests were used for all independent variables except for race, gender, and interaction terms

Table 6

Multiple Regression of Resilience for Racial/Ethnic Groups

| | White | | Blacks | | White | | Blacks | |
| | Six Dimensions of PWB | | | | Overall PWB | | | |
	b	Beta	B	Beta	b	Beta	b	Beta
Male	-0.01	-0.01	0.24	0.12	0.02	0.02	0.20	0.10
GPA	0.03	0.06	-0.07	-0.09	0.03	0.05	-0.08	-0.11
Age	**0.01**	0.06	**-0.03***	-0.23	**0.01**	0.06	**-0.03***	-0.22
Stressful Life Events	0.00	0.00	0.03	0.09	-.00	-0.01	.04	.10
Stress During College	-.01	-0.04	-0.01	-0.04	-0.02*	-0.06	-0.03	-0.08
External Protective Factors	0.09*	0.07	0.28	.19	0.09*	0.07	0.23	0.16
Optimism	0.01	0.01	0.21	0.19	0.01	0.01	0.23*	0.22
Self-Efficacy	0.69**	0.45	0.43	0.21	0.73**	0.48	0.47*	0.22
Positive Relat. w/Others	-0.01	-0.02	-0.12	-0.13				
Environmental Mastery	0.12*	0.16	0.12	0.13				
Personal Growth	0.02	0.02	-0.04	-0.04				
Autonomy	0.07*	0.10	-0.09	-0.10				
Acceptance	0.08*	0.10	0.00	0.00				
Purpose in Life	-0.02	-0.03	0.20	0.22				
Well-Being					0.24**	0.24	0.07	0.06
Constant	1.50**		2.77*		1.14**		2.90*	
F-Test	36.57**		3.01**		54.83**		4.31**	
Adjusted R Square	0.51		0.24		0.50		0.25	
	N=477		N=89		N=477		N=89	

*p<.05

**p<.01

Directional tests were used for all independent variables except for race, gender, and interaction terms

CHAPTER 5

DISCUSSION AND CONCLUSION

The purpose of this study was to examine the impact of internal and external protective factors on resilience among college students. Specifically, the study's objectives were to examine the effects of protective factors such as optimism, self-efficacy, and psychological well-being as well as positive and caring relationships in the home, school, among peers, and in the community, on resilience. Another objective was to explore whether race and gender moderate the effects of optimism, self-efficacy, and psychological well-being on resilience levels among college students.

As stated previously, the results of the present study suggest the following: (a) external protective factors, self-efficacy, and two of the dimensions of psychological wellbeing, environmental mastery, and autonomy were all significantly related to resilience; (b) race moderated the impact of one of the dimensions of psychological well-being, autonomy, on resilience; (c) internal protective factors were found to operate differently for different gender and racial groups in affecting levels of resilience; (d) stressful life events affected males and females differently, with a stronger negative impact of stressful life events on resilience found in males as compared to females; (e) age affected Whites and Blacks differently, with a stronger impact of age on resilience found among Whites as compared to Blacks; and (f) overall, race and gender were not found to be moderating effects of internal and external protective factors on resilience in this study.

Psychological well-being was one of the internal protective factors examined in this study which was broken down into six dimensions: purpose in life, personal growth, autonomy, environmental mastery, self-acceptance, and positive relationships with others. The dimensions of autonomy, environmental mastery, and self-acceptance were significantly related to resilience; however, the dimensions of positive relationships with others, personal growth, and purpose in life were not found to be significant in any of the models. This is surprising in that Wagnild (2010) argued that purpose in life is one of the most important characteristics of resilience. The insignificant results found between resilience and the three dimensions of psychological well-being, positive relationships with others, personal growth, and purpose in life, could have been attributed to the strong correlations found among the six dimensions of psychological well-being. According to Ryff and Essex (1992), the dimensions of psychological well-being converge around a set of core constructs and were derived from research on life span development, clinical accounts of positive functioning, and positive mental health. In the past, and in this study, correlational analysis revealed a very strong relationship between the dimensions. Ryff (1989) noted that high correlations between the dimensions can be problematic and "as the coefficients become stronger, they raise the potential problem of the criteria not being empirically distinct from one another" (p. 1074). In fact, several studies have found substantial overlap between the six dimensions of well-being (Clarke, Marshall, Ryff, & Wheaton, 2001; Hillson, 1997; Kafka & Kozma, 2002; Springer & Hauser, 2006)

Against expectation, optimism was not significantly related to resilience in the multivariate context. This finding conflicts with past research that strongly supports optimism as a factor contributing to resilience (Conchas & Clark, 2002; Eid & Diener, 2004; Tusaie & Patterson, 2006; Tusaie et al., 2007; Werner & Smith, 1992). This finding is also interesting in

the fact that some researchers contend that optimism and self-efficacy are antecedents to psychological well-being (Karademas et al., 2007; Scheier et al., 2001) and that people who are self-efficacious tend to be highly optimistic (Reivich & Shatté, 2002). That is, people who score positively in areas related to self-efficacy tend to score positively in areas related to optimism.

The findings between optimism and resilience could be explained in three ways. As previously stated, one of the questions was accidentally deleted during one of the data collection periods. Due to this error, approximately 200 cases were missing, and one question, worded in an optimistic manner, was deleted. Hence, only five questions were used in the final analysis; two worded in an optimistic manner and three worded in a pessimistic manner. This error could have caused differences in the results.

In the past, researchers have suggested that the Life Orientation Test-Revised (LOT-R) represents two constructs (instead of optimism as a single construct) and that optimism and pessimism should be run separately as two orthogonal constructs, worded positively and negatively (Bryant & Cvengros, 2004). Future research is warranted on using the LOT-R as two separate constructs. On another note, the unexpected finding could be the result of the strong correlations found between optimism and self-efficacy, leading to a strong impact found for self-efficacy but a non-significant result for optimism.

In the present study, self-efficacy was significantly related to resilience after controlling for external protective factors, optimism, all six dimensions of psychological well-being, and all control variables. Rutter (1993) contended that positive self-efficacy gives individuals the skills that are necessary to approach and meet life's demands. Self-efficacy is also the belief one can perform competently across varying ranges of situations and contexts. Hence, it was expected that individuals who scored high on self-efficacy would also score high on areas related to

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managing and mastering their environments, possessing positive attitudes towards self, and self-determination and independence. Similarly, previous studies have addressed significant findings between self-efficacy and psychological well-being and higher levels of resilience (Dent & Cameron, 2003; Davey et al., 2003; Garmezy, 1991; Jerusalem & Mittag, 1995; Resnick et al., 1993; Werner, 1982).

Our data indicated a strong correlation between external protective factors and levels of resilience among college students. These results mirror previous studies in that support, monitoring, and open communication in the home, school connectedness, presence of at least one caring person, and positive relationships among peers have all been associated with higher levels of resilience and adjustment among groups (Dent & Cameron, 2003; Merdinger et al., 2005; Wasonga et al., 2003; Wolkow & Ferguson, 2001; Zimmerman et al., 2003).

One noteworthy finding is that race moderated the impact of one of the dimensions of psychological well-being, autonomy, on resilience. Specifically, for Whites, the high levels of autonomy were associated with high levels of resilience. However, for Blacks, the high levels of autonomy were associated with low levels of resilience. This finding could be related to the idea that parenting styles differ by race/ethnicity (Garcia & Pachter, 2002; Radziszewska, Richardson, Dent, & Flay, 1996). As indicated in previous literature (Radziszewska et al.), Whites prefer parenting trends that support a more authoritative approach to parenting. Conversely, authoritarian parenting is more associated with Black families (Radziszewska et al.). A common feature of the authoritative parenting style is that of autonomy granting and the expression of freedom and individuality (Gray & Steinberg, 1999). In return, autonomy granting has been associated with academic competence (Gray & Steinberg), academic motivation (Gonzalez, Holbein, & Quilter, 2002), perceptions of control (Fulton & Turner, 2008), and overall positive

development (Baumrind, 1989, 1991). Hence, the high levels of autonomy associated with high levels of resilience among Whites could be associated with the preferred parenting style associated with White families. Even though students no longer live with their parents, the autonomy beliefs were probably fostered and developed during childhood and perpetuated during adolescence. The present study's results clearly indicate that autonomy was more important in terms of increasing resilience among Whites than Blacks. Future research is warranted on the effects of autonomy on resilience.

Even though race and gender were not found to be related to resilience in a multivariate context, internal and external protective factors were found to operate differently for different gender and racial groups in affecting levels of resilience. Stressful life events, stress during college, external protective factors, and environmental mastery were significantly related to resilience for females but not for males. Self-acceptance, however, significantly affected resilience for males but not for females. Among Whites, external protective factors, environmental mastery, autonomy, self-acceptance, and overall psychological well-being were significantly related to resilience, while among Blacks, age and optimism were significantly related to resilience.

Past research alludes to the importance of different socialization processes among racial and gender groups (Centers for Disease Control and Prevention, 2008; McDaniel et al., 2009; Nettles & Johnson, 1987; Rodriguez, 2010; U.S. Census Bureau, 2009). For example, it could be that females, in comparison to males, are socialized into roles that give them the ability to control and manage their environments, which strengthens their adaptability in terms of resilience. On the same note, it could be that Whites encounter experiences, more readily than Blacks, which place them in roles that they have to effectively manage their surroundings to increase their

adaptability. The finding illustrating the significant effects of overall psychological well-being on resilience for Whites but not for Blacks may have resulted from the small sample size of Black respondents. Future research is warranted on why internal protective factors affect racial and gender groups differently in terms of resilience (Vega, 1992).

The present study's results show that external protective factors play a more significant role in developing resilience among Whites and females rather than for Blacks and males. External protective factors in the present study were indicated by the presence of role models, supportive relationships, open communication, school connectedness, and positive relationships among peers. The quality of these factors could affect racial and gender groups differently. Future research should execute in-depth evaluations of how these factors lead to different levels of adaptability in terms of resilience among the racial and gender groups.

One additional finding which pointed the differences between males and females indicated a significant negative impact of stressful life events on resilience for males but not females. Previous studies have found that females report and experience higher levels of stress than their male counterparts (Almeida & Kessler, 1998; Hetherington, 1989; Somchit & Sriyaporn, 2004; Tusaie & Patterson, 2006). However, more traumatic events were found to be present for males more often than for females (Gavranidou & Rosner, 2003). In addition, men and women share environmental surroundings and influences, but are socialized into different roles (Gavranidou & Rosner). These socialized roles can affect the pattern of traumatic events, mental and physical coping resources, and the ways in which the gender groups place meaning on the event. Some studies suggest that men are exposed to more dangerous jobs and surroundings (Breslau, 2002; Freedman et al., 2002) and this increases that probability of encountering highly stressful and life challenging events. The significant and negative impact of

stressful life events on resilience among males, but not females, could be attributed to qualitative differences of life experiences encountered by gender groups.

Finally, an additional finding pointed to the differences between Whites and Blacks, which indicated a significant impact of age on resilience for Whites but not for Blacks. Previous studies suggested that Black college students report different racial attitudes compared to those of White college students (Feagin, 1992; Hewitt & Seymour, 1991; Nettles, Theony, & Gosman, 1986). Consequently, research suggested that Black students experience campus life differently due to racial discrimination (Feagin). Feagin further contended that the impact of discrimination on Black students in college may be more prevalent at large, predominately White universities as opposed to smaller colleges and historically Black colleges. Other adjustment issues reported by Black students in the college setting include lack of academic preparedness at the elementary and secondary level (Cross & Slater, 2000; Harper, Patton, & Wooden, 2009), feelings of alienation (Loo & Rolison, 1986), lack of academic integration (Harper et al., 2009; Nettles et al.), racial/ethnic composition (Nettles et al.), lack of social support in the college environment (Allen, 1992) and feelings of "subtle" racism and discrimination (Harper et. al.; Hewitt & Seymour; Nettles et al.). These patterns, as well as racism and discrimination perceived by Black students in the college setting, can affect the ways in which Black students place meaning on the college environment, possibly leading to low persistence rates in graduation and lower levels of resilience as they matriculate throughout their college years. Hence, the significant impact of age on resilience among Whites, but not Blacks, could be attributed to qualitative differences of college experiences encountered by racial groups.

The present study's findings hold implications for theoretical and empirical development of resilience as well as practices in educational settings. These findings are consistent with

previous studies. Gilligan (1998) contended that the educational environment has a major influence on resilience in that the school provides students with a range of opportunities that may not be available in other aspects in one's life. These opportunities, which include giving students control over activities, school connectedness, high-quality education, positive interactions with peers, problem solving activities, character education, etc., have the ability to develop and boost self-esteem and self-efficacy (Gilligan). In their study on educational resilience among students, Waxman et al. (2003) found four characteristics of the resilient group: competence, problem solving ability, autonomy and sense of purpose. They contended that the aforementioned traits are not fixed and can be promoted within the school setting. Employing self-efficacy techniques in creating goals, programming, and curriculum are also important. This can be achieved by getting students involved in decision-making activities, planning, goal attainment, teaching students to cope with failure, providing opportunities to explore new activities, and increasing the challenges of tasks that come along with new activities (Gillespie, Chaboyer, & Wallis, 2007; Waaktaar, Christie, Borge, & Torgersen, 2004). These characteristics can also be taught in the school through character education programs, teaching students metacognitive awareness, competence-building activities, etc. (Morrison & Allen, 2007). More specifically, these programs and activities include teaching individuals to resist peer pressure, teaching them to respect differences, building confidence in one's own abilities, coping mechanisms for handling past negative experiences, and teaching the importance of goals setting, all which are important to self-acceptance, environmental mastery, and autonomy.

Ways to enhance resilience among college students, therefore, can be tied to educational programs and classroom activities that will promote self-efficacy, positive relationships with others, environmental mastery, and autonomy. For example, using collaborative learning

activities in the classroom facilitates positive interactions with others, goal-oriented behaviors, and skills in managing the environment, leading to student learning and competence in college environments. In return, these collaborative learning activities can be transformed into activities that will assist with survival in the collegiate setting and throughout the lifespan. Other ways to enhance resilience include intervention programs during new student orientation. College administrators can enhance resilience by informing parents of the importance of psychological well-being on academic success among students and by encouraging students to seek support networks or provide one for them. Along with parenting programs, information on psychological well-being can be used in a variety of different contexts in the college environment which include assessments at the counseling center, wellness curriculum programs, residence halls, first-year experience programs, etc. This information can aid college administrators and parents on the degree to which their students are self-accepting, are pursuing meaningful goals with a sense of purpose in life, have established relationships with others, have the ability to manage complex environments, and continue to grow and develop (Ryff & Keyes, 1995). These collaborative learning activities, new student orientation programs, and college intervention programs are important because they assist with the transition from adolescence to adulthood. These programs may also need to be tailored towards racial and gender groups based on the findings from this study.

The differential effects of internal and external protective factors on resilience for racial/ethnic groups found in the present study contributes to the emerging fourth wave on resilience research, which examines cultural influences in a multilevel context (Clauss-Ehlers, 2004). While race was not found to significantly moderate the effects on protective factors on resilience, several protective factors operated differently in fostering resilience among Whites

and Blacks. Specifically, our findings indicated that among Whites, external protective factors, environmental mastery, autonomy, self-acceptance, and overall psychological well-being were significantly related to resilience, while among Blacks, optimism was significantly related to resilience. It is possible that the collectivist approach of one culture versus the individualistic approach of another could explain these findings. Future research is warranted to identify specific cultural factors that may explain resilience among the different racial groups.

The present study's results, which support the important roles of internal and external protective factors in fostering resilience in the college setting, add to the emerging research within positive psychology. Linley, Joseph, Harrington, and Wood (2006) contended that positive psychology is in the beginning stages of understanding strengths and virtues that are so important to interpersonal and social networks in facilitating successful lives. Incorporating protective factors to understand the adjustment process, the present study contributes to positive psychology by identifying relevant factors that play a role in success, quality of life, and happiness.

Positive psychology has a strength-based focus, but definitions of resilience include stress and the ability to cope or bounce back from adversity. Thus, measuring stress is also important. Collecting data pertaining to stressors and impediments experienced by a group of college students in the pilot study, we developed a new measure of college-related stress to be included in the final data collection. This new measure complimented the stressful life events measure by incorporating factors more relevant to the college setting and proximal to their current situations. Because there is paucity in the research on resilience and college students, the results from the pilot study contribute to the existing resilience literature on stressful life events and add to the literature on stressful events or situations specific to college students.

Although there were many significant results found in this study, the limitations should be discussed. The sample size for this study was sufficient to test the proposed hypothesis; however, it was comprised solely of college students from one research-intensive university located in the southeast. In addition, we used convenience sampling techniques in this study. As a result, the final sample consisted of a limited number of male and Blacks participants. Therefore, the results of our study call into questions of generalizability.

The use of a cross-sectional design is another limitation of this study. Cross-sectional data limit the ability to demonstrate cause-effect relationships and temporal ordering. While the cause-effect relationships between internal and external protective factors and resilience were theoretically assumed, futures longitudinal studies are warranted that can provide a more thorough understanding of the relationships among the variables.

The data collected for this study is limited to individual level analysis. Since individual level resilience and protective factors can only be thoroughly understood by taking into account the larger social context such as neighborhoods, schools, and families, future research is warranted on multiple levels of analysis as suggested by the fourth wave of research on resilience (Masten, 2007). For example, the external protective factors were found to have significant effects on resilience. Thus, it will be beneficial to contextualize these factors, which, in turn, will help foster individual level resilience.

In sum, this research represents an important step in adding to the literature on resilience, by incorporating research on college students and adding to the emerging fourth wave on resilience. In addition, it reveals important findings regarding protective factors and resilience. Some researchers have found college students to be "low risk" and some already consider individuals resilient if they make it to college (Floyd, 1996). However, researchers have found

that stress among the college population is steadily increasing and that college students face unique problems such as changes in sleeping and eating habits, increased workload, parental demands, and changes in social activities (Steinhardt & Dolbier, 2008). Studies have also found that stress can negatively affect academic performance and survival in the collegiate environment (McCarthy et al., 2006). Specifically in relation to college students, the findings from this study suggest ways in which resilience intervention programs can assist students who may experience adversity in the collegiate environment—for example, by making programs available through counseling services. The findings also suggest ways professionals can assist students who may be making the transition to college. Hence, it is essential that educators consider the evidence from this study and utilize it to promote programs fostering resilience. Despite its limitations, the present study's examination of the impact of protective factors and resilience as well as race and gender interaction effects improved the overall understanding of positive development among college students.

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APPENDIX A

Measures

Variable	Measurement

Resilience (Alpha .89)

On a seven-point scale from (1) *Strongly Disagree* to (7) *Strongly Agree.*

1. When I make plans, I follow through with them.
2. I usually manage one way or another.
3. I am able to depend on myself more than anyone else.
4. Keeping interested in things is important to me.
5. I can be on my own if I have to.
6. I feel proud that I have accomplished things in life.
7. I usually take things in stride.
8. I am friends with myself.
9. I feel that I can handle many things at a time.
10. I am determined.
11. I seldom wonder what the point of it all is.
12. I take things one day at a time.
13. I can get through difficult times because I've experienced difficulty before.
14. I have self-discipline.
15. I keep interested in things.
16. I can usually find something to laugh about.
17. My belief in myself gets me through hard times.
18. In an emergency, I'm someone people can generally rely on.
19. I can usually look at a situation in a number of ways.
20. Sometimes I make myself do things whether I want to or not.
21. My life has meaning.
22. I do not dwell on things that I can't do anything about.
23. When I'm in a difficult situation, I can usually find my way out of it.
24. I have enough energy to do what I have to do.
25. It's okay if there are people who don't like me.
26. I am resilient.

Variable	Measurement

Optimism (Alpha .71)

On a five-point scale from (1) *I Agree A Lot* to (5) *I Disagree A Lot*

1. In uncertain times, I usually expect the best.
2. It is easy for me to relax.
3. If something can go wrong for me, it will.
4. I am always optimistic about my future.
5. I enjoy my friends a lot.
6. It is important for me to keep busy.
7. I hardly ever expect things to go my way.
8. I don't get upset too easily.
9. I rarely count on good things happening to me.
10. Overall, I expect more good things to happen to me than bad.

Self-Efficacy (Alpha .91)

On a four-point scale from (1) *Not True At All* to (4) *Exactly True*

1. I can always manage to solve difficult problems if I try hard enough.
2. If someone opposes me, I can find the means and ways to get what I want.
3. It is easy for me to stick to my aims and accomplish my goals.
4. I am confident that I could deal efficiently with unexpected events.
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.
6. I can solve most problems if I invest the necessary effort.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.
8. When I am confronted with a problem, I can usually find several solutions.
9. If I am in trouble, I can usually think of a solution.
10. I can usually handle whatever comes my way.

Variable	Measurement

Psychological Well-Being (Alpha .88)

On a six-point scale from (1) *Strongly Disagree* to (6) *Strongly Agree*

Positive Relationships with Others (Alpha .82)

1. Most people see me as loving and affectionate.
2. Maintaining close relationships has been difficult and frustrating for me.
3. I often feel lonely because I have few close friends with whom to share my concerns.
4. I enjoy personal and mutual conversations with family members or friends.
5. I don't have many people who want to listen when I need to talk.
6. It seems to me that most other people have more friends than I do.
7. People would describe me as a giving person, willing to share my time with others.
8. I have not experienced many warm and trusting relationships with others.
9. I know that I can trust my friends, and they know they can trust me.

Environmental Mastery (Alpha .80)

10. In general, I feel I am in charge of the situation in which I live.
11. The demands of everyday life often get me down.
12. I do not fit very well with the people and the community around me.
13. I am quite good at managing the many responsibilities of my daily life.
14. I often feel overwhelmed by my responsibilities.
15. I generally do a good job of taking care of my personal finances and affairs.
16. I am good at juggling my time so that I can fit everything in that needs to be done.
17. I have difficulty arranging my life in a way that is satisfying to me.
18. I have been able to build a home and a lifestyle for myself that is much to my liking

Personal Growth (Alpha .73)

19. I am not interested in activities that will expand my horizons.

20. I don't want to try new ways of doing things - my life is fine the way it is.

21. I think it is important to have new experiences that challenge how you think about yourself and the world.

22. When I think about it, I haven't really improved much as a person over the years.

23. I have a sense that I have developed a lot as a person over time.

24. I do not enjoy being in new situations that require me to change my old familiar ways of doing things.

25. For me, life has been a continuous process of learning, changing, and growth.

26. I gave up trying to make big improvements or changes in my life a long time ago.

27. There is truth to the saying that you can't teach an old dog new tricks.

Autonomy (Alpha .80)

28. I am not afraid to voice my opinions, even when they are in opposition to the opinions of most people.

29. My decisions are not usually influenced by what everyone else is doing.

30. I tend to worry about what other people think of me.

31. Being happy with myself is more important to me than having others approve of me.

32. I tend to be influenced by people with strong opinions.

33. I have confidence in my opinions, even if they are contrary to the general consensus.

34. It's difficult for me to voice my own opinions on controversial matters.

35. I often change my mind about decisions if my friends or family disagree.

36. I judge myself by what I think is important, not by the values of what others think is important.

Self-Acceptance (Alpha .85)

37. When I look at the story of my life, I am pleased with how things have turned out.
38. In general, I feel confident and positive about myself.
39. I feel like many of the people I know have gotten more out of life than I have.
40. I like most aspects of my personality.
41. I made some mistakes in the past, but I feel that all in all everything has worked out for the best.
42. In many ways, I feel disappointed about my achievements in life.
43. My attitude about myself is probably not as positive as most people feel about themselves.
44. The past had its ups and downs, but in general, I wouldn't want to change it.
45. When I compare myself to friends and acquaintances, it makes me feel good about who I am.

Purpose in Life (Alpha .82)

46. I live life one day at a time and don't really think about the future.
47. I tend to focus on the present, because the future nearly always brings me problems.
48. My daily activities often seem trivial and unimportant to me.
49. I don't have a good sense of what it is I'm trying to accomplish in life.
50. I used to set goals for myself, but that now seems like a waste of time.
51. I enjoy making plans for the future and working to make them a reality.
52. I am an active person in carrying out the plans I set for myself.
53. Some people wander aimlessly through life, but I am not one of them.
54. I sometimes feel as if I've done all there is to do in life.

Variable	Measurement

External Protective Factors (Alpha .90)

On a five-point scale from (1) *Strongly Disagree* to (5) *Strongly Agree*

1. I feel close to people at this school.
2. I am happy to be at this school.
3. I feel like I am part of this school.
4. The professors at this school treat students fairly.
5. I feel safe at my school.
6. Outside of my home and school, there is an adult who really cares about me.
7. Outside of my home and school, there is an adult who tells me when I do a good job.
8. Outside of my home and school, there is an adult who notices when I am upset about something.
9. Outside of my home and school, there is an adult who believes that I will be a success.
10. Outside of my home and school, there is an adult who always wants me to do my best.
11. Outside of my home and school, there is an adult, whom I trust.
12. I have a friend about my own age who really cares about me.
13. I have a friend about my own age who talks with me about my problems.
14. I have a friend about my own age who helps me when I'm having a hard time.
15. In my home, there is a parent or some other adult who expects me to follow the rules.
16. In my home, there is a parent or some other adult who is interested in my school work.
17. In my home, there is a parent or some other adult who believes that I will be a success.
18. In my home, there is a parent or some other adult who talks with me about my problems.
19. In my home, there is a parent or some other adult who always wants me to do my best.
20. In my home, there is a parent or some other adult who listens to me when I have something to say.

Variable	Measurement

Stressful Life Events (Alpha .68)

On a two-point scale from (1) *Yes* to (2) *No*

1. Have you ever had a life-threatening illness?

2. Were you ever in a life-threatening accident?

3. Was physical force or a weapon ever used against you in a robbery or mugging?

4. Has an immediate family member, romantic partner, or very close friend died because of accident, homicide, or suicide?

5. At any time, has anyone (parent, other family member, romantic partner, stranger or someone else) ever physically forced you to have intercourse, or to have oral or anal sex against your wishes, or when you were helpless, such as being asleep or intoxicated?

6. Other than experiences mentioned in earlier questions, has anyone ever touched private parts of your body, made you touch their body, or tried to make you to have sex against your wishes?

7. When you were a child, did a parent, caregiver or other person ever slap you repeatedly, beat you or otherwise attack or harm you?

8. Have you ever been kicked, beaten, slapped around or otherwise physically harmed by a romantic partner, date, family member, stranger, or someone else?

9. Has a parent, romantic partner, or family member repeatedly ridiculed you, put you down, ignored you, or told you were no good?

10. Other than the experiences already covered, has anyone ever threatened you with a weapon like a knife or gun?

11. Have you ever been present when another person was killed? Seriously injured? Sexually or physically assaulted?

12. Have you ever been in any other situation where you were seriously injured or your life was in danger?

13. Have you ever been in any other situation that was extremely frightening or horrifying, or one in which you felt extremely helpless, that you haven't reported?

Stress During College (Alpha .64)

14. Have you ever been faced with problems such as paying tuition, purchasing books, paying bills, or paying rent?

15. Has a family member become sick or died because of a terminal illness.

Variable	Measurement
	On a two-point scale from (1) *Yes* to (2) *No*

16. Have you ever encountered problems because of uncertainty about plans after graduation, not having enough credits or having to retake a course?

17. Have you ever encountered problems because of issues associated with belonging to a fraternity or a sorority?

18. Have you ever encountered problems because of a mental illness such as depression, ADHD, or anxiety, etc?

19. Have you encountered problems because of underage drinking, hangovers, partying too much, or fear of being arrested?

20. Have you encountered problems because of not meeting parent's expectations?

21. Have you encountered problems due to the lack of effective study skills such as time management, procrastination, note-taking and concentration, etc?

22. Have you encountered problems due to the parking situation on campus?

23. Have you encountered problems due to rumors or information presented on social networking sites such as myspace, facebook, or twitter, etc?

Variable	Measurement
Race (White)	Race/Ethnicity recoded to
	0=Blacks
	1=White

Variable	Measurement
Gender (Male)	Gender recoded to
	0=Female
	1=Male

Variable	Measurement
Age	What is your age? Ages included those 18-47.

Variable	Measurement
College GPA	College GPA recoded to
	5=3.6-4.0
	4=3.1-3.5
	3=2.6-3.0
	2=2.5-2.1
	1= Below 2.1